

**A Qualitative Study of Issues Raised
By the Discovery of Computer-Based
Information in Civil Litigation**

Molly Treadway Johnson

Kenneth J. Withers

Meghan A. Dunn

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I. Introduction and Background

Since the fall of 1999, the Federal Judicial Center (FJC) and the Discovery Subcommittee of the Judicial Conference Advisory Committee on Civil Rules have sought to learn more about discovery of computer-based information in civil litigation. Among other things, the Subcommittee is considering whether to propose amendments to the Federal Rules of Civil Procedure to accommodate distinctive issues raised by discovery of computer-based information. FJC research staff conducted a multipart study to shed light on these issues as well as to identify the problems and advantages associated with the discovery of computer-based evidence as it becomes more commonplace in civil litigation. This report presents the results of that study.

The Subcommittee did not ask the FJC to obtain precise base-rate data on the frequency with which discovery of computer-based information occurs—both because it is evident that such discovery will increase and because the need for potential rule changes does not necessarily hinge on the absolute frequency of occurrence of such discovery. Instead, the Subcommittee wanted to gain a better understanding of the nature of specific issues relating to computer-based discovery, including (but not limited to)

- the preservation or spoliation of computer-based evidence;
- costly, “heroic” efforts to retrieve computer-based information for purposes of discovery;
- the use of computer experts to assist with computer-based discovery; and
- privilege waiver in the context of computer-based discovery.

A more thorough understanding of how these issues arise and are handled in individual cases will help the Subcommittee determine whether rule changes are warranted. An underlying question is the extent to which computer-based evidence is qualitatively different from more traditional hard-copy evidence.¹

In this report, we present descriptions of and results from three research approaches used in the study:

1. a survey of magistrate judges, designed to learn about their experiences with computer-based discovery and to obtain their suggestions of cases illustrating various computer-based discovery issues that warranted in-depth study;
2. a survey of computer consultants who are frequently hired by parties to assist in cases involving discovery of computer-based evidence; and
3. detailed case studies of ten selected cases involving computer-based evidence.

1. See Kenneth J. Withers, White Paper on Computer-Based Discovery (Federal Judicial Center, October 4, 2002), for a discussion of this question.

Because the study is by design not based on data representative of all experiences with computer-based discovery in federal civil cases, *no general conclusions about federal court experiences with such discovery can be drawn from these results*. The data do, however, provide some insight into both the frequency of federal court experiences with computer-based discovery and the nature of some of its associated problems and advantages.² In addition, the case studies provide the views of participants (primarily magistrate judges and attorneys) as to whether any problems are amenable to rule-based solutions, and what form such solutions might take.

In April 2002, we provided a preliminary report to the Advisory Committee, based on the surveys and three completed case studies. This report provides all ten case studies and some additional analysis, primarily of information obtained through the case studies.

II. Summary of Findings

In summary, we found the following:

- About three out of five magistrate judges who handle discovery disputes have had a case in which a question surrounding discovery of computer-based evidence was brought to their attention.
- The most frequent types of cases in which computer-based discovery issues reportedly have arisen are single-plaintiff employment cases, general commercial litigation, and intellectual property cases. These types of cases, particularly the first two, are also relatively frequent in the general population of case filings.
- The issues or problems most frequently reported by magistrate judges regarding computer-based discovery were the hiring of computer experts by one or more parties; inadvertent disclosure of privileged computer-based information; on-site inspection of a party's computer system by an opposing party; preservation or spoliation of computerized data while a lawsuit is pending; and parties' sharing of the costs of retrieving computerized information.
- Most of the ten judges and seventeen attorneys interviewed for the case studies did not think that the Civil Rules had a major effect (positive or negative) on how the computer-based discovery issues were resolved in those cases.
- Among participants interviewed for the case studies, attorneys generally favored rule changes to accommodate specifically computer-based discovery more than judges did.

2. Because the Subcommittee is interested in whether rule changes are warranted to accommodate discovery of computer-based evidence, our investigation focuses mostly on problems raised by such discovery. We have also, however, gathered some data on instances in which the computer-based nature of certain evidence provided an advantage over traditional hard-copy evidence.

- Rule changes suggested by participants primarily relate to disclosure of computer-based information, form of production, data preservation or spoliation, volume of computer-based evidence, on-site inspections of computers, cost allocation, and handling of confidential or privileged information.³
- Some magistrate judges in the case-study cases used innovative case-management techniques, within the existing rules, to manage computer-based discovery.
- Several attorneys and judges suggested further education of both attorneys and judges regarding computer technology issues relevant to discovery in addition to or as an alternative to rule changes.

III. Research Approaches

This section briefly describes how we designed and carried out our survey of magistrate judges, survey of computer consultants, and case studies of ten selected cases. Appendix A provides more detail about the research methodology.

A. Survey of Magistrate Judges

In spring 2000, FJC staff surveyed magistrate judges, via the Internet, about their experiences with discovery of computer-based information (see Appendix B for a copy of the questionnaire). In addition to asking about the extent of their experience with such discovery and the types of problems they had encountered, the questionnaire asked for suggestions of cases with computer-based discovery issues that might warrant further attention as case studies.

The response rate to this Web-based survey was low (28%), making it difficult to determine if the responses were representative of magistrate judge experience with computer-based discovery in general, or if many magistrate judges chose not to respond because they had no experience with computer-based discovery. To answer this question, we mailed a one-page hard-copy questionnaire to nonrespondents, asking only why they had not answered the first questionnaire. This question was followed by several response options, including that the magistrate judge had no experience with computer-based discovery and therefore did not think his or her responses would be useful. Between the two surveys, we received an 83% response rate to the question whether a magistrate judge had any experience with computer-based discovery. The other substantive questions were answered only by the 28% of magistrate judges who responded to the Web-based survey.

3. For a listing of potential rule changes suggested by case-study participants, see *infra* section VI.B.

B. Survey of Computer Consultants

In 2001, FJC research staff undertook a survey of consultants in the fields of computer forensics and electronic discovery who subscribed to an Internet discussion group for professionals in these fields. The survey solicited general information about the work the consultants had done on behalf of clients involved in federal civil litigation. The questions in this survey were designed to be similar to those asked in the magistrate judge survey.

Even with a follow-up mailing, the overall response rate to this survey was poor; there were only ten usable questionnaires. It appears that, despite the general nature of our questions, the low response rate may have been due in part to confidentiality agreements with clients or court orders preventing the consultants from sharing the requested information.

C. Case Studies

To help the Subcommittee gain a more thorough understanding of how various computer-based discovery issues are manifested in specific cases, FJC staff designed a study to look at selected cases illustrating these issues. Some of the cases were identified by magistrate judges responding to our Web-based survey as having involved computer-based discovery issues of interest to the Subcommittee, while others were identified through a case law search on this topic. The study of each case involved reviewing and coding the court files and interviewing the participants (attorneys and judges) who handled the discovery of computer-based evidence in the case.

In addition to asking participants about the computer-based discovery problems involved in each case, we asked them about the role of the Civil Rules and whether they thought rule changes were necessary to accommodate computer-based discovery. In the course of the interviews, participants often mentioned questions or problems regarding computer-based discovery that they had encountered in other cases, and we recorded that information as well.

The nine magistrate judges and one district judge we interviewed had been on the bench from 7 to 16 years at the time of our interviews, and had an average (mean) of 10.8 years of service. The seventeen attorneys reported that, on average, 85% of their practice was devoted to federal civil litigation. They also reported experience with an average of 13.3 cases involving computer-based discovery; the range was from 4 to 30 such cases.

IV. Limitations of the Data

It is important to note that, for two reasons, the information obtained through our various research approaches cannot be taken as representative of all federal court experiences with computer-based discovery, or of all views of judges and attorneys with respect to such discovery and related potential rule revisions. First, two of our approaches—the magistrate judge survey and the case studies—focus primarily on cases managed and issues encountered by magistrate judges rather than district judges. We restricted our survey to magistrate judges

because we believed they would have more experience managing computer-based discovery. The types of cases and issues handled by district judges, however, might differ qualitatively or quantitatively from those handled by magistrate judges.

Second, the cases we studied in depth were those that magistrate judges identified as having involved computer-based discovery issues that were brought to their attention or that mentioned computer-based discovery in reported decisions. Although we also asked attorneys about their experiences with computer-based discovery issues in other cases, data from the current study cannot tell us how frequently such issues arise or how frequently computer-based discovery problems are resolved without the courts' involvement.

V. Survey Results

A. Survey of Magistrate Judges

The results of the magistrate judge survey reported in this section include the responses of 110 magistrate judges who responded to our Web-based survey and reported that they do handle discovery disputes.

1. Percentage of responding judges with experience handling computer-based discovery disputes

According to the combined results of our Web-based survey and the follow-up survey, about 60% of magistrate judges experienced a case raising computer-based discovery issues in the two years preceding our surveys.

If we add the number of judges who indicated on the Web-based survey that they had no experience with computer-based discovery (29) to the number who indicated the same in response to the follow-up survey (111), we find that 39% of our 355 respondents to the surveys reported that they had not had experience with computer-based discovery in their cases in the two years preceding the study.⁴ Thus, it appears that approximately three out of five magistrate judges have had experience with computer-based discovery issues in civil cases.

Note that this information does not directly indicate the frequency with which computer-based discovery occurs in civil cases. District judges do not always choose to delegate the handling of discovery disputes to magistrate judges. In addition, many computer-based discovery issues can be handled by attorneys without being brought to the attention of the judge (in fact, attorneys in our case-study interviews noted that this happens frequently, at least in some districts). What the data tell us at a minimum, however, is that computer-based discovery occurs in more than just a tiny proportion of cases, and the majority of magistrate judges have had cases in which such discovery has been brought to their attention.

4. Normally it is not sound research practice to combine results from separate surveys. In this instance, however, we surveyed the same population on the same topic in the two surveys, and thus report the results together on the limited question of the extent of magistrate judge experience with discovery of computer-based evidence.

2. Types of cases in which disputes involving computer-based discovery arise

We asked magistrate judges to report how many cases of various types they had handled in which discovery of computer-based evidence had been brought to their attention for action on their part. We then calculated the proportion of responding magistrate judges who reported having at least one case of each case type that involved computer-based discovery and the percentage of all cases reported involving such discovery that were of each case type. These figures are displayed in Table 1.

Although the respondents to our questionnaire might not represent all magistrate judges, a few general observations can be made based on Table 1. First, it appears that computer-based discovery problems that are brought to the attention of a magistrate judge are spread widely across the federal docket, and are not limited to large-scale litigation between corporate parties.

Table 1. Frequency of case types involving computer-based discovery (CBD) issues brought to the attention of magistrate judges for action

| Case type | Percentage of magistrate judges reporting at least one case of this case type that raised CBD issues (N = 81) | Percentage of all cases reported by magistrate judges as having raised CBD issues (N = 489) |
|---------------------------------|---|---|
| Employment—Individual plaintiff | 59 | 26 |
| General commercial litigation | 55 | 23 |
| Patent or copyright | 44 | 18 |
| Employment—class action | 25 | 8 |
| Products liability | 24 | 6 |
| Other ⁵ | 23 | 9 |
| Construction litigation | 10 | 3 |
| Securities litigation | 10 | 5 |
| Antitrust | 8 | 2 |

5. “Other” case types noted by participants included personal injury tort, breach of contract, *qui tam*, insurance, and toxic tort cases. None of these case types, however, was identified by more than three respondents.

Second, the large differences in relative frequency in the table suggest that computer-based discovery is brought to a magistrate judge's attention in employment cases involving an individual plaintiff, general commercial litigation, and patent or copyright cases with greater frequency than in other types of cases. Employment and commercial litigation cases are relatively frequent in the overall case population of the federal courts as well (they each constituted more than 9% of federal civil case filings in 1998), so the greater frequency with which computer-based discovery issues are raised in these cases may be due solely to the fact that there are a greater number of these cases in the federal courts.

