

OCCASIONAL
P A P E R

The Legal and Economic Implications of Electronic Discovery

Options for Future Research

James N. Dertouzos, Nicolas M. Pace,
Robert H. Anderson



RAND INSTITUTE FOR CIVIL JUSTICE

OCCASIONAL
P A P E R



The Legal and Economic Implications of Electronic Discovery

Options for Future Research

James N. Dertouzos, Nicholas M. Pace,
Robert H. Anderson



INSTITUTE FOR CIVIL JUSTICE

The research described in this report was conducted within the RAND Institute for Civil Justice (ICJ). ICJ research is supported by pooled grants from corporations, trade and professional associations, and individuals; by government grants and contracts; and by private foundations.

Library of Congress Cataloging-in-Publication Data is available for this publication.

ISBN #978-0-8330-4422-8

The RAND Corporation is a nonprofit research organization providing objective analysis and effective solutions that address the challenges facing the public and private sectors around the world. RAND's publications do not necessarily reflect the opinions of its research clients and sponsors.

RAND® is a registered trademark.

© Copyright 2008 RAND Corporation

All rights reserved. No part of this book may be reproduced in any form by any electronic or mechanical means (including photocopying, recording, or information storage and retrieval) without permission in writing from RAND.

Published 2008 by the RAND Corporation
1776 Main Street, P.O. Box 2138, Santa Monica, CA 90407-2138
1200 South Hayes Street, Arlington, VA 22202-5050
4570 Fifth Avenue, Suite 600, Pittsburgh, PA 15213-2665
RAND URL: <http://www.rand.org/>
To order RAND documents or to obtain additional information, contact
Distribution Services: Telephone: (310) 451-7002;
Fax: (310) 451-6915; Email: order@rand.org

Preface

This paper reports on exploratory research to identify the most important legal and economic implications of electronic discovery and to develop a research plan in this subject area for the RAND Institute for Civil Justice. To achieve these objectives, we reviewed the current state of electronic discovery (e-discovery) law and practices, including the main features of the new federal rules, interviewed several experts in electronic discovery issues as well as in-house counsel for a number of very large corporations, conducted an initial modeling effort to simulate the range of plausible effects of e-discovery on case outcomes, and analyzed the implications of our results for future research.

This paper should be of interest to the research community and to those who are potential funders of policy analysis in this area.

The RAND Institute for Civil Justice

The mission of RAND Institute for Civil Justice (ICJ) is to improve private and public decisionmaking on civil legal issues by supplying policymakers and the public with the results of objective, empirically based, analytic research. ICJ facilitates change in the civil justice system by analyzing trends and outcomes, identifying and evaluating policy options, and bringing together representatives of different interests to debate alternative solutions to policy problems. ICJ builds on a long tradition of RAND research characterized by an interdisciplinary, empirical approach to public policy issues and rigorous standards of quality, objectivity, and independence.

ICJ research is supported by pooled grants from corporations, trade and professional associations, and individuals; by government grants and contracts; and by private foundations. ICJ disseminates its work widely to the legal, business, and research communities and to the general public. In accordance with RAND policy, all ICJ research products are subject to peer review before publication. ICJ publications do not necessarily reflect the opinions or policies of the research sponsors or of the ICJ Board of Overseers.

Information about ICJ is available online (<http://www.rand.org/icj/>). Inquiries about research projects should be sent to the following address:

Robert T. Reville, Director
RAND Institute for Civil Justice
1776 Main Street
P.O. Box 2138
Santa Monica, CA 90407-2138
310-393-0411 x6786
Fax: 310-451-6979
Robert_Reville@rand.org

Contents

Preface	iii
Figure and Tables	vii
Summary	ix
Acknowledgments	xiii
Abbreviations	xv
SECTION 1	
Introduction	1
Study Purpose and Approach	2
Key Concerns	2
Organization of This Paper	4
SECTION 2	
The Current State of E-Discovery Law	7
Scarce Legal Guidance	7
Federal Rules of Civil Procedure Revisions	9
The Future of E-Discovery	12
SECTION 3	
Exploratory Model of Case Outcomes	13
Litigation Costs and Benefits	13
Incentives to Settle	14
E-Discovery and the Costs and Benefits of Litigation	15
Probable Effects of E-Discovery	17
SECTION 4	
Proposed Research Agenda	19
Conceptual Overview	19
Project Descriptions	20
Impact of E-Discovery on Litigation Outcomes	20
The Costs of E-Discovery	21
Forward-Looking Review of Emerging Technologies	21
Evaluation of Federal Rules	21
Assessment of Indirect Effects of E-Discovery on Business Practices	21

Figure and Tables

Figure

- 4.1. Influence of Technology, Business Practices, and Legal Policy on Outcomes..... 20

Tables

- 2.1. Electronic Discovery Amendments to FRCP, December 2006 10
3.1. Probable Effects of E-Discovery by Case Type..... 18

Summary

Pretrial discovery, involving the exchange of relevant information between litigants, is central to the American civil legal process. With the development of computer technologies, most information that is produced, distributed, and stored by business now exists in electronic form. Based on a review of the literature, interviews with practitioners (corporate counsel, information technology [IT] directors, and independent law firms) and a preliminary modeling effort, this paper identifies several salient legal and economic issues raised by e-discovery and proposes an agenda of research designed to improve future policy.

New technology can promote the efficient flow of information, thereby improving the civil justice system. However, if not managed properly, it is also possible that the sheer volume and complexity of electronically stored information (ESI) can increase litigation costs, impose new risks on lawyers and their clients, and alter expectations about likely court outcomes. Such changes could influence litigation patterns such as the propensity to file suits, the amounts of settlements, and the frequency of trials. In addition, businesses could face higher operational costs as they adopt technologies and IT practices in response to the likelihood of e-discovery requests. These costs could well increase dramatically with the size, scope, and complexity of business functions. On the other hand, smaller businesses, with less sophisticated technologies and methods for responding to e-discovery requirements, may face a disadvantage in the competitive world of litigation.

In response to concerns raised about these issues, there have been recent changes in the Federal Rules of Civil Procedure that focus on electronic discovery. However, many questions remain about their implementation, likely impact, and whether similar rules should be adopted at the state level. Furthermore, anticipated changes in technology, such as new communications platforms, improved search tools, and increased storage capacity, are likely to alter the future landscape significantly. Thus, e-discovery will be a topic of considerable policy importance for many years.

Given the importance of these issues, the RAND Institute for Civil Justice is supporting new research on e-discovery. This paper presents the results of an exploratory study to identify the most important legal and economic implications of e-discovery and to develop a plan of research to be conducted over the next several years. Our approach involved four tasks: We conducted multiple interviews with plaintiff and defense attorneys as well as IT personnel and in-house counsel for a number of large corporations; we reviewed the current state of e-discovery law and practices, including the main features of the new Federal Rules of Civil Procedure; we conducted an initial modeling effort to simulate the range of plausible effects of e-discovery on case outcomes; and we analyzed the implications of our results for future research.

Results of Interviews

Our interviews highlighted a number of concerns about the effects of e-discovery on the legal system. First, the most frequent point mentioned in interviews was the rising costs of reviewing information produced in e-discovery. Interviewees claimed that as much as 75 to 90 percent of cost increases come from the additional time it takes attorneys to conduct an “eyes-on” review of electronic documents. Although interviewees acknowledged that certain types of litigation may be less affected by these trends, it is likely that, in many areas of litigation, increasing costs are changing perceptions about case value and influencing incentives to file suits, settle cases, and go to trial.

Second, interviewees expressed concern about the vulnerability of electronic evidence: Those requesting evidence emphasized the risk of willful tampering or destruction of evidence, and those producing evidence emphasized the potential for significant sanctions for inadvertent failure to preserve information.

Third, interview results were mixed concerning the new federal rules on e-discovery. Although many interviewees were optimistic that the new rules would reduce inconsistencies among states in handling electronic evidence, they felt that the regulations did not go far enough to clarify the steps that should be taken with potential evidence in advance of and during litigation.

Current State of E-Discovery Law

Despite all the concern about e-discovery, there have been very few judicial rulings at either the federal or state level to help litigants make decisions about such evidence. Because only a handful of states have had formal rules of discovery tailored to electronic data and because appellate cases are silent on the subject, typically existing laws that govern paper-based discovery have been applied to electronic data. The few trial court decisions that have explored e-discovery issues have provided some guidance to the legal community. Besides those, until the Federal Rules of Civil Procedure were enacted in December 2006, two other sources have been used to define certain parameters: the Sedona Conference guidelines and the American Bar Association’s *Civil Discovery Standards*.