In contrast, patent or copyright cases, employment class actions, and securities litigation cases are filed less frequently (in 1998, they accounted for 3.1%, 0.02%, and 1.1% of federal civil case filings, respectively), yet 10% or more of responding magistrate judges reported being made aware of a problem with computer-based discovery in each of these types of cases. This suggests that computer-based discovery problems arise disproportionately in these types of cases, although that may be simply because discovery problems in general arise more often in these cases, something we cannot determine based on the current data.

For a variety of reasons, we cannot draw firm conclusions about whether computer-based discovery problems arise in some case types more frequently than one would expect relative to their filing rates. For example, the respondents to our questionnaire were given a small number of case types to rate with respect to frequency of encountering computer-based discovery issues, whereas individuals filing a federal case have a large number of case types to choose from in designating the case. In addition, our questionnaire focused on discovery disputes brought to the attention of a magistrate judge, whereas this type of discovery might frequently occur without the knowledge of a judge. Finally, we do not have specific data on the frequency with which general discovery disputes, as opposed to disputes over computer-based discovery, are brought to the attention of a judge in each type of case.

3. Types of computer-based discovery issues most often brought to the attention of the magistrate judge

We asked magistrate judges to report how many cases they had had in which particular issues relating to computer-based discovery had occurred. Table 2 indicates how many magistrate judges reported having experienced each issue at least once, and what percentage of cases overall (across all respondents) were reported to have included each issue.

As shown in Table 2, more than two-thirds of responding magistrate judges with computer-based discovery experience reported having been involved in at least one case in which a computer expert was hired, making that activity by far the most frequent. Of all the cases with which respondents reported having computer-based discovery experience, a quarter had involved the hiring of computer experts.

Table 2. Frequency of computer-based discovery (CBD) issues in cases in which a CBD issue was brought to a magistrate judge for action

| Issue | Percentage of respondents reporting at least one case with this issue (N = 81) | Percentage of total CBD cases reported involving this issue (N = 489) ⁶ |
|---|--|--|
| Hiring of computer experts by one or more parties | 69 | 25 |
| Problems regarding privilege waiver when computerized information was produced | 49 | 15 |
| On-site inspection of a party's computer system by an opposing party | 48 | 15 |
| Parties' sharing the costs related to retrieving computerized information | 48 | 15 |
| Alleged spoliation (intentional or inadvertent destruction) of computer-based evidence by one or more parties | 47 | 13 |
| Issuance of a preservation order forbidding deletion of computer-based information | 35 | 10 |
| Parties' sharing the costs related to the form of production | 35 | 9 |
| Substantially increased efficiency in discovery owing to the computer-based nature of the information | 21 | 13 |

Four situations—privilege waiver problems, on-site inspection of a party's computer system by the opposing party, alleged spoliation, and parties' sharing the costs of retrieval—had been experienced by about half of the magistrate judges responding to the survey. Two situations—issuance of a preservation order and the parties' sharing of costs related to the form of production—had been experienced by about one-third of respondents.

Less than a quarter of responding magistrate judges reported having had experience with a case in which the efficiency of discovery was substantially increased as a result of the computer-based nature of the information. Because most of the questions on the questionnaire were answered only by magistrate judges who reported handling *disputes* related to computer-based discovery, however, this percentage most likely underestimates the frequency of cases in

6. The percentages in this column add to more than 100% because each case can involve multiple issues.

which computer-based discovery increases efficiency and raises no problems, or has no effect.⁷

B. Survey of Computer Consultants

The results of the consultant survey reported in this section are limited to the responses of the ten computer consultants who returned questionnaires with usable data.

1. Number of cases handled by consultants

The ten usable questionnaires indicated that the number of civil cases in which computer consultants were involved per year varied tremendously, from one to 400. The average was 85 cases per year. The wide range reflects the wide variety of consultants involved in this field, including individual computer investigators working alone or in very small firms, computer forensics and electronic discovery departments of large accounting and data management firms, and nationwide electronic discovery firms with multiple offices and scores of employees.

2. Types of cases in which computer forensics and electronic discovery consultants are involved

Computer-based discovery consultants are involved in many different types of federal civil cases. Their involvement is not confined to those types conventionally considered “big cases,” such as antitrust cases or employment class actions. The types of cases in which consultants reported the most frequent involvement correspond roughly to the types of cases in which the magistrate judges most frequently reported disputes, although we cannot draw any cause-and-effect inferences. The presence of disputes could create the need for consultants, or the hiring of consultants could produce disputes (or a third factor could affect both the use of consultants and the presence of disputes).

In our survey, we asked the consultants to report how many federal cases of various case types they worked on in the past two years. As we did with the magistrate judge survey, we then calculated the number of consultants reporting at least one case of each case type and the percentage of all reported cases represented by each case type. Some of the respondents did not provide a number, but simply checked off the case type. We counted those responses as “1” for tabulation purposes. Table 3 displays the case types and frequencies reported by consultants.

7. Magistrate judges who reported having no cases with disputes concerning this type of discovery were directed to skip the remaining questions on the questionnaire.

Table 3. Frequency of case types involving computer-based discovery (CBD) issues, as reported by computer forensics and electronic discovery consultants

| Case type | Number of consultants reporting at least one case of this case type that raised CBD issues (N = 10) | Percentage of all cases reported by consultants as having raised CBD issues (N = 191) |
|---------------------------------|---|---|
| General commercial litigation | 6 | 31 |
| Securities litigation | 6 | 18 |
| Patent or copyright | 6 | 17 |
| Employment—individual plaintiff | 5 | 18 |
| Antitrust | 4 | 6 |
| Products liability | 4 | 4 |
| Other ⁸ | 4 | 3 |
| Construction litigation | 3 | 2 |
| Employment—class action | 2 | 2 |

Although it is difficult to make direct comparisons between the results of the two surveys, most of the case-type frequencies reported by consultants are roughly similar to those reported by the magistrate judges in Table 1. The consultants reported a higher percentage of cases in the securities and antitrust areas than the judges did. Because of the low number of respondents to the consultant survey, however, this could represent an unusually high level of involvement of one or two consultants in these types of cases rather than a more general pattern.

3. Types of computer-based discovery issues encountered by consultants

We asked the consultants to report how often they encountered particular issues relating to computer-based discovery in the federal cases in which they were involved. We then calculated the number of consultants with at least one case with each issue and the percentage of cases overall in which each issue was raised. The results are displayed in Table 4. Again, when respondents simply checked off an issue instead of reporting a frequency, we counted that response as “1” for tabulation purposes.

8. This category comprises civil cases involving computer hacking, child pornography, and counterfeiting.

Table 4. Frequency of computer-based discovery (CBD) issues reported by computer forensics and electronic discovery consultants

| Issue | Number of consultants reporting at least one case with this issue (N = 10) | Percentage of total CBD cases reported involving this issue (N = 191)⁹ |
|--|---|--|
| An effort by one party to limit or prevent deletion of e-mail or other computer-based information by another party, pending discovery | 9 | 79 |
| A demand for on-site inspection of a party's computer system by an opposing party | 9 | 48 |
| An offer or demand to share costs required to locate and retrieve computerized information | 9 | 41 |
| Alleged spoliation | 9 | 27 |
| An ex parte order from the court forbidding deletion of e-mail or other computerized information by the other party, pending discovery | 7 | 14 |
| An offer or demand to share costs of production | 6 | 13 |
| A request that the court impose sanctions on a party for alleged misconduct in discovery of computerized information | 6 | 9 |
| An order from the court requiring that the party seeking production of computer data pay all or part of the costs of production | 5 | 16 |
| Problems regarding the inadvertent disclosure or production of privileged computerized information | 5 | 12 |

9. As in Table 2, the percentages in this column add to more than 100% because cases can involve multiple issues.

Because of differences in the wording of the two surveys, the list of issues presented in Table 4 differs from the list of issues presented in the survey of magistrate judges and reported in Table 2. Direct comparison of these two sets of results is therefore difficult. Still, some comparisons can be made that point to common elements in both sets of results. For example, the consultants and the magistrate judges both reported a relatively high frequency of three issues or activities: on-site inspection, efforts to share computer-based discovery costs, and allegations of spoliation.

The issue most frequently encountered by consultants, occurring in 79% of the cases in which they worked, was an effort by one party to require another party to preserve computer-based information (such as e-mail) pending discovery. Magistrate judges were not asked about this specific issue, but consultants and magistrate judges reported similar percentages for cases in which a preservation order was issued (10% of magistrate judges' cases with computer-based discovery; 14% of consultants' cases).¹⁰

We also asked the consultants to add any computer-based discovery issues they had encountered that were not specifically listed. Problems identified by consultants that were not specifically mentioned in the list include the following:

- difficulty acquiring data from obsolete systems;
- late hiring of consultants, minimizing the time for their analysis of computerized information;
- inadvertent destruction of evidence owing to parties' lack of understanding of computer systems;
- discovery produced on defective computer media or in a form that cannot be read by the opposing party; and
- other problems related to clients' lack of understanding of computer system functioning.

VI. Case-Study Results

For the ten case studies, we reviewed the dockets and the specific filings that appeared to be most relevant to computer-based discovery. We also attempted to interview the attorneys on each side and the judge or judges who oversaw discovery in each case, although in a limited number of instances attorneys declined to be interviewed.

In this section, we summarize the data from the case studies, focusing specifically on participants' views of the existing Civil Rules as they apply to computer-based discovery; participants' suggestions for potential changes to the rules to accommodate this type of discovery; case-management techniques judges have used under the existing rules to manage computer-based discovery; the perceived need for greater education of attorneys and judges regarding computer-

10. At the request of the Subcommittee, the question for consultants asked about *ex parte* data preservation orders, whereas the magistrate judges were asked about all orders of this nature. Thus, consultants probably encountered data preservation orders more frequently overall.

technology issues relevant to discovery; and potential benefits of computer-based discovery. The detailed case studies follow this analysis.

A. Participants' Views of the Existing Civil Rules As They Apply to Computer-Based Discovery

Overall, seven of the ten judges interviewed for our case studies (nine magistrate judges and one district judge) believed no rule changes are necessary. Of the seventeen attorneys interviewed, twelve suggested that the rules be changed to address specifically computer-based discovery.

The cases reported were litigated between 1993 and 2000, when Rule 26(a) still allowed districts to opt out of its disclosure provisions and when Rule 26(f) contemplated that districts would exempt a limited set of cases by local rule from its provisions for a discovery conference before the initial pretrial conference. Several participants suggested that these provisions—which require early disclosure of information relevant to discovery, and an early plan for discovery—would have been useful in the case in which they were involved. Thus, one rule change thought to be useful for computer-based discovery has already been implemented.

Most judges and attorneys did not believe that the rules had a major effect on how the computer-based discovery issues in their case-study cases were handled or resolved, and did not believe that the existing rules caused problems for the case. In reaching this conclusion, several participants noted that the rules already cover computer-based discovery; as one magistrate judge said, “It’s pretty clear that documents in other forms are covered by the rules, and we don’t need a whole lot more detail than that.” Other participants said that the attorneys were able to work out the computer-based discovery questions on their own, without resort to the court and the rules. In addition, almost half of the participants believed that the problems they encountered in the case-study cases would have arisen even if the information sought were in hard-copy form: When asked about this specifically, five out of ten judges and eight out of seventeen attorneys said the discovery problems were not attributable to the computer-based nature of the evidence.