The new federal rules are expected to influence the way electronic evidence is understood and handled in many states. They define with more specificity what e-discovery includes and they clarify how it should be produced. For example, the rules distinguish between relevant data that are “reasonably accessible” and must be produced without complaint and data that would impose an undue burden or expense to retrieve and therefore must be identified and preserved but need not be produced unless requested by the judge. The new rules also offer guidance about the format for production, what to do when privileged information is inadvertently shared, and what restrictions apply to sanctions for data lost in circumstances that were clearly unintended.

However, the new rules leave a number of key questions unresolved: For example, what constitutes “reasonably accessible” data? What steps should be taken to preserve electronic information that might be sought as evidence? And what are the potential legal ramifications of adopting different business practices?

Results of Exploratory Modeling

To explore the potential impact of e-discovery on litigation outcomes, we developed an illustrative model of legal decisionmaking. Although the work is preliminary, it indicates that a theoretical model can lead to testable empirical results developed in future studies. The simulations produced by the preliminary model identify a range of plausible effects of e-discovery on litigation, depending on certain case characteristics.

The model assumes that plaintiffs and defendants form expectations of litigation costs and benefits based on the information they receive about likely legal outcomes. The expected value of a case to plaintiffs, for example, is their estimate of the probability of a range of possible awards, including the chance that they will lose the case. For defendants, the value of a case represents a risk-adjusted expected liability based on a perceived range of plausible case outcomes and their probabilities. Given their expectations, the parties in a case have incentives either to settle or to move to the next phase of the legal process.

The influence of e-discovery on outcomes depends on whether the e-discovery process adds information that changes perceptions about either case value or costs. For example, e-discovery can provide information that changes perceptions of expected case values. Before discovery, an assessment of case value depends on a range of expected case outcomes based on closely held information. But after e-discovery, these expectations are modified. If the plaintiff discovers information that strengthens his or her case, for example, then settlement demands will increase.

E-discovery could also increase or decrease production costs. Clearly, the higher volume of information requires a higher level of attorney review. E-discovery also increases certain risks, such as the potential for severe sanctions or loss of attorney-client privilege. On the other hand, improved technologies for storage, reproduction, and transmission of data could significantly decrease some costs. It could also make it easier to identify relevant information and thereby reduce the need for “eyes-on” attorney review.

In general, this theoretical model of litigant behavior suggests a number of effects of e-discovery on case outcomes, depending on case characteristics. For example:

An increase in costs for both parties will increase the probability of settlement. A decrease in costs will have the opposite effect.

An increase in defense costs will increase settlement amounts, while an increase in plaintiff costs will have the opposite effect. Again, these effects are reversed if costs decline.

Increased information exchange will tend to diminish the gap in expectations about trial outcomes and increase the number of early settlements.

E-discovery, to the extent that it increases perceived risks for either party early in the process, will encourage early settlement.

This model suggests that e-discovery will have different levels of effects on different types of cases, such as employment cases, business-versus-business cases, regulatory cases, and class-action cases. We offer illustrative examples of these effects in this paper, which we propose to examine more closely through econometric analysis of actual case outcomes obtained from a survey of law firms, as described below.

Proposed Research Agenda

Because e-discovery will affect litigation outcomes within a complex and interactive system that includes technology, business practices, and public policy, the independent effects of one component must be evaluated in terms of the others. Federal and state rules and case law, for example, will be influenced by the evolution of technology and prevailing business practices. Such policies will have a direct effect on legal outcomes as well as business practices. We propose five studies that focus on particular elements of this system, but our ultimate goal is to integrate what we learn so that we can maintain a full system perspective on the issue.

Impact of E-Discovery on Litigation Outcomes

Based on a new model of litigant decisionmaking and econometric analysis of survey data on actual case outcomes, this project will evaluate the impact of new technology and e-discovery rulemaking and judicial decisions on litigation patterns such as propensities to file cases, litigation costs, propensity to settle, settlement amounts, and probability of going to trial. In conducting this research, we will consider impacts on both plaintiffs and defendants.

The Costs of E-Discovery

This research will develop a cost model, based on technical information and analysis of survey data, that links discovery costs with several observable characteristics, including company size, industry, IT structure, data location, case type, and regulatory retention requirements. One product from this task will be a cost guidebook that would enable courts to evaluate the likely burden of discovery requests.¹

Forward-Looking Review of Emerging Technologies

With anticipated changes in information technologies, present rules may not be effective or even meaningful in the future. This project will involve a forward-looking review of emerging technologies likely to affect the e-discovery cost-benefit calculus, and it will evaluate the implications for the relative efficacy of alternative legal requirements.

Evaluation of Federal Rules

Although evaluating the impact of the federal rules will be difficult until well after their implementation (December 2006), the project will conduct an initial evaluation based on theory, available cost data, and an evaluation of early indicators such as numbers of sanctions and the form of e-discovery requests and required productions.

Assessment of Effects of E-Discovery on Business Practices

In assessing the potential burdens of e-discovery, one has to consider the effects on business operations. To quantify these potential impacts, we intend to gather and analyze information on prevailing IT practices and technologies as well as the extent to which they may have been altered in response to e-discovery concerns.

¹ Of course, it may be that costs vary significantly on the basis of factors that cannot easily be identified and accounted for *ex ante*. In such a case, the guidebook's value will be based on establishing a feasible range of estimates that will require additional analysis on a case-by-case basis.

Acknowledgments

We would like to thank our formal reviewers, Jeff Dominitz and Bruce Margolin, for extremely thoughtful reviews. In addition, several other individuals provided constructive comments, including Charles Beach, Sheila Birnbaum, Jay Greer, Rick Hauser, William Lynch, Robert Peck, Kathleen Peterson, Paul Rheingold, Tom Rowe, Larry Stewart, Lynne Yowell, Craig Zahnd, and Christian Zeunert. It goes without saying that the authors retain full responsibility for any remaining errors.

Abbreviations

ABA	American Bar Association
e-discovery	electronic discovery
ESI	electronically stored information
FRCP	Federal Rules of Civil Procedure
IT	information technology
PDA	personal digital assistant
VoIP	voice over Internet Protocol

Introduction

Discovery is at the very heart of the civil process in America. Access to relevant evidence is central to the “search for truth.” The discovery process is performed ostensibly in preparation for trial, but in fact the information obtained is a key factor in driving negotiated resolutions of disputes. In addition, discovery can be a major cost driver.¹ Given the importance of discovery, it is not surprising that litigants and the lawyers who represent them are struggling in their efforts to cope with the changes in the legal landscape due to the evolution of information technologies.²

Today, virtually all information is in electronic form. Electronically stored information grew at the rate of 30 percent annually from 1999 through 2002. By 2002, less than one-tenth of 1 percent of information was on paper copies.³ The sheer volume is astounding. A data processing center for a major corporation can contain 10,000 tapes or more. One tape can store as much as a 1 trillion bytes (1 terabyte) of information or even more. If converted to hard copies, information contained on a single tape would be the equivalent of a 200-mile-high stack of paper.

The types of “discoverable” data in electronic form are also proliferating. Many are similar to previous hard-copy documents such as might be found in the printed output of Microsoft Word files and Excel spreadsheets. But discovery also includes more transitory forms that were never found in the pre-electronic world, with the primary example being email messages. A 2002 estimate put the number of emails sent worldwide at over 30 billion and predicted that that number would double by 2006.⁴ In addition, companies retain vast relational databases that are continuously updated. These systems contain payroll, sales, manufacturing, and supplier transactions and provide a snapshot of an entire enterprise, something not possible with hard-copy ledgers. A vast amount of information is stored on data recovery systems or “backup” tapes. Historical information is retained on decades-old legacy systems that are now difficult to access and read. Data that have supposedly been deleted from computers may still in fact exist in “slack memory” and the various nooks and crannies of hard drives. Most appli-

¹ In a study of federal cases from the 1992–1993 period, discovery-related activities represented an average of 36 percent of all attorney time expenditures. See James S. Kakalik et al., *Discovery Management: Further Analysis of the Civil Justice Reform Act*, RAND Institute for Civil Justice, MR-941-ICJ, 1998.