While some participants did suggest rule changes that might be useful to accommodate computer-based discovery (see the next section), others argued against changing the rules. For example, one attorney noted that the context in which computer-based discovery issues arise “varies so much that you need to do things on a case-by-case basis.” Another attorney said that changing the rules to address specifically this type of discovery would “add complication, increase costs, and send litigants to state court.” A third attorney said he thought “the rules need to be broad enough to allow for just about any kind of development that you can think of.” A magistrate judge said he believes that the courts need more experience with computer-based discovery before determining whether rule changes are necessary.

Overall, then, most participants in the case-study cases did not see the rules as having a major effect on those cases, and a few argued against any rule changes. Others had ideas for rule revisions that might help in future cases with

this type of discovery, based on both experience in the case-study cases and more general experience. These suggestions are discussed in the next section.

B. Participants' Suggestions for Potential Civil Rules Changes to Accommodate Computer-Based Discovery

Most participants acknowledged that they had not given a great deal of thought to how the rules might be changed to accommodate specifically computer-based discovery. In addition, a few participants seemed not to realize that the existing rules are intended to cover computer-based information in discovery. For example, one attorney suggested amending the definition of “document” to specifically include computer-based items and spelling out that e-mail and electronic documents are included under Rule 34. Several other participants, both attorneys and judges, noted vaguely that the rules should be changed to apply to computer-based discovery as well as traditional discovery. It was not clear from the context of their responses whether these participants were familiar with the fact that “other data compilations” is included in Rule 34(a)'s definition of “documents” and that the Committee notes clarify that computer data are intended to be covered by this rule.

Of those judges and attorneys who did suggest rule changes, most based their opinions regarding the need for such changes not only on the case-study case, but also on their more general experience with computer-based discovery. The following are their specific suggestions for rule changes and the number of participants who made each suggestion.

Form of production

- In suitable cases, requiring or allowing the court to order that all discovery be done in electronic form (two attorneys);
- Allowing a producing party to determine the form of production (one attorney).

Data preservation or spoliation

- Explicitly allowing judges to issue an early data preservation order requiring parties to “freeze” (but not necessarily produce) relevant data early in a lawsuit, pending later arguments about discoverability (two attorneys);
- Allowing a party who believes computerized information is being hidden by an opposing party to hire a computer expert to search for the information, and issuing sanctions if the information is found by the expert (one attorney).

Disclosure of computer information

- Specifying more explicitly that computer-based information should be included in Rule 26(a) disclosures (one magistrate judge, one attorney);
- Including computer-based discovery in Rule 26(f) plans and Rule 16 orders (two magistrate judges, two attorneys);

- Requiring a producing party to provide information about file nomenclature and organization of relevant computer files as part of its Rule 26(a) disclosures (one magistrate judge);
- Clarifying parties' obligations to review electronic documents for purposes of disclosure or discovery (e.g., what does "reasonably available" mean in the realm of electronic information?) (two attorneys).

Miscellaneous suggestions

- Providing more guidance for judges on how to handle privilege claims in the context of computer-based information, and on evaluating parties' claims regarding difficulties in extracting information from computer files (one magistrate judge);
- Allowing for appointment of a neutral discovery referee to conduct searches of parties' computer systems (one attorney);
- Allowing more depositions in lieu of Rule 34 discovery of computerized information (one attorney);
- Allowing an attorney who creates a database solely for his or her own purposes to not disclose the existence of the database to the other party (one attorney);
- Examining the rules with respect to e-mail, particularly when large amounts of e-mail must be retrieved from individual hard drives, and providing guidance about allocating related costs (one judge).

C. Case-Management Techniques Judges Used to Manage Computer-Based Discovery in Case-Study Cases

Working within the existing rules, the magistrate judges who handled computer-based discovery disputes in the case-study cases employed or suggested several interesting case-management strategies. These include the following, most of which they used in the case under study:

- Using a questionnaire to determine how many of a company's employees transmitted discoverable e-mail, and ordering that a "spot check" of the company's computer systems be conducted, which involved checking the computer systems of fifteen employees of the company to determine whether all relevant material had been produced in discovery;
- Holding a one-day computer "summit" with attorneys and computer experts for both sides, so that the judge could be educated about the technical problems and disputes and help the parties formulate a plan for completing the computer-based discovery;
- Holding regular telephone conferences with attorneys to keep on top of the discovery problems;

- In a case involving privilege claims relating to e-mail, ordering that the requesting party be provided with a printout of the “header” information from all e-mail messages (title and date of message, names of sender and recipient), so it could be sure all relevant, unprivileged e-mails were being produced;
- When an on-site inspection of a party’s computers was warranted, ordering that a mirror image of the hard drive be created, and the inspection be done on that image, to avoid inadvertent destruction of computer-based information that could be caused by the search itself.

D. Perceived Need for Further Education of Attorneys and Judges Regarding Computer-Technology Issues Relevant to Discovery

A number of participants said that further education of attorneys and judges regarding computer-based discovery issues would be more appropriate than rule changes. Two judges thought it would be useful for judges to have access to experts who were well versed in both computer and legal issues, whom they could consult when questions arose in an individual case.

Several attorneys noted that judges often do not understand computer-based evidence and how it is handled; for example, one attorney said, “Judges don’t realize that you can’t just produce all things electronically as easily as hard-copy documents, which leads to a lot of discussion about burden.” Another said, “The problem with electronic data is that you often get . . . judges . . . [who] don’t understand how the data is manipulated and where it comes from.” A third attorney commented that “there’s a bias among the courts in favor of paper; they distrust computer information.” He added, however, that “this will change as courts and attorneys get more comfortable with computers.”

In three cases, attorneys stated that the magistrate judge overseeing discovery did not fully understand the implications of the computerized nature of the evidence. One of these attorneys said, “The court didn’t understand that [my client] didn’t keep paper records,” and another said, “[The other side] put just enough computer language gibberish in their memorandum of law, so that the judge just threw his hands up. Judges don’t understand these computer issues.” A third attorney said, “The magistrate judge had a hard time understanding why [the defendant] couldn’t just print out the information. . . . [T]he courts have to understand that the systems are not designed to be printed out.”

Magistrate judges we interviewed also noted that computer issues are difficult for judges to understand thoroughly. As one magistrate judge said, “We [judges] are all busy, and can’t learn all of this [computer] stuff. When parties argue that something will be very expensive, or that something can’t be accessed, we can’t know if they’re telling the truth.” Similarly, another magistrate judge observed that, as “end users” of the technology, it is sometimes “hard [for judges] to know what can be extracted easily.” In response to similar concerns,

the Federal Judicial Center has been providing education on computer-based discovery to judges and others since 1999.¹¹

Finally, several magistrate judges noted that attorneys have different levels of sophistication regarding computers, and that a lack of knowledge on the part of an attorney might make it easier for the other side to hide computerized information or make it difficult for that attorney to know what to ask for with respect to computerized information.

E. Potential Benefits of Computer-Based Discovery

Several participants in our case-study interviews noted real or potential benefits of computerized information in the context of discovery. For example, in Case Study #1, the parties' exchange of information from computerized databases helped greatly in determining the class size. According to the magistrate judge and both attorneys we interviewed, the fact that this information was computerized was critical to the parties' ability to reach a settlement. Similarly, in Case Study #3, the magistrate judge observed that the fact that both companies had computerized records "allowed for a more efficient exchange of documents." And an attorney noted that "it's easier to deliver a CD or two than lots of hard-copy documents."

In Case Study #2, the magistrate judge said that the electronic nature of the evidence "made a massive case more manageable." He also believed that the jury's verdict in favor of the plaintiff was in part due to the electronic nature of the evidence, noting that if all the information had been in hard-copy form, "there would have been just too much paper for the jury to digest."

11. Center staff have made presentations and organized mock hearings on computer-based discovery at the Center's national workshops for district judges and for magistrate judges and at Center circuit workshops for district and circuit judges. We are also updating materials from Center educational programs, as well as sample discovery orders and an annotated bibliography, for publication on the FJC Web site. Center staff published an introductory article with a "Rule 16 Conference Checklist" in the *Federal Courts Law Review*, the on-line publication of the Federal Magistrate Judges Association. Staff members have made presentations at numerous educational programs sponsored by bar associations and other groups, and requests for such presentations continue.

F. Individual Case Studies

The following sections present detailed descriptions of each case for which we did a case study. Table 5 highlights particular issues involved in each case.

Table 5. Index of issues raised in case studies

| Issue | Identification # of the case study in which the issue was raised or mentioned by the participant | | | | | | | | | |
|---|--|---|---|---|---|---|---|---|---|----|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Privilege/confidentiality/work product/privacy concerns | x | | x | x | | x | x | | x | |
| Data preservation | | x | | x | | | | x | x | x |
| Party-employed computer experts | x | x | | x | x | | | | | |
| Problems with volume of computer-based evidence | | x | | x | | x | | | x | x |
| Form-of-production issues | | | x | | | | | x | x | x |
| On-site inspection of computers | | | | | x | | x | x | | |
| Legacy problems (obsolete computer systems) | | x | | | | | | | | x |
| Costly data retrieval efforts | | x | | x | x | | | | | x |
| Cost sharing or shifting | | | x | | x | | | | | x |
| Spoliation claims | x | x | | x | x | | | | | |
| Judicial management of computer-based discovery | | x | x | | | x | | | | |
| Increased efficiency through use of computerized data | x | x | x | | | | | x | | |

1. Case Study #1

a. Summary of case

Case Study #1 was a class action involving consumers' allegations of fraud, under RICO and the Federal Debt Collection Practices Act, against a corporation that financed automobile loans. Smaller defendants settled early, leaving the lender. The case was extremely contentious and included multiple hearings on the computer-based discovery issues and several intermediate appeals, although it eventually settled.

b. Computer-based discovery issues

1. Access to attorney work product data; destruction of data in the ordinary course of business

The primary computer-based discovery dispute in this case centered on an electronic database maintained by the defendant's law firm. The database contained certain fields of information, relevant to the case, that had been extracted from hard-copy files about each loan (e.g., vehicle I.D. number, date of repossession). The plaintiffs filed a motion to compel production of this database. The defense attorney claimed that he had created the database for his own use in preparing the case, and not for use at trial, and therefore it should not have to be turned over to the plaintiffs, since the same information was available in hard-copy form.

The plaintiffs asserted that at least some of the information in the defendant's electronic database had been computerized before the litigation began, and therefore was not attorney work product. In support of their motion to compel discovery, they cited the defendant's response to an earlier request for the electronic data, in which the defendant said that producing the information requested would be too burdensome, as the defendant had been through at least three computer systems since the time the electronic data had begun being entered, and that much of the data had been destroyed in the ordinary course of business. At that time, the defendant had further argued that it would be a "Herculean" task to determine which specific information had and had not been deleted from the original databases on these various computer systems.

The plaintiffs argued that, despite the defendant's claim that the information could not be retrieved, the defendant was using the same data in a related case as evidence in support of a motion for summary judgment. The defendant admitted that some of the information *had* previously been computerized, but claimed that those computerized records had been destroyed in the ordinary course of business before litigation began and that the data used in the related case were from the database compiled from hard-copy files by the defendant's attorney. The plaintiffs disputed the claim that the information was no longer available in computerized form.

The magistrate judge handling discovery in the case ordered that the database created by the attorney be filed under seal for in camera inspection, and the judge subsequently denied the motion to compel discovery, finding that the da-

tabase fell within attorney work product. He apparently did not credit the plaintiffs' argument that the original electronic database was still in existence.

2. *Cost savings and efficiencies from using computer-based data to determine class size*

When the trial was scheduled, this case came before a different magistrate judge for a settlement conference. During this conference, the judge determined that "a major problem prohibiting settlement of this matter is the inability of either side to discuss, with clarity, the precise size of the class." At this point, both parties had developed electronic databases concerning various loan transactions from the hard-copy files maintained by the defendant. The settlement judge ordered the parties to share specific data from these databases that were relevant to determining class size. With the exchange of these data, the parties were able to identify several hundred claimants about whom there was no dispute in terms of their entitlement to compensation, as well as a number of claims for which more evidence was needed.