² Fulbright and Jaworski, *Third Annual Litigation Trends Survey*, 2006. Only 20 percent of the survey’s 300 corporate respondents indicated that they were “well-prepared” for the new requirements of e-discovery.

³ School of Information, University of California at Berkeley, *How Much Information?* 2003.

⁴ M. Levitt and R. P. Mahowald, *Worldwide Email Usage Forecast, 2002–2006: Know What’s Coming Your Way*, International Data Corporation, September 2002.

cation and system files maintain a myriad of bookmark files, activity logs, and temporary files, potentially leaving a detailed audit trail of internal corporate processes that was never imaginable before. Additionally, many application files (such as a Microsoft Word document) also have embedded “metadata” that provide details about the author or the history of edits or other activities. And to complicate matters even more, the stand-alone desktop computer is now only one source of data, given the explosion of various platforms capable of holding electronically stored information. These include personal digital assistants (PDAs), laptops, thumb drives, telephone calls that are placed through the internet (via voice over Internet Protocol, [VoIP]), smart cards, and cell phones.

What are the implications of this proliferation of electronic data on the legal discovery process? What are the costs and benefits of these trends? What are their likely impacts on litigation outcomes? How are business practices changing in response to these developments? Do the Federal Rules of Civil Procedure (FRCP) that were enacted in December 2006 help litigants address the issues raised by e-discovery? How can policies be improved regarding e-discovery? These are some of the questions yet to be addressed by the research community.

Study Purpose and Approach

This paper presents the results of an exploratory effort to identify the most salient legal and economic implications raised by e-discovery and to propose a research agenda for the RAND Institute for Civil Justice (ICJ) to help inform policy in this area. The study included several tasks. First, we conducted interviews with informed parties to learn their perceptions of the effects of e-discovery on the legal system. Second, we reviewed the current state of e-discovery law and practices, including the main features of the new Federal Rules of Civil Procedure. Third, we conducted a preliminary modeling effort to simulate the range of plausible effects of e-discovery on case outcomes. Finally, based on the results of these tasks, we proposed several inter-related research projects to be conducted by the ICJ over the next several years.

In this chapter, we describe what we learned from our interviews and then set out the organization of this paper.

Key Concerns

We interviewed officials from the information technology (IT) and litigation departments of eight corporations, including representatives of the energy, insurance, pharmaceutical, and telecommunications sectors. In addition, we had discussions with several defense and plaintiffs’ attorneys who have recently represented clients in a wide range of litigation, including anti-trust, contract, employment, and product liability cases. Of course, this is not a representative sample of all litigation or all litigants and, although many interviewees identified e-discovery as an important issue, it was clear from our discussions that there may be a large subset of cases mostly unaffected by the shift from paper to electronic data.

Despite the potential of computer technology to make storage, search, and exchange of information less expensive and less time-consuming, the most frequent issue raised by those we interviewed was the enormous costs—in time and money—to review information that is produced. This is because the sheer volume of records that are identifiable and producible is

greater with electronic processes, potentially relevant information that might never have been recorded previously is now being routinely retained, and because the requesting attorneys are aggressive in seeking out such information. Despite the technical advantages of modern IT systems, electronic documents still have to be individually examined by producing attorneys for relevance and privilege concerns before they are delivered to the requesting side. Interviewees indicated that as much as 75 to 90 percent of additional costs attributable to e-discovery are due to increases in attorney billings for this “eyes-on” review of electronic documents.

Many of these concerns focused on email, although it is our perception that issues related to transactional databases (orders, production, sales, pricing) are also potentially significant because these files are complex, idiosyncratic, and designed primarily to specific business, as opposed to legal, purposes. In addition, these files are not always in a form that is easy to interpret. In such cases, the burden of transforming the format of information can be significant.

Corporate litigants also voiced concern over their inability to provide convincing documentation about the magnitude of costs associated with broad e-discovery requests. Some of these litigants asserted that many judges do not have an adequate grasp of the technical and cost issues raised by e-discovery and continue to apply paper-based thinking when ruling on discovery disputes. In their view, the potential relevance of requested information was generally outweighed by the imposed burdens. These burdens are likely to increase exponentially with the size, complexity, and scope of the business enterprise. On the other hand, many firms cited a more routinized and efficient e-discovery production process as a competitive advantage in business-versus-business litigation.

As a result of these increased costs of discovery, the legal process may have become more expensive.⁵ In small-value cases, these costs could dominate the underlying stakes in dispute. Depending on the legal and factual questions and the discovery issues at play, plaintiffs may have a higher probability of suing and defendants may be more likely to settle in some types of litigation. In addition, e-discovery also affects the flow of information and changes expectations about likely case outcomes. In all kinds of cases, changes in the magnitude and structure of litigation costs, as well as changed perceptions about case value, will alter litigant incentives to file suits, settle cases, and go to trial.

Interviewees suggested that the relevance of these issues could vary by case type. For example, e-discovery could have quite different but predictable impacts on employment, product liability, regulatory, and class-action litigation. It is also worth noting that, although our focus has been on civil litigation, the duty to preserve relevant data is even greater in criminal cases.

It is also the case that corporations are changing standard business practices because they are required to comply with e-discovery requests as well as other regulatory obligations. For example, new corporate oversight regulations (e.g., the Sarbanes-Oxley Act of 2002⁶) in effect require retention of large data sets for multiple years. Such data are also discoverable in litigation, thereby increasing potential e-discovery burdens. In addition, companies may be reluctant to adopt new technology or software that increases e-discovery risks. For example, some companies have banned instant messaging or the installation of edit-tracking applications for Microsoft Word documents because of the potential litigation impacts. Record-retention rules

⁵ The extent to which costs have increased remains an empirical question that requires additional research. In the absence of reliable cost data, such burdens cannot be weighed against the potential benefits of improved information.

⁶ Public Law No. 107-204, The Sarbanes-Oxley Act of 2002, July 30, 2002.

and data-backup policies have been modified at some companies as a result of similar concerns. Those who regularly make e-discovery demands on businesses asserted that some of these changes in technology and records management practices were instituted primarily to prevent the release of relevant information rather than to control costs.

Interviewees also noted that, although more information can be produced, relevant evidence is quite vulnerable. Files can be tampered with, overwritten, destroyed, or hidden with the stroke of a key. Of course, new technologies make it virtually impossible to truly eliminate all aspects of computerized records. Attempts to remove data are often not successful despite apparent confirmation that files were successfully deleted. It is interesting that, whereas requesting parties worried about the potential for willful destruction, those responding to discovery requests were concerned about the potential for significant sanctions for inadvertent failure to preserve information.

Business litigants display a mix of optimism and concern about the impact of the new federal rules on e-discovery that went into effect in December 2006. To some extent, the balkanization that marked federal decisions in this area is likely to be reduced, but the core concerns over uncertainty about what are reasonable steps to take in advance of and during litigation remain. Thus, it is apparent that further clarification and development of e-discovery rules that promote efficiency and equity for both defendants and plaintiffs are required.

For example, the new federal rules require early and full disclosure of IT systems, but interviewees noted that many lawyers are unfamiliar with the modern and continuously evolving hardware, applications, and internal record-keeping practices of their clients. Lawyers risk significant sanctions for failing to properly carry out e-discovery duties that they may not be equipped to handle. Even technologically savvy attorneys voiced concerns that providing opposing parties with detailed IT “roadmaps” as envisioned under the new rules would lead to discovery demands designed solely to drive up costs. And as corporate clients increasingly move toward internalizing collection, review, and production tasks in order to limit litigation costs, their outside counsel may find themselves with reduced control over the process but nevertheless still vulnerable to sanctions.

In discussing the future legal landscape, interviewees raised several potential uncertainties. For example, with the proliferation of new IT-generated information, does the definition of “relevancy” expand? What is discoverable and when? What are the best practices for preservation of relevant data? Should standard business IT and record-management practices be altered? Under what circumstances does the burden of production outweigh the benefits? In such cases, should cost shifting be required (in most discovery practice, the costs of production fall on the producing party)? And what happens when privileged information is inadvertently disclosed because of the vast volume of information being provided? Is attorney-client privilege automatically waived? Are current standards for sanctions appropriate for the highly complex nature of electronic data?

Organization of This Paper

In the next section, we provide a brief overview of the current state of e-discovery law and practices. We describe the most important features of the recently adopted federal rules and assess their likely impact. Next, we present the results of an initial modeling effort to simulate the range of plausible effects on case outcomes. We demonstrate that case patterns, such as filing

rates, settlement incentives, payments, and jury awards, can depend on variables likely to be affected by e-discovery. Preliminary results also suggest that the impact on such outcomes is likely to vary significantly by case type. The concluding section ends with an agenda for future research. We describe five potential projects on e-discovery.