3. *Cost and usefulness of party-employed computer experts*

When the motion to compel production of the defendant's attorney's electronic database was denied, the plaintiffs hired accounting experts to create electronic databases using information extracted from the hard-copy files. According to the plaintiffs' attorney, they spent \$100,000 for this work, most likely increasing the cost of discovery by "a factor of 8 to 10." The defendant also hired a computer consultant, who reviewed the database created by the plaintiffs to determine "whether there were any problems with how that database was put together." Both sides reported that, although the use of experts and consultants increased the cost of discovery significantly, the cost was justified by the assistance the experts and consultants provided.

c. *General observations by participants*

1. *Magistrate judge who handled discovery disputes*

The magistrate judge who handled discovery in this case and denied the plaintiffs' motion to compel discovery said that "there was nothing about the fact that the discovery was in computer form that affected my decisions, [though] that's not to say counsel weren't motivated by that."

2. *Magistrate judge who handled settlement*

The magistrate judge who held the settlement conference in this case and ordered the parties to exchange electronic data to determine class size said that "the case could not have settled if the information was not available in computerized form," and that the computer-based nature of the evidence "facilitated [the parties'] ability to deal with the claims." In a situation like this, he indicated, computerized discovery is "a means for attorneys to save a lot of time."

3. *Plaintiffs' attorney*

Work product and preservation of data. The plaintiffs' attorney did not believe the defendant's claim that the electronic database that previously contained the

information fields the plaintiffs were interested in no longer existed and had been destroyed in the ordinary course of business prior to the litigation. He observed that “the ‘defense du jour’ is to say the computerized information no longer exists,” adding that “it’s very hard to disprove a claim that information doesn’t exist in electronic form.”¹² This attorney also believed that the magistrate judge who oversaw discovery did not completely understand the computer issues in the case and that his failure to understand the issues led to his denial of the plaintiffs’ motion to compel discovery. He said, “They put just enough computer language gibberish in their memorandum of law, so that the judge just threw his hands up. Judges don’t understand these computer issues.”

Use of computer-based data to determine class size. With respect to the electronic data exchanged during settlement negotiations, the plaintiffs’ attorney said that the computerized nature of the evidence “absolutely” had an effect on the ability to settle the case. He said, “We couldn’t try to settle without information from the database.”

4. Defendant’s attorney

Work product and preservation of data. At the hearing on the motion to compel discovery, the defendant’s attorney argued that the contents of his electronic database were analogous to notes taken by an attorney on a yellow legal pad while reviewing hard-copy files. When interviewed, he acknowledged that one difference between these two types of data would be the extent to which they could be searched.

The defendant’s attorney believed that he should not have had to disclose the existence of the electronic database he created, since he had no plans to use it at trial. He had “erred on the side of disclosing its existence,” but resented that he had to do this, as he believed the database was attorney work product. As he described it, even though the contents of the database were not ordered to be disclosed, “[t]he plaintiffs very effectively used [the existence of] that database as a touchstone for the theme that we were hiding things.”

Use of electronic data to determine class size. Regarding the use of electronic data to determine class size, the defendant’s attorney agreed that these data were “absolutely” critical to settlement of the case. He said, “[They] enabled us to determine with clarity that there were very few people actually in the class. This substantially affected settlement.”

d. Role of Civil Rules

Both of the attorneys interviewed, but neither of the magistrate judges, believed that modifications to the rules would have helped in this case.

1. Plaintiffs’ attorney

The plaintiffs’ attorney believed that the rules should contemplate that a party who is told that electronic records can’t be retrieved should be able to hire computer experts—by rule—and “go into the [other party’s] computer opera-

12. The same could be said of hard-copy data, but the attorney did not comment on whether one type of claim was more difficult to prove than the other.

tions.” If the party finds the data that were claimed to be unavailable, the judge should issue sanctions against the other party, including paying the costs of the requesting party’s computer consultants. He did not specify how he believed such a rule change should be implemented.

2. *Defendant’s attorney*

The defendant’s attorney, who created the electronic database at issue in this case, believed that the rules should provide that an attorney who prepares a database for his or her own purposes (and not for use at trial) should not have to disclose its existence.

3. *Magistrate judge who oversaw settlement*

The magistrate judge who oversaw settlement said that the current discovery rules were adequate in terms of allowing him to order the exchange of electronic information to determine class size. He does not see a need for rule changes to accommodate these situations, even if the computerized nature of the evidence clearly plays a large role in settling the case.

2. Case Study #2

a. *Summary of case*

Case Study #2 was an antitrust case in which the plaintiffs, a group of independent boat builders, accused the defendant, a marine engine manufacturer, of monopolizing the market for certain boat engines, engaging in unreasonable restraint of trade, and substantially reducing competition in the engine market. Because of the nature of the suit, many documents were filed under seal in order to preserve the confidentiality of company business plans. After three years of discovery, the case went to trial, and the jury ruled in favor of the plaintiffs. The judgment was overturned on appeal, however, by the appeals court on issues unrelated to the subject of discovery. No further action was taken.

b. *Computer-based discovery issues*

1. *Volume of e-mail requested; legacy issues; spoliation*

The majority of the computer-based discovery disputes in this case centered around the scope of discovery and primarily focused on e-mail. In response to the plaintiffs’ motion to compel production of all e-mail files, including current ones and backups, the magistrate judge proposed a questionnaire to determine how many of the defendant’s employees transmitted discoverable information via e-mail. The magistrate judge ordered those employees who responded “yes” or “maybe” on the questionnaire to retain all e-mail.

While the e-mail questionnaire was being constructed and completed, the magistrate judge ordered a spot check of the computer systems of fifteen of the defendant’s employees to determine whether the defendant had provided the plaintiffs with all the relevant electronic materials. The spot check encompassed all of the computer files (including sent and received e-mail) of the named employees, excluding only the privileged matter (the defendant was permitted to screen all materials for privileged matter and maintain a privilege log). As a re-

sult of this spot check, several business-related e-mails were found, leading the plaintiffs to claim that the defendant had withheld and destroyed relevant e-mails during the original document sweep; the plaintiffs asked for a spoliation instruction for the jury. The defendant countered by stating that its company had switched from one e-mail system (Fisher) to another (Lotus Notes) while discovery was taking place. Because the new e-mail system was easier to operate, it was used for business-related communication, whereas the previous e-mail system had not been. It was those Lotus Notes e-mails that were uncovered in the spot check, and the defendant claimed there was no evidence that the missing Fisher e-mails had contained business-related information.

The district court judge ruled that, although it seemed likely that many things on the defendant's Fisher e-mail system had been destroyed, those e-mails were unlikely to be highly significant because the system was more cumbersome than its replacement and therefore was rarely used for business-related e-mail. The request for a spoliation jury instruction was denied, as the judge ruled that the deletion of e-mail "was not the result of an intentional or bad faith effort to destroy evidence," and that "even if the deleted e-mails were relevant to the Plaintiffs' case, Plaintiffs have not suffered the requisite prejudice necessary for the giving of an adverse inference instruction." Further e-mail discovery was permitted on a limited basis—the defendant was ordered to search the existing system for responsive e-mails, but was not required to restore backup tapes to search for deleted Fisher e-mails.

2. *Preservation of data in the ordinary course of business; costly data retrieval efforts*

In response to the plaintiffs' motion to compel production of electronically stored information, the magistrate judge ordered the defendant not to destroy electronically stored materials. After the defendant argued that preserving every piece of electronic information constituted an undue burden, the magistrate judge narrowed the preservation order, permitting the "destruction of irrelevant material or materials whose cost of preservation substantially outweighs their relevance." The defendant was ordered to file a list of categories of materials it wished to destroy, and the other side was given eleven days to file any objections. The plaintiffs also requested that the defendant restore and produce all deleted and destroyed documents from the past five years; this motion was denied by the magistrate judge.

3. *Role of the court in managing discovery*

The magistrate judge played an active role in managing the discovery. Although he became involved in the case relatively late, he educated himself about the computer issues involved and held a one-day computer "summit" involving both sides' attorneys and computer experts. During the summit the parties explained what they wanted from discovery and the technical problems involved in answering the discovery requests. The summit resulted in the formulation of a general plan for conducting further computer-based discovery. Thereafter, the lawyers from both sides and the magistrate judge held regular telephone conferences to resolve discovery issues.

4. *Cost and usefulness of party-employed computer experts*

The plaintiffs brought in outside computer experts to help frame their discovery by providing guidance about what materials to request from the defendant. A separate expert in computer forensics was also brought in by the plaintiffs at trial to testify about the discovery disputes regarding computer data. The expert planned to testify that the defendant had deleted relevant e-mail and that a search of the old e-mail system should have been done earlier, thereby preventing the destruction of potentially relevant messages. The defendant objected to the use of the plaintiffs' expert in testifying at trial about matters relating to discovery and brought in its own outside expert to rebut the plaintiffs'. The district judge denied the defendant's motion to strike the plaintiffs' expert, but forbade the expert from talking about the destruction of e-mail without making it relevant to the substantive issues in the case.

c. *General observations by participants*

1. *Magistrate judge*

The magistrate judge who handled discovery thought that the use of computer-based information was "a double-edged sword" in this case. He said that, on the one hand, the electronic discovery made a massive case more manageable, and "the plaintiffs got more information and a jury verdict, which they probably wouldn't have done in the paper days. There would have just been too much paper for the jury to digest." On the other hand, difficulties arose because some of the computer-based information "was not as well organized as it might have been."

Alleged spoliation. According to the magistrate judge, alleged spoliation of computer-based information was a "big problem" with regard to e-mail, largely because of the defendant's change in e-mail systems. As he stated, the defendant "allegedly destroyed vitally important e-mails. They had changed their e-mail systems around this same time and maintained that they had preserved the relevant e-mail. A spot check proved inconclusive, and the plaintiffs were not able to demonstrate that the missing information would have been discoverable."

Role of the court in managing discovery. The magistrate judge stressed the importance of early disclosure by the parties and early intervention by the court. He reported that in a subsequent case involving computer-based discovery, he took a lesson from this case, got involved much earlier, and "managed the dickens out of it."

2. *Plaintiffs' attorneys*

Two plaintiffs' attorneys were interviewed regarding this case. The two had similar opinions about the computer-based discovery issues.

Alleged spoliation. One attorney said that obtaining potentially deleted e-mails from the Fisher system was a "serious problem that was never really resolved." He stated that, despite the defendant's claim that the Fisher system was not used to conduct business, "we got at hundreds of relevant e-mail," that had been printed out, "but not enough." The e-mail issue highlighted one of the differences between computer-based discovery and traditional paper-based discovery.

As one attorney noted, “[W]hen it is electronic information [you are asking for], one side can come up with all sorts of reasons why they cannot provide that information, and the courts will listen to that argument. Once you get past that issue, however, the disputes that arise apply to both computer-based and hard-copy documents.”

Role of the court in managing discovery. Both attorneys praised the magistrate judge’s handling of discovery, stating that the weekly conferences to “hash out a lot of the problems” were “very useful.” One attorney said the magistrate judge was “really excellent” and did an admirable job of understanding what the computer issues were.

Cost and usefulness of computer experts. The plaintiffs’ attorneys relied on outside consultants to help them frame discovery. The attorneys said that the consultants helped them determine “what to ask for and how to define it, how to understand whether the responses we got from the defendant were excuses or real reasons, and how to ‘unlock’ electronic discovery.” Although the outside consultants were expensive, both attorneys agreed that they were “definitely” worth the money and “probably didn’t add significantly to the overall cost” of the case. The attorneys said that in-house consultants were also used, but on a smaller scale and in a more limited capacity, “primarily helping to find purchase records” on personal computers.

3. Defendant’s attorney

Alleged spoliation. The defendant’s attorney believed that the plaintiffs relied disproportionately on computer-based discovery. Instead of using it to obtain all relevant information, he believed the plaintiffs, “used electronic discovery to highlight e-mail that was not produced and to make an issue of that.” In his opinion, the expense and burden of discovery was disproportionate to its relevance; he claimed that the plaintiffs’ strategy was to make the case one of spoliation, rather than a case on the merits. Part of the problem regarding the e-mail issue was the relative recency of e-mail as a means of communicating. The defendant’s attorney acknowledged that, “now it’s routine to look for e-mail, but it wasn’t then.”

Role of the court in managing discovery. With regard to the court’s role in managing discovery, the defendant’s attorney believed that while the weekly telephone conferences solved many problems before they became overwhelming, the availability of a forum for discovery disputes may have increased the number of disputes. He said, “I think many things became issues because we had this ready forum, and without that forum, those things wouldn’t even have come up.”

Cost and usefulness of computer experts. The defendant used in-house computer consultants to determine “factual information,” such as what data were on the computers, how backups were made and where they were stored, and how to resolve format issues. The defendant’s attorney said that these in-house consultants were “definitely worth” their minimal cost and were more useful than the outside consultant hired to rebut the plaintiffs’ expert.

d. Role of Civil Rules

The district in which this case was handled was an opt-out district at the time, and no Rule 26(f) discovery plan was filed. Most participants (magistrate judge, defendant's attorney, one plaintiff's attorney) believed that a Rule 26(f) plan would have been beneficial in this case, and would have forced the parties and the court to think about discovery issues sooner.¹³ Although the magistrate judge's handling of the discovery prompted the parties to consider these issues to some extent, a more formal rule may have gone farther.

1. Magistrate judge

The magistrate judge recommended that the Civil Rules be changed to account "specifically for the discovery of computer-based information," though he did not specify how such a change could be made. He also believed that a Rule 26(f) plan would "absolutely" have helped in this case. He said, "The case would have been ready earlier. It would have forced both parties to exchange information about computer systems earlier. As it was, neither side had a good grasp of what was there and how to get at it."

2. Plaintiffs' attorneys

The two plaintiffs' attorneys had differing views on the role of the Civil Rules. One attorney thought that having a Rule 26(f) plan covering computer-based discovery would have helped in this particular case by getting the court and the parties to think about these things "before disputes arise." He also thought that the Civil Rules governing discovery did not need to be changed to accommodate computer-based discovery because "the context varies so much that you really have to do things ad hoc," on a case-by-case basis. In his opinion, educating district judges and magistrate judges to take a more active role is far more important.

The other plaintiffs' attorney took the opposite viewpoint, indicating that a Rule 26(f) plan would have been useless because "everyone skirts it." However, he did advocate altering the Civil Rules to "amend the definition of 'document' to specifically include computer-based items" and to spell out that "requests of e-mail and electronic documents" are included under Rule 34.¹⁴

3. Defendant's attorney

Although the defendant's attorney indicated that a Rule 26(f) plan might have helped in this case, he also acknowledged, "[W]e had the equivalent of a plan with the judge's oversight, and it probably would have been contentious regardless of whether there was a rule." With regard to changing the Civil Rules, he observed, "[W]e would have benefited from a principle limiting what the

13. Rule 26(f) no longer allows for exemption of cases by local rule, so if the case were filed now, a Rule 26(f) plan would be required.

14. Although "e-mail and electronic documents" are not specifically mentioned in Rule 34(a)'s definition of documents, the phrase "other data compilations" encompasses electronic data compilations, as clarified in the Committee Notes to the 1970 amendments to that section.

plaintiffs could ask for,” but he acknowledged the difficulty of imposing limitations before knowing what is available.

3. Case Study #3

a. Summary of case

Case Study #3 was a patent infringement case in which a computer manufacturing corporation claimed that the defendant computer corporation’s widely sold computer system violated several of its patents. Five years after the suit was filed, the plaintiff corporation was bought by another computer corporation, and the case eventually settled a year later. Although neither side admitted fault, the defendant paid the plaintiff an undisclosed sum, and both sides agreed on a five-year moratorium on patent suits.

An examination of the docket indicated that most of the discovery disputes revolved around the scope of discovery. Specifically, the plaintiff requested documents regarding one of the defendant’s computer systems, but the defendant claimed that the system had been announced publicly after the date the suit was filed and was therefore not included in the discovery. The magistrate judge denied the plaintiff’s motion to compel discovery and denied the subsequent request for reconsideration.

b. Computer-based discovery issues

1. Form of production

The type of information sought during discovery led to disputes regarding the form of production. Much of the information regarding systems design needed during discovery was stored in large on-line databases. The plaintiff requested drawings of the defendant’s relevant projects, but the defendant had no paper designs to provide, since its engineers did all of their work on line. According to the defendant’s attorney, “nothing was designed to be printed or downloaded onto a user-friendly file.” The defendant eventually produced electronic files in a format the plaintiff could access, but the files were so large that a dedicated server was required.

Both sides also produced e-mails in both hard-copy and electronic form; neither side indicated that this was particularly problematic.

2. Privilege; confidentiality

Because the defendant’s engineers created and modified their designs on line, many of the designs contained privileged information in the form of engineers’ notes. At the beginning of the discovery process, the magistrate judge issued an order establishing which document imaging and database services would deal with confidential documents for both sides, and how those services would treat the confidential documents.

Additionally, a protective order issued in the case covered inadvertent production of privileged information, providing that such production did not constitute a waiver of privilege.

c. General observations by participants

1. Magistrate judge

The magistrate judge firmly believed that the types of problems that arose were not specific to electronic discovery. He said, overall, “the problems weren’t electronic—they were the same things we’d see in non-computer-based discovery . . . and my approach was the same as it would have been in paper-based cases.”

He did note, however, that “there were fewer problems because [discovery] was computer-based.” The fact that both parties were computer companies meant that they had computerized records, which allowed for a more efficient exchange of documents. He hypothesized that “having all those documents electronically stored and retrievable, allowing immediate access, may have helped to settle the case.”

Form of production; shifting of costs. There were, however, a few problems arising from form of production. The magistrate judge indicated that he “had to intervene a few times” to resolve issues when “electronic stuff had to be printed out and paper things had to be scanned.” Additionally, one request from the defendant necessitated the plaintiff’s changing the format of the data before the defendant could access it. The process was costly, and the magistrate judge said that he required the defendant to pay the costs, since the defendant requested the information.

Privilege; confidentiality. Because of the nature of the case, there were many privileged documents involved. The magistrate judge issued orders to deal with problems as they arose, but he thought that he would have done the same even if the discovery were completely paper-based. He said, “There were some questions about confidential and highly confidential documents, but they were the same issues that would have arisen with paper-based discovery.”

2. Plaintiff’s attorney

Form of production. In general, the plaintiff’s attorney did not have many complaints about the computer-based nature of discovery in this case, but thought that having discovery items in different forms was “the most difficult problem . . . you can’t deal with discovery if half of it is in hard copy and half is in computer-based form.” To remedy this, the plaintiff expended time and money to make sure that everything was in electronic form, but the plaintiff’s attorney was still wary about the process, saying “it was not so reliable that you could treat electronic discovery the same as you would paper discovery, because you knew at the back of your mind that there were always things that were not in the database.” He cautioned, however, that the size of the case permitted him to devote more resources to the discovery phase than usual; he said, “we couldn’t normally do electronic discovery in such detail.”

3. Defendant’s attorney

Form of production. Like the plaintiff’s attorney, the defendant’s attorney identified form of production as the biggest problem associated with discovery, although for a different reason. Much of the information that the plaintiff re-

quested from the defendant was “in huge databases” that “were not designed to do what [the plaintiff] wanted them to do.” Even supplying hard copies of this information was difficult, as there were many steps involved before the data could be printed out. The defendant encountered problems with the magistrate judge with regard to this issue. The defendant’s attorney said, “[T]he magistrate judge had a hard time understanding why [the defendant] couldn’t just print out the information . . . the courts have to understand that the systems are not designed to be printed out and were not designed for litigation.”

Privilege; confidentiality. Confidentiality was another issue that the defendant’s attorney had to address. When the magistrate judge wanted to give the plaintiff permission to search through the defendant’s systems, the defendant’s attorney objected, saying “there are all sorts of trade secrets and privileged information [the plaintiff] could access, and [the defendant] would never allow it.”

d. Role of Civil Rules

The participants had different opinions about the role of the Civil Rules with regard to this case. Although there was no formal Rule 26(f) discovery plan, the magistrate judge reported that both parties “worked out the protocol among themselves for producing documents, and I intervened when there were any disagreements.” This discovery plan did, according to the defendant’s attorney, “vaguely cover computer-based discovery” in the sense that the parties worked out the protocol for electronic discovery issues.

1. Magistrate judge

The magistrate judge reported that, because of the volume of information involved, he played an active role in implementing the discovery plan formulated by the parties and intervened in times of disagreement. He had frequent meetings to keep on top of “any potentially delaying problems,” which resulted in the parties’ attempting to work things out among themselves and avoid appearing before him. He did not believe that the current provisions of the Civil Rules had any effect on how computer-based discovery issues were handled in this case, and he did not think that the rules needed to be changed to accommodate computer-based discovery.

2. Plaintiff’s attorney

Like the magistrate judge, the plaintiff’s attorney believed the current provisions of the Civil Rules neither helped nor hindered the way computer-based discovery issues in this particular case were handled. However, he did believe that the rules should be altered to take the form of production into account. He said, “The most important thing to include in the rule is that the court can require that all discovery should be electronic for cases that are suited for it. . . . It would make things more reliable, and the parties could be more confident that they had a complete set of discovery in electronic form.”

3. Defendant’s attorney

The defendant’s attorney also believed that the Civil Rules should be changed to acknowledge form of production, but in a different way. The rules, he

stated, “should allow the producing party the option of saying what form the information will be produced in, either hard-copy or electronic.” He said that even a “draconian” rule would be helpful to the parties and the judge, because “at least you’d know what you were dealing with. In my experience, judges want something firm to look at.”

4. Case Study #4

a. Summary of case

Case Study #4 was a class action securities case in which the plaintiff shareholders claimed that the defendant computer software manufacturer misled investors and portrayed the company’s financial health as falsely optimistic. Executives of the software company allegedly used non-public information to sell off millions of dollars’ worth of shares, at artificially inflated prices, before the stock began to slide. Shortly after this case was filed in the district court, the Securities and Exchange Commission (SEC) began a parallel investigation into the company’s financial practices. A large part of discovery centered around e-mails exchanged within the company with regard to the preparation of financial statements. The case settled during the discovery phase.

b. Computer-based discovery issues

1. Volume and retrieval of e-mail messages

The primary discovery dispute concerned the volume of e-mail requested by the plaintiffs and the manner in which that e-mail was retrieved from backup tapes of the defendant’s computer system. The parties settled on a complex system that allowed the plaintiffs to review e-mail messages while still protecting the defendant’s privileged documents. The backup tapes containing the e-mail were sent to the plaintiffs’ outside computer consultant, who created a program that printed out the header information from the e-mails. The defendant was given copies of the header information and the actual e-mail messages, and the plaintiffs were given only the printout with the header information. The defendant then produced all of the relevant e-mails, and the plaintiffs used the header information to ensure that everything they requested was being produced.