The Current State of E-Discovery Law

Scarce Legal Guidance

Despite all the concern expressed over e-discovery, there currently exist few legal standards to help provide benchmarks for litigants. In most other areas of the civil law, there is an extensive body of authority on which trial court judges and practitioners can draw for guidance. However, some observers claim that, in the case of e-discovery, technology is evolving faster than the law.

To give a sense of the dearth of appellate cases considering e-discovery issues, in December 2006 we conducted a search of the reported state and federal judicial opinions in Westlaw for the phrase *electronic discovery* or the phrases *electronically stored information*, *electronic document*, *computer data*, *electronic data*, *electronic record*, *electronic production*, or *electronic format* within 100 words of *discover*. Out of the tens of thousands of appellate decisions as well as some trial court rulings, there were only 29 instances in the state-court database and 92 in the federal-court database. Part of the reason for this is the slowness of the appellate process, which often takes many years to deliver an authoritative rulemaking. Probably more important is that e-discovery, and discovery in general, involves pretrial activity and decisionmaking. Most cases settle or are disposed of for other reasons. Thus, the number of instances where (1) an e-discovery dispute resulted in an unsatisfactory outcome, (2) a judge actually ruled on the discovery issue, and (3) there was a final judgment in the case providing the necessary conditions for appellate review would be extremely few in number (in most forums, interlocutory appeals allowing review of a discovery order before the final judgment would be extremely rare). The absence of appellate cases creates a real risk that outmoded and ineffective discovery paradigms could be inappropriately applied by sitting judges, thereby leading to inefficiencies and potential inequities.

State court rules have not been helpful either. Though in every state e-discovery is clearly allowed (typically as a result of a rule that defines electronically stored data as a discoverable “document”), procedural rules and appellate authority are usually silent about how e-discovery is to be conducted and managed. As a result, existing laws that govern paper-based discovery have been applied, with varying degrees of success, to electronic data. The two states that had gone furthest to address the distinctions that arise with electronically stored information prior to the December 2006 changes to the federal rules were Texas and Mississippi, with rules that defined the default form in which e-discovery data should be produced, defined what accessible data are, and provided for cost shifting under specific circumstances.¹ California had an

¹ Texas Rules of Civil Procedure Rule 196.4, Mississippi Rules of Civil Procedure Rule 26.

existing statute that allowed the shifting of costs when data had to be translated, a provision that was interpreted by a California appellate court to cover instances in which backup tapes had to be restored.² Curiously, Illinois still requires that electronic data be produced only in the form of paper printouts,³ though one suspects that attorneys on both the receiving and requesting ends routinely waive that provision and go digital. New York is sometimes cited as a jurisdiction with cost shifting procedures already available for all types of discovery, and now, presumably, for e-discovery as well.⁴ Other than these jurisdictions, states did not have formal rules of discovery practice and procedure that were tailored to the specific needs of electronic data.⁵

In 2007 the situation, as a whole, is not markedly different. The new federal rules do not directly apply to any state case, and it is the system of state courts that handles the overwhelming bulk of litigation in the United States. The impacts of the revisions are still being evaluated, and it is not clear that a majority of states will follow the federal lead. By summer 2007, less than a quarter of the states had adopted or were even considering the amendments, even in modified form.⁶

Prior to the system-wide changes effective December 2006, a few federal district courts had made substantial progress in crafting rules tailored to e-discovery's special needs on an ad hoc basis, and local rules were adopted over the past few years in certain jurisdictions to address some of the obvious gaps in the law. This increasing potential for balkanization of authority was one of the driving forces behind the revisions to the Federal Rules of Civil Procedure (while these local rules were not deleted when the FRCP were revised, the national rules would control in the event of a conflict).

So what clear signals are out there? A few reported trial court decisions have fully explored the key areas related to e-discovery. The most famous, and certainly the most influential, have been the seven rulings rendered by the trial judge in *Zubulake v. UBS Warburg*,⁷ a federal

² California Code of Civil Procedure §2031.280(b) (former §2031(g)(1)); *Toshiba America Electronic Components, Inc. v. Superior Court*, 124 Cal.App.4th 762 (Cal.App. 6 Dist., 2004).

³ Illinois Supreme Court Rule 214 requires that "all retrievable information in computer storage" shall be produced "in printed form."

⁴ While cost shifting is not mandatory, those responding to discovery requests in New York can seek orders that would obligate the requesting party to absorb all or a part of the costs to produce. Under New York Civil Practice Law and Rules 3103[a], "The court may . . . make a protective order . . . regulating the use of any discovery device. Such order shall be designed to prevent unreasonable annoyance, expense, or other prejudice to any person. . . ." In addition, New York appellate cases have held that the party seeking discovery of documents should pay the cost of their reproduction or translation. *Rubin v. Alamo Rent-A-Car*, 593 N.Y.S.2d 284 (N.Y.A.D. 2 Dept., 1993) *Schroeder v. Centro Pariso Tropical*, 649 N.Y.S.2d 820 (N.Y.A.D. 2 Dept., 1996.). See also *Lipco Electrical Corp. v. ASG Consulting Corp.*, 798 N.Y.S.2d 345 (N.Y. Sup., 2004) and *Weiller v. New York Life Ins. Co.*, 800 N.Y.S.2d 359 (N.Y. Sup., 2005).

⁵ It should be noted that there was some activity in regards to addressing e-discovery issues at the state level prior to the effective date of the federal rule changes, though after the point at which the proposed amendments were widely circulated. For example, new procedural rules in Idaho effective July 2006 combined elements of the federal amendments as well as Texas Rules of Civil Procedure Rule 196.4 (I.R.C.P. 33(c), 34(a), 34(b), 45(a), and 45(b)), and in New Jersey, a state version of the federal amendments, with some modifications, became effective September 2006 (N.J.R. 4:10-2, 4:17-4, 4:18-1, and 4:23-6).

⁶ Allman, Thomas Y., "Addressing State E-Discovery Issues Through Rulemaking: The Case for Adopting the 2006 Federal Amendments," *Defense Counsel Journal*, Vol. 74, July 2007, pp. 233–241.

⁷ *Zubulake v. UBS Warburg LLC*, 217 F.R.D. 309 (S.D.N.Y. May 13, 2003), 230 F.R.D. 290 (S.D.N.Y. May 13, 2003), 216 F.R.D. 280 (S.D.N.Y. July 24, 2003), 220 F.R.D. 212 (S.D.N.Y. October 22, 2003), 229 F.R.D. 422 (S.D.N.Y. July 20,

case conducted in the Southern District of New York. The judge in *Zubulake* took great pains to map out a set of standards to apply to requests for cost shifting and for the imposition of sanctions when data were lost during the normal course of business. *Zubulake* was discussed at length in hundreds of law review articles and practice journals, but as actual precedent, it wouldn't have had much *direct* sway outside the federal courthouse in Manhattan.

No matter how reasoned the opinions were in *Zubulake* and other decisions that thoughtfully attempted to provide some guidance to the legal community, nothing gets the attention of attorneys as much as the potential for throwing the case to an opponent. Cases in which stiff sanctions were handed out, including *Zubulake*,⁸ were much more persuasive. The most prominent example of these was *Morgan Stanley*,⁹ in which the sanctions for e-discovery errors and omissions were adverse evidence instructions to the jury. After allowing emails to be overwritten in violation of preservation requests in a fraud case, the company subsequently failed to search hundreds of backup tapes for copies of the missing emails despite having certified that it was in full compliance with the judge's discovery orders. In response, the judge shifted the burden of proof by ruling that Morgan Stanley "shall bear the burden of proving to the jury, by the greater weight of the evidence, that it lacked knowledge of the . . . fraud" and allowed the plaintiff to argue to the jury that the defendant's "concealment of its role in the . . . transaction is evidence of its malice or evil intent, going to the issue of punitive damages." The result of these instructions was a jury verdict requiring Morgan Stanley to pay \$1.45 billion, including \$850 million in punitive damages.