2. Preservation or spoliation of information on hard drives

In addition to e-mail correspondence, the plaintiffs requested the production of relevant documents from the hard drives of individuals at the defendant’s workplace. Because the defendant’s practice was to wipe clean the hard drives of employees who had left the company, some information was lost. The court had earlier issued a preservation order targeted at that practice, but the defendant argued that the company could not be expected to “freeze” its business by maintaining all the hard drives of people who were no longer in its employ. The magistrate judge sanctioned the defendant for violating the court’s order, and ordered the defendant to pay \$5,000 to the court for failure to obey the order and \$10,000 to the plaintiffs for attorney fees.

3. *Privilege; confidentiality*

Toward the end of the discovery phase, the plaintiffs filed a motion to compel production of e-mail documents that the defendant had listed on its privilege log. Citing the court's previous order that routine distribution of documents to an attorney "does not automatically qualify the documents for protection," the plaintiffs alleged that the e-mail documents were only on the privilege log because carbon copies had been e-mailed to the defendant's general counsel. The magistrate judge ordered that the documents in question be provided to him in camera. After reviewing them, the judge ruled that they were communications for the purposes of obtaining legal advice, and thus did fall under his definition of privileged attorney-client communication.

4. *Use of party-employed experts*

The plaintiffs hired a computer consulting firm to download responsive e-mails from the backup tapes of the defendant's computer system and to provide printouts of the header information to the plaintiffs as a way of ensuring that all responsive documents were produced. According to the plaintiffs' attorney, the process "was very expensive and time-consuming." He did, however, indicate that the cost of using the consultants was justified by the assistance they gave.

The defendant, a computer software company, did not hire outside experts to help with computer-based discovery, but instead relied on in-house computer technicians to help them "figure out options for how to go about getting [responsive] e-mails." The in-house experts were used only at the beginning of the discovery phase; according to the defendant's attorney, as soon as the plaintiffs brought in their computer consulting firm, "they pretty much took over." The defendant's attorney estimated that the use of in-house computer experts did not add significantly to the cost of discovery, but cautioned that "it's hard to quantify cost because they were all in-house."

c. *General observations by participants*

All of the participants indicated that the discovery problems in this case were largely due to the computer-based nature of the information.

1. *Magistrate judge*

Volume and retrieval of e-mail messages. The judge recalled that the volume of e-mail requested was the primary focus of discovery disputes. He said, "it was a fairly broad-ranging request." Because most of the disputed information was "electronically stored and backed up on software that made it not readily accessible at the time of the request," disputes arose over how the information should be accessed. He summarized the discovery problems by saying, "the problem was the e-mail, and it was tough to figure out how to retrieve it and how to make it available to both sides." He said that the plaintiffs bore the greater share of the costs—"not the attorney time costs, but the costs of reducing the pile of data to something more manageable."

2. Plaintiffs' attorney

Volume and retrieval of e-mail messages. Like the magistrate judge, the plaintiffs' attorney identified the sheer volume of e-mail as one of the key problems that arose during discovery. He said, "There was so much e-mail out there, it became a big problem to figure out how to go through it all." Looking back on the case, he would not recommend the process they used to obtain the defendant's e-mail, saying it was "too convoluted."

For the plaintiffs' attorney, the problem of volume of electronic documents was not a new one. He has been involved in many computer-based discovery cases, and he said, "many judges treat computer-based discovery like they would hard-copy discovery . . . but I disagree with that. Judges don't realize that you can't just produce all things electronically as easily as hard-copy documents, which leads to lots of discussions about burden."

Maintenance of information on hard drives. The other issue noted by the plaintiffs' attorney was the missing hard-drive information. He said, "Information on individuals' hard drives is just like hard-copy documents, but companies don't see it that way . . . when a person leaves a job, the computer is wiped clean, whereas paper document files would not be destroyed." In his experience, "information stored on computers is not maintained."

Privilege; confidentiality. Privilege was a concern for both sides with regard to the e-mail messages produced. According to the plaintiffs' attorney, "the issue was how the defendant's e-mail would be produced to use and still protect privilege." Once it had been decided that the outside consultant would provide the header information, the plaintiffs' attorney said there were no problems regarding privilege waiver when the computerized information was produced.

3. Defendant's attorney

Volume and retrieval of e-mail messages. Like the others involved in this case, the defendant's attorney identified the volume of e-mail messages as the primary discovery problem. As she recalled, "there was a large amount of e-mail that was potentially responsive, and the question was, given the volume, how to review and produce that e-mail." She noted that volume was one of the defining characteristics of cases involving computer-based discovery; she said, "you would never have that much information in hard-copy form."

Privilege; confidentiality. The defendant's attorney believes that privilege is always a concern when dealing with large volumes of e-mail. She said, "One way to deal with all the e-mail is to give the other side a dump of all of it, but that raises all sorts of questions of privilege." She said that the manner in which the e-mail messages were screened for this case was effective, and that privilege "wasn't a big problem in this case."

d. Role of Civil Rules

The district in which this case was handled was an opt-out district at the time, and no Rule 26(f) discovery plan was filed. The plaintiffs' attorney suggested that having such a plan would have been beneficial and would have helped "spell things out more clearly," although the defendant's attorney cautioned that the

plan's effectiveness would "depend on how assertive the judge was in enforcing it."

Both the magistrate judge and the plaintiffs' attorney agreed that the explicit inclusion of electronic media in the Civil Rules' definition of "document" was beneficial in this case. As the magistrate judge stated, it is "pretty clear that documents in other forms are covered by the rules, and we don't need a whole lot more detail than that."

The sheer volume of documents available in electronic form raised concerns for attorneys for both sides. The defendant's attorney mentioned that the current provisions of the rules "presume that you will review everything, and in this day, that's just not feasible. There's simply too much information." In her opinion, the rules "need to provide guidelines about parties' obligations to review documents." The plaintiffs' attorney suggested that the rules "should be modified to address volume" of e-mail, in particular. He said that e-mail is so prevalent that "even a small company can have one million e-mails, but that shouldn't relieve [it] of the necessity of producing discovery."

Although the magistrate judge did not see the need for any specific changes to the Civil Rules, he did suggest that a "compendium of what other judges do in situations regarding computer-based discovery" would be quite helpful to him.

5. Case Study #5

a. Summary of case

Case Study #5 was an unfair trade practices case in which the defendant, a large retail chain, was accused of the unauthorized sale of clothing items bearing the trademark of the plaintiff, a clothing manufacturer. Several other manufacturers had joined with the plaintiff in the suit, but agreed to a settlement with the defendant toward the end of discovery, leaving only one manufacturer as a plaintiff. Early in the discovery process, the plaintiffs requested computerized sales records from the defendant, which the defendant's attorney said were no longer available. After almost a year, during which the plaintiffs sought the information in other ways, it was revealed that the records had been available at the time of the original request, but had been routinely destroyed in the interim. The defendant was sanctioned by the court for misleading the plaintiffs about its computer capacity and was ordered to pay the plaintiffs' attorney fees and expenses related to obtaining the computerized sales information. The defendant paid a total of \$109,753.81 to the plaintiffs.

b. Computer-based discovery issues

1. Spoliation of data in the normal course of business

The primary discovery dispute in this case involved the destruction of computerized sales records. At the beginning of the discovery process, the plaintiffs requested that the defendant produce local sales information for the past year to determine whether trademarked goods were being sold in the defendant's stores. Based on information provided by one of the defendant's executives, the defendant's attorney told the court that such records had been routinely destroyed, and only five weeks' worth of sales data could be produced. The plaintiffs then

attempted to obtain the sales information in other ways, including requesting a physical search of existing paper documentation relating to the goods at issue in the case. Over a year into the discovery process, the defendant's attorney reported that, contrary to what he had originally told the court, "some sales information may be available." Ensuing depositions with executives at the defendant's company showed that although the sales information requested by the plaintiffs had been available at the time of the original request, it was no longer available, having been destroyed during the normal course of business in the intervening year. A review of court records indicates that no specific data preservation order was in place at the time the computer records were destroyed.

2. Party-employed computer experts; on-site inspection of computers

After being told that the requested sales information was no longer on the defendant's computer system, the plaintiffs hired a computer expert to determine whether the destroyed records could be retrieved. In an attempt to prevent the expert's on-site search of its system, the defendant offered to provide an employee to testify to the contents of the computer system. This motion was denied by the court, and the plaintiffs' expert conducted an on-site search.

The expert's report stated that the defendant's computer system routinely overwrites data every sixty-five weeks, and that this process "effectively obscures the underlying data." The expert concluded that the information the plaintiffs sought did not exist "on the active, on-line system and there are no backup copies of such data in existence."

c. General observations by participants

[We were unable to speak with either the defendant's attorney or the plaintiffs' attorney in this case.]

1. District judge

The judge indicated that the discovery problems in this case arose largely because the information was computer-based. According to him, "there was a failure [on the part of the defendant's attorney] to acknowledge that the data was computer-based." As a result, the "plaintiff lost the benefit of the computer-based information."

He went on to state that this particular case was "unusual. Most of my cases involve e-mail discovery, and the problems surrounding that," whereas the problems that arose with this case were the result of "outside counsel depending on what he was told" by the defendant.

d. Role of Civil Rules

According to the judge, the Civil Rules regarding computer-based discovery did not have any effect on how discovery issues were handled in this particular case. Additionally, the judge does not believe the rules should be changed, because "they already cover computer-based discovery."

He did, however, suggest that an examination of the rules with regard to e-mail might be profitable. In other cases over which he has presided, he said, e-mail has been "the biggest problem" during the discovery process. He also noted

that because companies have different storage policies for e-mail, it is occasionally necessary to retrieve data from individual hard drives, which can be an “extremely expensive” process. He said that in his experience, “a lot depends on the methodology for retrieval” and how to allocate related costs, and that it “might be helpful to examine the rules with that in mind.”

6. Case Study #6

a. Summary of case

Case Study #6 was a pharmaceutical patent suit in which the plaintiff, a pharmaceutical company, sought a declaratory judgment invalidating a patent held by a major university. The original patent was based on joint research by two scientists employed by the university, one in the United States and one in Sweden. Both scientists were named, along with the university, as codefendants. The case was highly contentious and involved extensive conventional document discovery; over 128 boxes of paper documents were eventually produced. The Swedish scientist initially challenged the court’s jurisdiction over him. Early discovery focused on the large volume of e-mail between the two scientists, which the plaintiff planned to use to establish personal jurisdiction. The jurisdiction question was mooted when the Swedish scientist filed an answer with counterclaims. The parties reached a confidential settlement of the case before trial.

b. Computer-based discovery issues

1. Privacy; confidential nature of personal e-mail

Many of the e-mail messages sought to be discovered in this case contained confidential and potentially embarrassing information and comments, such as negative comments by the scientists about their publisher and discussion of personal health problems. The magistrate judge and attorneys for both sides in this case agreed that there is something fundamentally different about e-mail as a record. Production of the e-mail was resisted by the codefendants, resulting in several objections to production and motions to compel. Some of the objections were based on claims of privilege, which the judge ruled on after in camera review. But most of the resistance was based on the embarrassing language and tone of the e-mails, which could not be easily separated from the relevant substance.

2. Use of U.S.-based electronic data to establish jurisdiction

While there was a significant issue of personal jurisdiction over one of the codefendants, a foreign national, and extensive e-mail discovery played an important part in resolving that issue, this was not an “Internet jurisdiction” case. The use of e-mail and the Internet was not a factor in considering jurisdiction. It was the volume and the content of the e-mail, discovered through a codefendant in the United States, which lent weight to the personal jurisdiction argument.

The e-mail was obtained from the U.S. codefendant, over whom the court had unchallenged personal jurisdiction, which made the expensive and cumbersome document discovery procedures of the Hague Convention unnecessary. The U.S. codefendant’s e-mail messages also contained the messages from the Swedish codefendant, as is often the case when people respond to messages from

each other. Thus, discovery of one codefendant's e-mail effectively served as discovery of the other codefendant's e-mail.