Last but not least are recommendations developed by two sources: The first is the Sedona Conference,¹⁰ a legal think tank made up of litigators as well as judges, academics, and vendors. The Sedona guidelines and principles have helped define the debate in some quarters, and trial judges, in the absence of appellate authority, have used them on occasion to decide the controversies before them. The second is the American Bar Association's *Civil Discovery Standards*, which incorporates the recommendations of the Electronic Discovery Task Force of the ABA's Section of Litigation.¹¹ Still, these are merely recommendations, not the sorts of authority that a lawyer would stake his or her case on.

Federal Rules of Civil Procedure Revisions

Given the absence of local precedent, it is not surprising then that the federal rulemaking process has stepped in to fill the void. On December 1, 2006, the Federal Rules of Civil Procedure were revised to deal specifically with a number of the repeatedly raised issues in e-discovery.

2004), 231 F.R.D. 159 (S.D.N.Y. February 2, 2005), 82 F.Supp.2d 536 (S.D.N.Y. March 16, 2005).

⁸ The court ultimately gave a negative inference instruction for deletion of email. *Zubulake v. UBS Warburg LLC.*, 229 F.R.D. 422 (S.D.N.Y. July 20, 2004).

⁹ *Coleman (Parent) Holdings, Inc. v. Morgan Stanley & Co., Inc.*, 2005 WL 679071 (Fla. Cir. Ct., Mar. 1, 2005), reversed on other grounds, 955 So.2d 1124 (Fla. App. 4 Dist., 2007).

¹⁰ The Sedona Conference, *The Sedona Principles Addressing Electronic Document Production, Second Edition*, Sedona, AZ, June, 2007. As of September 19, 2007: http://www.thosedonaconference.org/content/miscFiles/TSC_PRINCP_2nd_ed_607.pdf

¹¹ American Bar Association's *Civil Discovery Standards*, Chicago, IL, August 2004. As of September 19, 2007: <http://www.abanet.org/litigation/discoverystandards/2004civildiscoverystandards.pdf>

Perhaps most basic of these changes is a definition that the subject of e-discovery is simply information that is stored in an electronic manner (referred to as “electronically stored information,” or ESI), but as Table 2.1 suggests, other important aspects are included as well.

Attorneys are going to have to be ready to deal with e-discovery issues right from the start. They will have to meet with clients to discuss where relevant data might be stored far in advance of the initial scheduling conference that is already one of the hallmarks of federal practice. This meeting is not an optional one or something that can be deferred until a point at which the case gets “serious” enough to warrant the attorney to spend valuable time looking at IT flow charts and document-retention policies.

The most striking change is the establishment of a “two-tiered” approach. Relevant data that the producing party considers to be “reasonably accessible” and not otherwise protected have to be produced without complaint. Data felt to be “not reasonably accessible” because of undue burden or expense do not have to be produced, but their source does have to be identified to the other side and preserved until it is no longer at issue. If either party so chooses, a judge can rule as to the propriety for compelling production. The producing party must first establish that the data are not reasonably accessible, and the requesting party can still show good cause for the discovery.

The two-tier test does contemplate cost shifting or sharing but does not require it. Thus, a party might be required to produce data that are “not reasonably accessible” and still be required to pay for the costs of production. Such costs can depend on the format requested, and the judge does have discretion to shift costs in such cases.

The new rules also provide guidance about the format for the production. The requestor can specify the desired format (and if the producer objects, the judge can decide), or the parties can agree on a form. But absent agreement or demand, the default might be production in the form that the data are “ordinarily maintained” or are “reasonably usable.” Stripping out

Table 2.1
Electronic Discovery Amendments to FRCP, December 2006

FRCP Rule Amended	Effect of Amendment
Rule 16(b): Pretrial Scheduling Orders	May include provisions for disclosure or discovery of ESI and for agreements between parties for post-production claims of privilege
Rule 26(a): Duty of Early Disclosure	Must provide description of all ESI in possession or control relevant to claims and defense
Rule 26(f): Meet and Confer	Early meeting required to discuss issues related to preserving ESI
Rule 26(f): Discovery Plans	Must address E-discovery issues such as form for production of ESI and procedures for asserting privilege post-production
Rule 26(b)(2): Limitations on Discovery	No need to produce data that is not reasonably accessible because of undue burden or cost without motion to compel or protective order
Rule 26(b)(5)(B): Privilege Issues	Requesting party learning of post-production claim of privilege must return, sequester, or destroy the ESI and cannot disclose until claim is resolved
Rule 33(d): Interrogatories	Can provide ESI as a response
Rule 34(a): Production of Documents, Defined	ESI is a “document” and may have to be translated into reasonably usable form
Rule 34(a): Production of Documents, Procedure	Requesting party can state desired form of production, default form is that which is ordinarily maintained or reasonably usable
Rule 37(f): Sanctions	No sanctions for losing ESI as the result of routine, good-faith operation of IT system

text-search capabilities in electronic files before delivery (e.g., by turning documents into image formats such as JPG or TIFF) may not meet this test.

Some provisions address the privilege issues. The rules encourage the use of agreements between the parties to handle situations in which privileged data slips past the review process. “Claw-back” agreements set forth the rules for trying to get the data back if a leak is subsequently discovered. “Quick-peek” agreements allow requestors to review briefly a large body of data for relevance and then, if some portion of it is determined to be of the type that they seek, the producer will subject the identified information to the usual tests for privilege before a more permanent release.

Finally, there is a “safe harbor” provision that may restrict sanctions in situations in which data are lost through an automatic computer process that was routine and in good faith. However, the conditions under which such restrictions are applicable remain vague and discretionary.

Despite the sweeping nature of these changes, even some of the most ardent proponents of the new rules (typically from the corporate community) argue that they do not go far enough. For example, the specific duties as to what and how data should be preserved in anticipation of litigation are not addressed, primarily because preservation appears to be a “substantive law” rather than a “procedural law” issue (the court’s rulemaking authority speaks only to the latter). In contrast, some stakeholders have expressed concerns that the new rules, as well as other efforts to address e-discovery management, may result in a chilling effect on the necessary process whereby evidence relevant to the dispute is identified and exchanged. Provisions for cost shifting, for example, are asserted to be a potential tool for insulating corporate litigants from otherwise reasonable discovery demands when the requesting party is of limited means.

Other areas are still evolving, and it will take time to see how courts apply the new rules. Even the core concept of “electronically stored information” may be in flux, as exemplified by the debate over a recent federal district judge’s decision to require the preservation of a computer’s random access memory (RAM) data.¹² The only definition of “not reasonably accessible” contained in the new rules is something requiring “undue burden or cost” to obtain, but what specific types of burdens and costs should be taken into account are not spelled out. Application of these principles is quite subjective and, unfortunately, there are no hard and fast examples to rely on.

The distinction between substantive and procedural law is responsible for the lack of specificity about the reach of claw-back or quick-peek agreements. It’s possible that while the attorneys in the case would be prohibited from using inadvertently disclosed attorney-client communications under such agreements, others (either involved in the same case or in future litigation) would not. This is an area very much up in the air.

And some observers have suggested that, far from being a “safe harbor,” the new rule on the appropriateness of sanctions operates more in the vein of a “lighthouse.” There is authority to suggest that this harbor, however safe, would apply only when the judge has made a specific order defining the discovery obligations. On the other hand, there is also speculation that the restriction would not apply when judges are exercising their inherent power to manage the cases before them and not using the punitive aspects of sanctions authorized under FRCP 11. Finally, it is possible, though this is pure speculation, that all the additional responsibilities placed on

¹² *Columbia Pictures, Inc. v. Bunnell*, 245 F.R.D. 443 (C.D.Cal., Aug. 24, 2007).

counsel may well result in more motions for sanctions and more instances in which sanctions are imposed, despite any protections offered for data destruction that was not in bad faith.

The Future of E-Discovery

The federal rules have always been influential in shaping the procedural process in other jurisdictions, and, in many states, the local set of rules is a virtual twin of the FRCP. But there is no absolute requirement that even in such jurisdictions the new amendments will be adopted verbatim. Some states declined to follow some other amendments to FRCP in recent years, and it is possible, given the volume of the debate over what the best practices are for judges overseeing e-discovery, that courts will wait to see how things work out and watch to see whether unanticipated problems develop in the federal system. Nevertheless, it's hard to imagine that the new rules will not have great influence at the state level, and, as of early 2008, the initial steps for incorporation into local rules in a few states have already been taken.