3. *Intensive judicial management of discovery*

The magistrate judge and both attorneys agreed that this was a contentious and hard-fought case. The Rule 16 pretrial conference did not address electronic discovery, because according to the judge, it was too early in the case for senior counsel on either side to be aware of it. When it became apparent that discovery was becoming contentious, the judge instituted regular weekly telephone status conferences. After an initial dispute as to which attorneys on each side were "trial counsel" for the purposes of representing the parties with authority in these status conferences, the conferences helped resolve the disputes and moved the case along.

c. *General observations by participants*

In general, the magistrate judge and counsel in this case believed that the electronic discovery issues did not raise unique problems, and that there were few disputes in the case directly related to the electronic nature of the evidence. The plaintiff's attorney saw nothing unusual about the fact that there was electronic discovery in this case or the procedures that were used to obtain it, in comparison with his overall caseload. "[It was] just a standard discovery situation," he said. "We made [a] motion to compel and we got e-mail discovery." The defendants' attorney stated that electronic discovery issues came up in "100%" of his cases. "In today's . . . corporate world this is an ongoing problem," he said.

1. *Magistrate judge*

Embarrassing nature of e-mail correspondence. In discussing the e-mail messages involved in this case, the magistrate judge said, "I think there's something . . . about the nature of e-mail that makes it significantly different than, say, a fax. It's more like a telephone conversation." She noted that "[t]he e-mail in this case could have forced settlement on the embarrassment value." The judge added, however, that the discovery of e-mail in this case was just one aspect of a larger discovery effort.

The judge attempted to limit the scope of e-mail production by narrowly defining relevance. She said, "What attorneys might see as relevant, you might not. So when they ask for things, I try to get them to tell me why they think it's relevant." Even in the absence of an explicit motion for a protective order, the judge was always mindful of Rule 26(c)'s language regarding protecting a party from "annoyance, embarrassment, [or] oppression."

Use of e-mail to support personal jurisdiction. The volume and content of the e-mail lent support to the argument that the Swedish codefendant had extensive business and personal contacts in the United States. The magistrate judge characterized the codefendants as "e-mail-aholics" who discussed all manner of personal and business matters. In addition, although the judge tried to limit the scope of e-mail production as described above, she noted that the codefendants could not be completely protected from the consequences of their own use of e-

mail in the past. As she put it, “It was personal vitriol that gave rise to personal jurisdiction.”

2. Plaintiff’s attorney

Embarrassing nature of e-mail correspondence. The plaintiff’s attorney noted that “[t]here were some aggressive and embarrassing e-mails that I think [the Swedish codefendant] sent, and that was a problem. I imagine one of the reasons why he didn’t want to turn them over [was] because these things would be incredibly prejudicial to a jury and . . . he wasn’t going to show up at trial. The way a jury would visualize him would be through these e-mails and [they] made him look really bad.”

The plaintiff’s attorney postulated that his opponent faced a difficult challenge to either resist the production of potentially embarrassing e-mail or minimize its effect, but that he would have had the same problem with potentially embarrassing paper documents.

Use of e-mail to support personal jurisdiction. The plaintiff’s attorney commented, “[T]here is no way that you can use the Hague convention especially as applied to Sweden; it was pretty much useless to discover anything including e-mail . . . [B]ut [the Swedish codefendant] couldn’t escape from the e-mails that he sent to the [United States].”

Intensive judicial management of discovery. According to the plaintiff’s attorney, the weekly telephone conferences implemented by the magistrate judge were “a big pain, but [they] turned out to be helpful.”

3. Defendants’ attorney

Embarrassing nature of e-mail correspondence. The defendants’ attorney said, “people use e-mail both as a means to communicate information and as a means to communicate their feelings about certain things that’s very conversational, unlike paper correspondence. [The codefendants in this case] created some correspondence which was a product for potential embarrassment.” He added, “You would see things that showed up in the [e-mail] correspondence that normally no one would ever commit to writing.”

Use of e-mail to support personal jurisdiction. With respect to the use of e-mail to support the court’s jurisdiction over the defendant, the defendants’ attorney said, “I think that there were certain things that were said in those e-mails that may have made a judge more likely to extend jurisdiction.” He added, “If they had exchanged the same information via telephone, I don’t think that a judge would [have been] as likely to extend jurisdiction.”

Intensive judicial management of discovery. The defendants’ attorney characterized the weekly telephone conferences to discuss discovery as “absolutely helpful.”

d. Role of Civil Rules

This case was filed in an “opt out” district and settled before the December 1, 2000, amendments to the Federal Rules of Civil Procedure went into effect. There was no initial disclosure under Rule 26(a) or disclosure conference under Rule 26(f). The parties and magistrate judge agreed that the rules had little effect,

positive or negative, on how this case was conducted and provided little specific guidance.

1. *Magistrate judge*

The magistrate judge who handled discovery in this case believes that an early meet-and-confer requirement with a specific electronic discovery component would have reduced the contentiousness of later discovery. She now routinely asks litigants about electronic discovery early in her cases, as part of the first Rule 16 conference. She also encourages stipulations at that time regarding the form of production, data preservation, and the consequences of inadvertent waiver.

When asked whether the Civil Rules should be changed to accommodate computer-based discovery specifically, she said “perhaps,” and suggested that questions about whether there will be electronic discovery in a case “should be asked under Rule 26(f) or Rule 16.”

2. *Plaintiff’s attorney*

According to the plaintiff’s attorney, electronic discovery is now, and should be, routinely handled under Rules 34 and 26. Rules specifically addressing electronic discovery would add complication, increase costs, and send litigants to state court.

The plaintiff’s attorney stated that electronic discovery under Rule 34 is generally costly and unproductive, and that litigants may be better off developing their case through deposition discovery than “spending tons of money trying to track down e-mails that somebody probably destroyed.” He believes that “you’ve got to increase the number of depositions to way more than ten. I mean it could take you two or three depositions just to get through the computer people to find out what . . . they have.”

3. *Defendants’ attorney*

The defendants’ attorney suggested that an early conference, in which the judge is given explicit powers to “set an appropriate scope for electronic discovery,” might help. According to the defendants’ attorney, the lack of “particularized options and requirements relating to electronic discovery leads to more disputes and therefore hinders the discovery process.”

The defendants’ attorney identified two aspects of electronic discovery, distinct from conventional document discovery, that could be addressed in the Federal Rules of Civil Procedure. The first is that responding parties often lack the technical skills necessary to answer electronic discovery requests. The second is that computer files are large and seldom organized in a way that facilitates efficient searching. The defendants’ attorney said that these two aspects result in an attorney’s “very low level of comfort” with opposing counsel’s ability to produce the requested information. The solution, according to the defendants’ attorney, is to allow for appointment of a neutral discovery referee to conduct searches of the parties’ computer systems. The defendants’ attorney voiced vehement opposition to any special procedures, particularly on-site inspections, for electronic discovery. He said, “I think it would have to be an extreme situation for a judge to al-

low you to go into somebody's computers and look around for relevant documents. It's analogous to getting a court order saying that you can literally invade a company's files with your own people, looking through them all instead of letting them look through their own files." As for the level of discomfort the opposing party might feel, the attorney said, "you never know if you have all the e-mails . . . but you never know if the other side turns over all their documents."

7. Case Study #7

a. Summary of case

Case Study #7 was an unfair trade practices case involving allegations that a salesman who left the plaintiff company (a manufacturer of electrical generating equipment) to join a competitor had misused company computers and data and had stolen proprietary sales information. The defendants were the salesman and his new company. Discovery, both traditional and electronic, was complicated by the sensitive and proprietary nature of the information sought to be discovered. Shortly after the plaintiffs' on-site inspection of the defendants' computers, the case settled.

b. Computer-based discovery issues

1. Screening and proprietary nature of information sought to be discovered

The plaintiff sought detailed sales information—including some that was in computer files—from the defendant and his new company. The defendant claimed that much of this information was proprietary or involved privileged communications, and that the defendant company would be harmed by producing it. The magistrate judge overseeing discovery ordered the defendant to keep a privilege log that listed files he believed were not discoverable and that stated his reasons.

2. On-site inspection of defendants' computers

According to the defendants' attorney, the plaintiff sought "broad access" to the computers of the defendant salesman and his new company. In response to the plaintiff's requests, the magistrate judge allowed an on-site inspection of those computers and issued a detailed order establishing the protocol regarding how that inspection should be carried out (the order is Appendix A to this case study). Under this protocol, the plaintiff and its experts were allowed access to the defendants' computers, and could view all directories and lists of files and restore any deleted directories or files. Before the actual files were viewed, however, the defendants were permitted to contend that certain files contained non-discoverable information, and the plaintiff was denied access to those files during the on-site inspection, subject to a later ruling by the magistrate judge as to the information's discoverability.

Under the protocol, the plaintiff was allowed to copy all files not claimed as privileged, and was "entitled to access codes or other information necessary to fully accomplish the purpose of this order."

The magistrate judge explained that he issued the on-site inspection order because the plaintiff company, according to affidavits attached to its discovery

motions, had inspected its own computers and found evidence that the former employee had compressed some files regarding jobs that he was working on for the plaintiff and sent them to his personal computer. The magistrate judge believed that, based on the affidavits, “there was enough there to justify a search regarding customers he might have taken with him and trade secrets.”

According to the defendants’ attorney, the on-site inspection took place on a Saturday, to minimize disruption to the defendants’ new business. The parties followed the protocol during the on-site inspection, which according to the defendants’ attorney “took a long time.”

3. *Third-party privacy issues*

Although it did not generate a major dispute in this case, one of the computers that was inspected by the plaintiff was the defendant salesman’s home computer, which was also used by his wife. According to the defendants’ attorney, “[the plaintiff] copied things like Christmas card lists and family financial information.”

c. *General observations by participants*

[We were unable to interview the plaintiff’s attorney in this case.]

1. *Magistrate judge who handled discovery disputes*

The magistrate judge who handled discovery in this case said that he would have handled the on-site inspection differently in his order if the same issue arose again. In particular, he has learned since the time of this case that the process of inspecting a computer can alter the information on a computer and lead to possible spoliation problems. Thus, if he believed an on-site inspection was warranted in another case, he would order that a mirror image of the hard drive be created and the inspection done on that, rather than risk having files altered or destroyed as a result of the inspection itself.

2. *Defendants’ attorney*

The defendants’ attorney believed that the on-site inspection was very disruptive to the defendants’ business and that the magistrate judge allowed the plaintiff “free rein” with respect to discovery of computer-based information. She believes there is not enough guidance in the case law to inform judges about the appropriate scope of these computer searches, and she said that the judge “accepted the plaintiff’s saying that, in this day of computers, this is the only way we can test what [the defendants] are saying [about what information is available].” She believed the plaintiff’s inspection of the defendants’ computers was “very heavy-handed and out of proportion.”

Based on this case and others, the defendants’ attorney believes that courts tend to “punt” when a party says it will pay its own expert to go in and look at the other side’s computerized information. According to this attorney, courts see no harm in allowing the inspection if the other side won’t have to pay.

d. Role of Civil Rules

At the time of this case, the district in which it was filed had opted out of Rule 26(a).

1. Magistrate judge

The magistrate judge believed it would have helped to have disclosure in this case and for him to be made aware of the computer issues at an earlier stage. His district has since adopted a local rule that, among other things, requires an initial report from the parties to specify whether there will be computer-based discovery issues in the case (see Appendix B to this case study).

When asked whether rule changes are necessary to accommodate computer-based discovery specifically, the magistrate judge said, “I don’t think so at this point; we need to get further down the road.” He explained that “the considerations have changed, but the framework is still there, balancing need against cost, burden, etc.”