Two other sources for guiding state rulemakers and judges were released in 2006–2007. The Conference of Chief Judges, the organization that represents the leaders of the highest court in each state, has developed a set of guidelines to be distributed to courts across the country.¹³ These are not rules *per se*, but it's likely that some trial courts will use them to fill in the substantial gaps in existing authority. The other source may come from a set of uniform rules recently adopted by the National Conference of Commissioners on Uniform State Laws, intended to standardize how e-discovery is addressed in the individual states.¹⁴

Providing some level of certainty both for parties engaged in e-discovery in active litigation and for those who may become the targets of discovery requests in the future has become a front burner issue for judges, court administrators, legislators, and academics. The multiyear process to amend the federal rules, the ongoing activities of the Sedona Conference, the ABA, the Conference of Chief Judges, and other organizations, and the high profile the topic has in legal publications, law reviews, and even the general media all attest to genuine concerns over the way the process works. But at this moment, the legal and business environment is marked by serious uncertainty when it comes to e-discovery matters. Questions such as what constitutes “reasonably accessible” data, what steps should be taken to preserve electronic information that might be sought as evidence, and what the potential legal ramifications might be as a result of adopting different business practices will continue to be raised for some time to come.

¹³ Conference of Chief Justices, *Guidelines for State Trial Courts Regarding Discovery of Electronically-Stored Information*, 2006. As of September 20, 2007: <http://www.ncsconline.org/images/EDiscCCJGuidelinesFinal.pdf>

¹⁴ National Conference of Commissioners on Uniform State Laws, *Uniform Rules Relating to Discovery of Electronically Stored Information*, July 2007. As of September 20, 2007: http://www.law.upenn.edu/bll/archives/ulc/udoera/2007am_final.pdf

Exploratory Model of Case Outcomes

The previous discussion makes it clear that e-discovery, by changing costs, creating new risks, and altering the flow of information, could alter litigant incentives to file suit, settle cases, and go to trial. For example, several interviewees claimed that the significant burdens of e-discovery outweighed the benefits of going to trial, especially in low-stakes cases. Thus, they were fearful of an increase in lawsuits of questionable merit in which defendants would settle rather than incur the costs of discovery. Viewed from another perspective, plaintiffs may choose to settle cheaply, dismiss their own cases, request less, or refrain from filing in the first place if their own costs of discovery (whether as producer or requestor) overwhelm the value of their claims.

These scenarios are plausible, but only a sample of a broad set of possibilities that depend on a range of circumstances. To illustrate the potential impacts of e-discovery on litigation outcomes, we developed a simple but illustrative model of legal decisionmaking. This initial model abstracts from many of the complexities of litigation, including the multiple stages of the process and possible divergence in the incentives that clients and the lawyers who represent them face.¹ However, this preliminary work indicates that a theoretical model can lead to testable empirical implications and provide a useful framework for evaluating the broader consequences of evolving technologies and rules of discovery. The outcomes from these simulations should not be viewed as predictions, but rather an example of the wide range of plausible outcomes that could be linked to identifiable case characteristics.

Litigation Costs and Benefits

At any particular point, plaintiffs and defendants have expectations based on available information about likely legal outcomes. For example, V_p represents a plaintiff's expectation about the "value" of the case if it goes to a jury. V_p is a function of the expected jury award. The expected outcome is an average award computed over a wide range of plausible awards weighted by their respective probabilities, including the chance that the judgment will be favorable to the defendant, i.e., no liability. If plaintiffs have low tolerance for risk, the value of the case will be lower than the expected award. In other words, plaintiffs will accept a lower guaranteed settlement in place of a potentially higher but uncertain prospective jury award. From the perspective of the defendant, case value, or V_d , represents a risk-adjusted expected liability also based on the

¹ A more complete model would consider incentives to file a complaint, seek alternative forms of dispute resolution (such as arbitration), drop a case, pursue comprehensive discovery, go to trial, and file an appeal.

perceived range of plausible case outcomes and their respective probabilities. In contrast, note that risk-aversion serves to increase the value (expected liability) of the case to the defendant.

Expected case value would also be affected by possible reputational effects or by the influence that a public trial could have on the future behavior of potential litigants (such as the propensity to sue or to encourage future activities that are currently being challenged in court). Thus, V_p can be viewed as the monetary equivalent of the plaintiff's full benefit of going to trial, while V_D is the monetary equivalent of the defendant's full liability or harm, not including the costs of going to trial.

V_p and V_D can diverge depending on the relative degree of risk aversion, asymmetries in the importance of indirect costs (such as reputational effects), or contrasting perceptions of reality often based on differential access to relevant information. When divergent expectations lead to a situation in which V_p exceeds V_D , then the likelihood of a settlement is diminished. In other words, when the plaintiff expects an award that is greater than what the defendant believes to be at risk, the common grounds for an early resolution of the dispute are limited.

In addition to case value, participants also consider the prospective costs of litigation. Costs to the plaintiff and defendant are denoted by C_p and C_D , respectively. These costs include lawyer fees, direct costs incurred by litigants (such as the burden of searching for relevant documents), and the opportunity costs of lawyers, witnesses, defendants, and plaintiffs and their associates. The magnitude of costs should also be affected by risk-aversion if such costs are unpredictable. Opportunity costs also include the value of time spent at trial or depositions on the part of corporate executives. For plaintiffs' attorneys who are paid on contingency, these costs would include the value of time actually spent litigating the case.

Incentives to Settle

At any stage of the process, litigants have incentives to settle based on perceived case value and the expected costs of moving to the next phase of the legal process. Although this discussion and the subsequent simulation will focus on the settlement-versus-trial dichotomy, the reality is that the same type of calculus occurs at multiple, almost continuous phases of legal activity. Actual and potential plaintiffs often begin by first threatening legal action, then hiring an attorney, making a specific demand, filing a formal complaint, submitting legal briefs, designating experts, conducting discovery, filing motions for summary judgment and other pretrial orders, preparing evidence, conducting pretrial conferences, selecting a jury, and beginning the trial. Along the way, information is gathered, costs are incurred, and perceptions about future outcomes change. Thus, incentives to settle evolve as well.

At any point, the defense should be willing to settle for an amount equal to the perceived case value plus the anticipated costs of continuing the litigation. In other words, the offer will be equal to $V_D + C_D$. For example, if the case goes to trial, the total loss will include the expected jury award (including reputational effects, impacts on future behavior, and a risk premium) plus all legal fees and indirect costs. From the plaintiff's perspective, the demand will be based on the perceived case value minus litigation costs ($V_p - C_p$).

Cases should settle rather than moving on to the next stage if the offer exceeds the demand or if $V_D + C_D > V_p - C_p$. Thus, cases are more likely to move to the next stage, such as a jury trial, when plaintiffs believe that the case is worth more than do the defendants. For example, a risk-averse defendant would be willing to offer more, and the case would be more likely to

settle. Also, a defendant worried about negative reputational effects might be induced to settle under a confidentiality agreement. Prospective costs to be incurred by either a defendant or a plaintiff will increase incentives to settle. Defense costs will increase the offer, while plaintiffs' costs diminish the overall benefits of going to trial.

Whether case outcomes are affected by e-discovery will depend on whether the process adds information that changes perceptions about case value or alters the costs of the litigation process.

E-Discovery and the Costs and Benefits of Litigation

Our earlier discussion suggests that the structure of costs could change because of e-discovery. However, production costs could either increase or decrease, and it is possible that electronic information can be turned over to the other side in a manner that is less expensive than paper production, which may require searches through archived file boxes in scattered warehouses, photocopying, and physical transportation. But given the loudly voiced concerns of data producers, it is hard to dismiss the notion that discovery costs have increased overall. To be sure, the higher volume of information requires an equally higher level of attorney review. As we have seen, this is a major cost driver that could, in many cases, swamp all other effects. Other potential burdens that directly affect the litigants themselves include the costs of a litigation freeze or the purchase of backup tapes to replace those pulled off-line to protect against inadvertent destruction of data. The e-discovery environment is also riskier, with the potential for severe sanctions (either directly against the attorneys, against the litigants, or in a manner that tilts the case to the other side) or loss of attorney-client privilege. On the other hand, improved technologies for storage, reproduction, and electronic transmission could decrease some costs significantly. Finally, some observers speculated that new search technologies could eventually facilitate the identification of relevant and privileged information, ultimately obviating or greatly reducing the need for "eyes-on" attorney review. Of course, there is some dispute concerning whether automated review would ever be accepted in a corporate setting or satisfy attorneys' ethical and professional obligations to their clients. Thus, the direction, magnitude, and structure of cost changes due to e-discovery are unknown, must be determined empirically, and are likely to vary by case and litigant characteristics.

E-discovery also provides information that changes perceptions about likely outcomes and, as a result, alters expected case values. However, the character of these initial perceptions and the likely changes in those perceptions due to e-discovery are impossible to determine *ex ante*. Instead, the impact depends on a variety of factors, including whether the new information obtained is positive or negative. Positive information makes the recipient more optimistic about case values. Negative information has the opposite impact. For the defendant, negative information increases potential liability. For the plaintiff, negative information reduces potential payoffs.

It is likely that litigants already have incentives to reveal "positive" information that could influence opponent perceptions about the value of a case. Plaintiffs would reveal information that increases the settlement offer made by the defendant in order to avoid trial. Defendants would provide information that strengthens their case, namely, information that lowers plaintiff expectations and results in a lower settlement demand. Of course, it may be the case that litigants are unaware of all positive information in their possession. Further, it may be the case

that they are aware, but are unable to demonstrate its relevance. In either case, e-discovery may facilitate the identification and communication of positive information.

The impact of negative information depends on several factors. First, does the discovery process facilitate the early revelation of information that would have been revealed at trial? If this is the case, the provision of unexpected negative information about the defendant would tend to increase the settlement demand of the plaintiff.² If the defendant anticipated that this information would have been revealed at trial, then e-discovery would not affect the settlement offer. Negative information about the plaintiff would diminish case value from the perspective of the defendant. As a result, the settlement offer would decrease.

In most cases, litigants harbor expectations about the probable existence of some negative evidence that will help their case. Before discovery, case values are determined by these expectations, which can be modeled as the average over a distribution of possible evidence. After discovery, the evidence is revealed and case values no longer depend on the distribution of possible outcomes but, rather, are based on the discovered information. Even if all the withheld information is negative and revealed involuntarily, the failure to discover the expected amount of negative information will have an effect similar to uncovering positive evidence.

It is important to recognize that e-discovery can influence more than just the timing of information. Indeed, some discovery may result in the revelation of information that would not have otherwise emerged. If this is the case, then negative information could well have a symmetric increase in both the demand and offers made by plaintiffs and defendants.

Before discovery, a belief about case value depends on a distribution of plausible case outcomes based on closely held information. In one simple formulation, litigants expect an average outcome based on that distribution of feasible case outcomes. After e-discovery, these expectations are modified based on information received. For example, if the plaintiff discovers an unusually high amount of negative information, settlement demands will increase. However, if the amount of negative information falls below average, demands will diminish.

Whether demands typically increase or decrease for the majority of cases will depend on the distributions of case values (based both on actual and presumed information). For example, for a “normal” distribution, expected case values will increase about half the time following discovery. In contrast, if information is distributed in a “convex” manner, so that average expectations are driven by a small number of potentially very high-value cases, then average expected values will be higher than true values (revealed after discovery) for a majority of cases. As a result, settlement demands will decrease for the vast majority of cases. In contrast, if information is distributed in a “concave” manner, that is, most cases have a moderate amount of negative information but a few cases have almost no negative information, then the average amount of negative information is less than actuality for a majority of cases. As a result, settlements demands will tend to increase more often than not. Thus, depending on the distribution, settlement probabilities can either increase or decrease.

In sum, the theory of litigant behavior indicates that the following effects of e-discovery are plausible:

An increase in costs will increase the probability of settlement since both parties will wish to avoid such costs. A decrease in costs will have the opposite effect.

² Litigants will generally expect to discover some amount of information that helps their case, that is, negative information about the opponent. In a sense, the failure to discover such negative information is equivalent to discovering positive information.

An increase in defense costs will increase settlement amounts, while an increase in plaintiff costs will have the opposite effect. Again, these effects are reversed if costs decline.

Information exchanges through e-discovery will tend to diminish the average gap in expectations about trial outcomes as well as the variation in that gap. This effect will tend to increase the number of early settlements and reduce the number of cases going to trial.

If e-discovery provides negative information that would not have been otherwise revealed, impacts will depend on whether the evidence pertains to the defendant or to the plaintiff. If the information concerns the defendant, the perceived case value will increase for both litigants. When perceived case values increase relative to the cost of litigation, going to trial is more likely. If the information concerns the plaintiff, the opposite result holds.

The effect of new information depends partially on how perceptions change for a majority of cases. In cases where liability is potentially very high but unlikely, plaintiff demands will reflect expectations about the average case. These will be reduced for a majority of the lower-value cases. However, plaintiff demands will increase dramatically for the high-value cases. In such cases, simulated outcomes indicate a higher rate of trials.

In general, risk-aversion on the part of either party encourages settlement behavior. E-discovery, to the extent it increases risks early in the process, will encourage early settlement. However, once information is pooled, variance in expected outcomes is likely to diminish. This could reduce the divergence in the average award expected by each party. But, at the same time, shared information will reduce the variance in these expectations. As a result, the risk of going to trial is reduced.

Probable Effects of E-Discovery

The previous discussion suggests that e-discovery will change the structure of litigation costs as well as expectations about case values. As a result, incentives to settle will be different and payment amounts will change. However, the magnitude and direction of changes remain empirical questions and are likely to depend on prevailing circumstances. These circumstances are likely to vary in systematic ways as a function of observable case and litigation characteristics.

For example, Table 3.1 details some plausible relationships for a subset of case types. These characterizations are based on preliminary interviews and should be viewed as illustrative. A richer typology could be created with more comprehensive interviews and data collected via surveys. For the time being, this exercise demonstrates the potential value of such an effort in constructing testable hypotheses and providing key information on the broader legal effects of e-discovery.

For example, a typical employment case, such as wrongful termination, has a relatively low case value. Plaintiffs probably retain little or no electronic information that the defense would wish to discover. On the other hand, defendants store potentially valuable evidence of interest to plaintiffs. Expressed as a percentage of case value, the increase in litigation costs due to e-discovery is likely to be quite low for plaintiffs. In fact, because of improved search technologies, the costs of discovery may even diminish. This increases the settlement demand. On the other hand, the relative cost increase, at least in comparison to perceived case value, is likely to be much higher for the defendant. This increase in discovery costs, primarily due to attorney review of email and personnel records that would undoubtedly be the subject of plaintiffs' discovery requests, would tend to increase the settlement offer. This combination of cost impacts

Table 3.1
Probable Effects of E-Discovery by Case Type

Case Type	Size	Impact on Costs		Value of Information for:	
		Plaintiff % of Value	Defense % of Value	Plaintiff	Defense
Employment liability	Small	Low < 0	High	High	Low
Business versus business	Large	Moderate	Moderate	Moderate	Moderate
Regulatory	Large	Low	High	Moderate	Low
Class action (product liability)	Large	Moderate	Moderate	High	High

would tend to increase the average settlement, though the changed probability of settlement would depend on the relative impact on settlement offers versus demands. E-discovery would also have systematic effects on the perceived case values.

For business-versus-business cases, the impact of e-discovery is more balanced, with plaintiffs and defendants equally affected. Given the symmetry in the discovery requirements, information requests are more likely to be modest. As a result, the impact on respective costs and the value of information obtained are likely to be at most moderate, especially in comparison to the relatively high stakes involved.³ This would tend to limit the impact of e-discovery.

For regulatory actions, such as Justice Department antitrust proceedings or Securities and Exchange Commission (SEC) oversight, the balance of power clearly favors the involved government agencies. In such high-stakes cases, the defense discovery burden can be significant. In addition, the value of information favors the government oversight agency. As a result, defendants would be prone to settle, and settlement amounts and trial awards would tend to increase.

For class actions such as product liability, the discovery costs are likely to be relatively moderate, given the high value of the typical case. However, the value of information is likely to be quite high. For example, evidence that a company knew of potential health risks for a product could be extremely damaging. On the other hand, electronic discovery can cast new doubts on the validity of a class of claims. For example, the discovery that a large percentage of silicosis claimants had also appeared on lists filing for asbestos was significant, especially when it was determined that a small group of lawyers and X-ray screeners were involved in both circumstances.

³ Of course, the relative impact will vary from case to case, depending on the nature of dispute as well as the respective technologies and business practices adopted by the legal adversaries. Indeed, some of the interviewees indicated that investments in hardware and IT policies could provide significant competitive advantages, if done correctly, in the litigation arena.

Proposed Research Agenda

In this section, we describe an integrated research agenda related to electronic discovery. The five separate projects are necessarily interdependent. This is because findings from individual projects represent critical input for the policy analysis proposed in other complementary efforts. In addition, many of the proposed research tasks, such as case studies and data collection efforts, are common to multiple projects. The section begins by providing a conceptual overview that sets the stage for the subsequent discussion. The paper concludes with a description of proposed research projects.

Conceptual Overview

As the previous discussion suggests, a comprehensive assessment of the economic and legal implications of electronic discovery must recognize that technology, business practices, and public policy all influence outcomes of interest. All three elements interact as an integrated system. The independent effects of one component must be evaluated in this broader context.

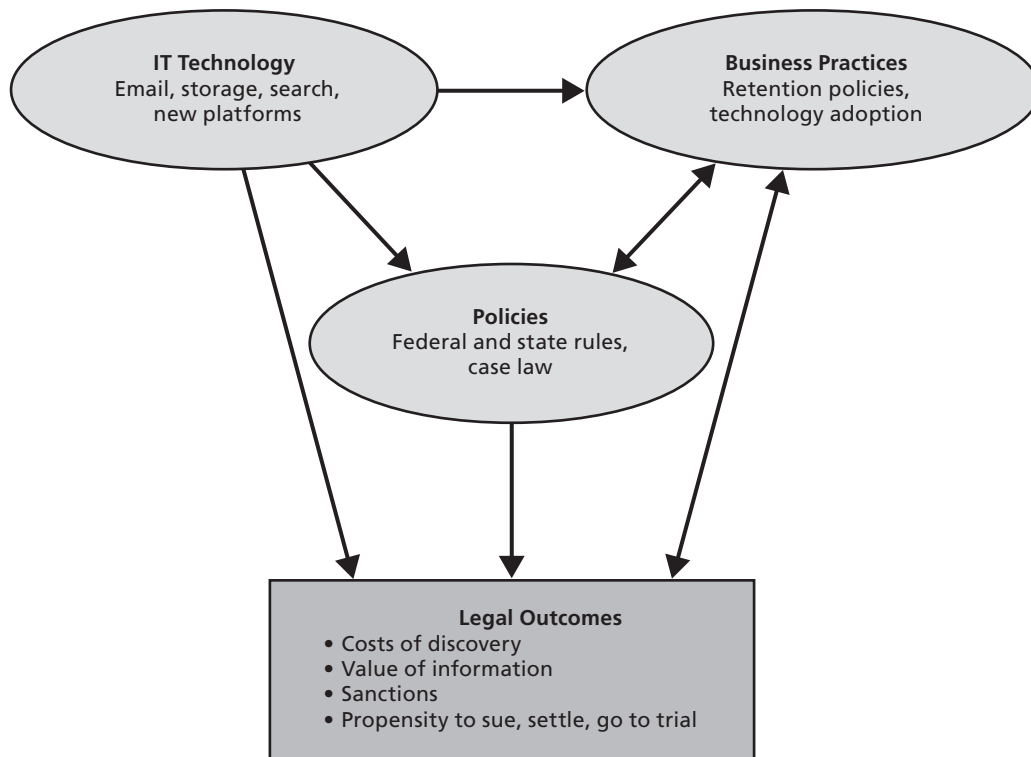
Figure 4.1 provides a simple schematic that illustrates the full system and guides the proposed research agenda. Ultimately, one cares about a variety of both final and intermediate metrics that can be used to judge the performance of the legal system. Some intermediate measures include the costs of discovery and the value of information. Also of interest are the frequency and severity of sanctions for noncompliance. Finally, litigation outcomes are key measures, including the propensity to sue, settle, and go to trial, as well as the resulting flow of payments such as legal fees, settlements, and jury verdicts.

The impact of e-discovery begins with the evolution of new information technologies such as email, storage capacity, search software, and changing platforms. Technological change can directly influence legal outcomes, but these effects depend on prevailing business practices, such as retention policies and the extent to which companies adopt IT equipment and software.

Legal outcomes will also depend on prevailing public policies with respect to e-discovery. Of course, federal and state rules as well as case law will be influenced by the evolution of technology and prevailing business practices. Such policies will have a direct effect on legal outcomes but will also have a feedback effect on business practices.

The upshot of this discussion is that e-discovery will affect outcomes within a complex and interactive system. This suggests that an ideal agenda of research should also be comprehensive and well integrated. Thus, although we propose to undertake several individual proj-

Figure 4.1
Influence of Technology, Business Practices, and Legal Policy on Outcomes



RAND OP183-4.1

ects that focus on particular elements, our ultimate goal will be to connect these efforts so that we can maintain a full system perspective.

Project Descriptions

In this concluding section, brief descriptions of five proposed projects are provided. This agenda is designed to be an ambitious, multiyear effort that provides policy guidance by analyzing e-discovery impacts on case outcomes, litigation costs, implications of future technologies, an evaluation of the federal rules, and consequences for business practices.

Impact of E-Discovery on Litigation Outcomes

Preliminary research suggests that e-discovery can dramatically change the structure of litigation costs as well as effectively provide relevant information that changes expectations about the potential value of a case. Further, these effects are likely to vary significantly as a function of case characteristics. These changes will have impacts on litigation costs and propensities to file, settle, and go to trial. Changes will also occur in the magnitude and distribution of settlement amounts and jury awards.

This project has two tasks. The first will be to develop a general framework of the litigant decisionmaking process that links litigation costs, risks, and expectations to the legal environment, case characteristics, and IT technology. The second will be an econometric analysis

of actual case outcomes (obtained via a survey of law firms) for the purpose of validating the model, estimating specific parameters, and quantifying the impact of e-discovery.

The Costs of E-Discovery

Any assessment of whether a production request or litigation hold is “reasonable” requires a balancing of costs with potential benefits. Unfortunately, these burdens are likely to vary considerably, depending on several cost factors. This research will develop a cost model, based on econometric analysis of survey data, that links discovery costs with several observable characteristics, including company size, industry, IT structure, data location, case type, and other regulatory retention requirements. An important aspect of this work will be to examine the relative contribution of different aspects of the e-discovery process (such as preservation, identification, collection, review, or production) to overall costs. The main product from this task will be a cost guidebook that will enable courts to evaluate the likely burden of discovery requests. These cost relationships will also provide valuable input into the other proposed projects.

Forward-Looking Review of Emerging Technologies

The implications of e-discovery are highly dependent on available technologies, including cognitive search tools, proliferation of new platforms (VoIP, instant messaging, text messaging), and inexpensive terabyte storage capability. With rapid changes in these technologies, effective policy faces a moving target. This project will involve a forward-looking review of emerging technologies likely to affect the e-discovery cost-benefit calculus.

Based on a literature review and interviews of hardware and software vendors, the technology landscape of the future will be described for each technology group. Next, implications for the relative efficacy of alternative legal requirements will be drawn. Using the framework developed for the benchmark model of e-discovery costs, we will assess the degree to which policies, if they are to remain effective, should be flexible enough to keep pace with technological change.

Evaluation of Federal Rules

Although evaluating the impact of the federal rules will be difficult until well after their implementation in December 2006, an initial assessment can be conducted based on theory and available cost data. For example, some comparisons can be made across states that have already adopted different approaches to e-discovery. Then, after a year or two of implementation, one could directly analyze intermediate outcome measures in federal court cases, such as the scope of discovery requests and frequency of sanctions. Since impacts are expected to vary by case type, systematic changes in outcomes of, for example, employment cases versus business-to-business cases can also signal an effect of e-discovery.

Assessment of Indirect Effects of E-Discovery on Business Practices

In assessing the potential burdens of e-discovery, one has to consider the indirect effects on business operations. Ongoing litigation or the future threat of such litigation may induce corporations to adopt IT practices that are not necessarily efficient for the normal process of conducting business. To quantify these potential costs, we propose to conduct a survey of corporations. We will gather information on routine IT practices. What data files exist, how large are they, and what is their format? What are standard backup policies? In addition, data will be collected on the responses to e-discovery. To what extent have IT policies been altered because

of ongoing or potential litigation? What corporate procedures are in place for litigation holds and the duty to preserve data? What human resource changes have occurred? Have personnel received training? Does the company rely on outside vendors?

Finally, we will investigate whether e-discovery has influenced other technology adoption decisions. What investments in IT technology have been made in response to e-discovery? What technologies or applications have been avoided because of e-discovery concerns?