One problem the judge has run into in other cases is a situation in which a company was unable to extract certain computerized information previously, but because of evolving technology is now able to extract it. This raises “the issue of whether they were trying to hide the ball or really couldn’t access it.” Although he does not think rule changes would necessarily help in this situation, he does believe courts “need someone who knows both law and technology” to consult when such problems arise. He did not, however, suggest a specific mechanism through which such an expert could be made available to courts. He said, “We [judges] are all busy, and can’t learn all this [computer] stuff. When parties argue that something will be very expensive (e.g., retrieving archived data) or that something can’t be accessed, we can’t know if they’re telling the truth.”

2. Defendants’ attorney

Based on her experiences in this and other cases, the defendants’ attorney believes it would be useful for the rules to clarify what is meant by “reasonably available” with respect to computer-based information. She explained that “once something’s on your computer, it’s never gone,” but it might take major efforts to recover it. She said that the rules should give guidance (equivalent to the level of guidance that is given for Rule 26(c) protective orders) that is specific regarding how to determine what is “reasonably available” in the realm of computerized information. She added, “There’s got to be some middle ground between business disruption and spoliation problems [and] a party’s need to get information.”

This attorney noted that in many cases, attorneys in her district are able to reach agreements on computer-based discovery issues without involving the court. She explained that she normally produces e-mails in hard-copy form and tells the other side that if they want more (e.g., a computer search), she will ask the court to have them pay for it. In her experience, in employment cases, “they seem to back off at this point,” but in cases involving allegations of trade secret theft or commercial fraud, “people seem to be more willing to pay [for more access].”

e. Appendix A to Case Study #7: Order Establishing Protocol for On-Site Inspection of Defendants' Computers

Issues have arisen regarding Plaintiff's inspection of Defendants' computers under the order of [date], and a teleconference was held [date] to discuss them. Defendants say that allowing a full search as contemplated in that order will allow access to privileged communications as well as to materials the Court has to this point found not discoverable. In response, Plaintiff has filed a letter requesting further discovery and requesting an order to compel Defendants to comply with the Court's previous discovery order. This letter has been docketed as a motion, and Defendants shall have to and including [date] to respond. The parties have set [date] as a date for production and search of Defendants' computers. A further search may be needed, depending upon the Court's ruling on Plaintiff's request for further discovery.

Defendants' counsel stated on the record that the computer used solely by the bookkeeper does not contain any material deemed discoverable at this point. This computer will not be accessed during the search on [date].

Plaintiff shall not access any files containing attorney-client privileged materials. Defendants shall designate those files which they say contain such materials and produce a privilege log complying with Fed. R. Civ. P. 26(b)(5). Of course, Plaintiff shall have the right to challenge the applicability of privilege as to any file so designated.

Plaintiff's counsel and computer expert shall have access to all drives, storage media, etc. upon which any information is stored. They shall be entitled to view all directories or other lists of files so that they may gain an understanding of the organization and location of all files in the computers. They may search for and restore any deleted directories or files. However, should there be specific files, whether existing or restored, which Defendants contend include information ruled non-discoverable, Plaintiff's access to those files shall be denied at this time except as necessary to the restoration process. Defendants shall list withheld files by file name and location and shall prepare a log describing the nature and content of the files in a manner that, without revealing information itself protected, will enable Plaintiff and the Court to determine whether they should be entitled to protection. The Court expects Defendants to act in good faith in so designating files.

Plaintiff shall not access the "___ system" during the search on [date], but the court will further consider its discoverability. This specific file was not discussed in [counsel's] letter of [date], and the Court would benefit from further input from the parties as to its nature and why it should or should not be discoverable.

The intent of this order is to allow Plaintiff the widest access possible at this time and to ensure that Plaintiff learns of all files in existence in the computers and the nature of those files, though it may not have present access to the actual contents of all files at this time. Plaintiff may copy all files falling in the categories set forth in the order of [date], and shall be entitled to access codes or other information necessary to fully accomplish the purpose of this order. The term "files" includes files of all types and is not restricted to data or document files.

... It is so ordered this [date].

f. Appendix B to Case Study #7: Excerpt from Local Rule Adopted by the District After This Case

LOCAL RULE 26.1

OUTLINE FOR FED.R.CIV.P. 26(f) REPORT

The Fed.R.Civ.P. 26(f) report filed with the court must contain the parties' views and proposals regarding the following:

. . .

(4) Whether any party will likely be requested to disclose or produce information from electronic or computer-based media. If so:

(a) whether disclosure or production will be limited to data reasonably available to the parties in the ordinary course of business;

(b) the anticipated scope, cost and time required for disclosure or production of data beyond what is reasonably available to the parties in the ordinary course of business;

(c) the format and media agreed to by the parties for the production of such data as well as agreed procedures for such production;

(d) whether reasonable measures have been taken to preserve potentially discoverable data from alteration or destruction in the ordinary course of business or otherwise;

(e) other problems which the parties anticipate may arise in connection with electronic or computer-based discovery.

8. Case Study #8

a. Summary of case

Case Study #8 was a patent infringement action brought by a manufacturer of bicycle components against a smaller manufacturer. Virtually all of the defendant company's records were computerized. In response to the plaintiff's motion to compel discovery, the court issued an order requiring the defendant to respond fully to the plaintiff's discovery requests, and specified that any responses should be in hard-copy form, even if the data were originally in electronic form. The defendant produced the information in hard-copy form and shortly after this, the case settled.

b. Computer-based discovery issues

1. Claims that defendant was withholding information

In response to the plaintiff's discovery requests, the defendant company produced some computer files but few hard-copy documents. The plaintiff was convinced that the defendant was hiding some relevant information and filed a motion to compel discovery, which was granted by the judge. The defendant's attorney said that his client had produced all relevant information, but because both the plaintiff and the judge did not believe there were so few hard-copy documents maintained by the defendant company, they thought the defendant was trying to hide something. According to the defendant's attorney, "The court didn't understand that these people didn't keep paper records."

2. *On-site inspection of defendant's computers*

The defendant allowed a paralegal representing the plaintiff to have access to its computers, which contained almost all of its relevant files. The defendant's attorney said that an executive of the defendant's company was present at the inspection to "help guide [the plaintiff's representative] through the computer files." According to the defendant's attorney, "We made a good faith effort to give them whatever they wanted—a viewing of the screen, hard copy, electronic media, whatever." The plaintiff, however, claimed that during the on-site inspection, the paralegal was not given access to all relevant computer files and was not permitted to copy files. In addition, a disk provided by the defendant to the plaintiff was unreadable by the plaintiff, and the defendant did not provide a means for reading the disk.

3. *Production of electronic documents in hard-copy form*

After having difficulty obtaining the electronic documents from the defendant, the plaintiff filed a motion to compel discovery. In response, the magistrate judge ordered the defendant to produce all relevant documents in hard-copy form, even if they had originally been in electronic form. He said he did this "out of an abundance of caution," because the defendant had delayed its discovery responses in the beginning and he was concerned the defendant might be trying to hide information that was stored electronically.

In addition to concerns that not all relevant information was being produced, the plaintiff's attorney pointed out that in some instances hard-copy production of electronic files is preferable; "for example, a spreadsheet might be fifteen to twenty feet long, and you can't see it all at once on a computer."

c. *General observations by participants*

1. *Magistrate judge who handled discovery disputes*

The magistrate judge who handled discovery in this case and granted the plaintiff's motion to compel production said that the defendant's computer "was where everything was," noting that this is common in patent cases involving product designs, because virtually everyone uses computer-assisted design software programs these days rather than designing freehand. He believes this reliance on computerized designs will make it easier for companies to destroy relevant information.

When asked whether the problems that arose in this case were due to the computer-based nature of the evidence, the magistrate judge said that "if a party would delay by not giving computerized evidence, it would delay anyway (i.e., even if the information were in hard-copy form)." On the other hand, he said, although the computer-based nature of the evidence did not create problems in this case, owing to the sophistication of the attorneys, "lots of people don't understand computers," and that might make it easier for a party to hide computerized information from the other side.

2. *Plaintiff's attorney*

The plaintiff's attorney said that the defendant company did virtually all of its business on computers, so "when we got the [hard-copy] documents from them, we got almost nothing." He also claimed that "they were definitely hiding the information on their computer; we could tell we had incomplete records." For example, the plaintiff was able to access e-mail messages produced by the defendant, but not attachments that went with them.

The plaintiff's attorney said that the plaintiff did not hire computer consultants, but used in-house information technology (IT) experts, who "talked to the defendant's IT people to make sure we were getting everything." Although the plaintiff did not have to pay a consultant, the plaintiff's attorney noted that it was time-consuming and costly to check the hard-copy documents against the computer system to ensure that all relevant files were being produced.

3. *Defendant's attorney*

According to the defendant's attorney, the fact that the defendant maintained all of its records in computerized form could have made discovery very efficient in this case. He said, "This made it easier to turn over information as it was kept in the ordinary course of business." He added, "I believe in electronic discovery. It's easier to deliver a CD or two than lots of hard-copy documents. If both sides are cooperative, this can be very efficient." However, he said, in this case, "the other side became convinced that we were hiding something, [so] we were ordered to print everything out, which was inefficient." He added that he thinks that "there's a bias among the courts in favor of paper—they distrust computer information," but that "this will change as courts and attorneys get more comfortable with computers."

d. *Role of Civil Rules*

1. *Magistrate judge*

The magistrate judge explained that he "just used [the rules] as they're there," and thinks the traditional rules have been fine in this type of case. According to him, "the handling of computer-based discovery is more for the parties to do; I just handle disputes based on whether a party is trying to comply." He thinks the real problem lies with the sophistication of the attorneys and whether they know what to ask for in the realm of computer-based evidence. In this case, he said, both sides were competent in that respect.

In cases in which the attorneys are not sophisticated regarding computer-based discovery, the magistrate judge thinks the only way to protect them would be to specify more about computer-based information in the rules regarding initial disclosures. He said that perhaps being more explicit in the rules, by specifying that relevant computerized information must be disclosed, would "prevent [parties from] trying to get away with something." According to this judge, "people are looking for ways not to turn over information in the initial disclosures." Rather than revising the rules, however, he believes the best approach would be more education in law school, bar review, and CLE courses on these issues.

Although it was not a major problem in this case, the magistrate judge believes that perhaps more thought should be given in the rules regarding how to handle on-site inspections, especially when privileged information is involved.

2. *Plaintiff's attorney*

According to the plaintiff's attorney, during the on-site inspection "[w]e worked off Rule 34, which was fairly adequate in covering what we needed." Although there was a Rule 26(f) discovery plan in the case, he said, "early on, we didn't know the mother lode was on their computer, so [this type of information] wasn't covered." This attorney believes it would be an "excellent idea" and would "eliminate a lot of delay" to spell out in Rule 26(a)(1)(B) that computer documents are covered and to build this into Rule 26(f).

3. *Defendant's attorney*

When asked about whether the rules need to be changed to accommodate computer-based discovery, the defendant's attorney noted that "it's nice that the rules [already] recognize that computer information is 'documents.'" This attorney believes, although not based on experiences in this case, that it would "make sense" to have a rule that would allow a judge to issue an order very early in a case requiring the parties to preserve or "freeze" electronic data and keep the data in a safe place for later discovery. He said that the order would require "not production, but preservation," and would allow the parties to "argue about it later," without potentially relevant information being destroyed while the lawsuit was pending. While acknowledging that there is nothing in the current rules preventing a judge from issuing a preservation order, he said "this is more the exception now; you have to come in and make a specific request." He believes it would be useful to have a rule that would make this type of order more routine.

9. Case Study #9

a. *Summary of case*

Case Study #9 was a diversity breach of contract case removed from state court. The defendant, a software vendor, had provided a custom software package to the plaintiff, a manufacturer of aircraft components, and the plaintiff claimed the software did not perform as represented by the defendant. Discovery, both conventional and electronic, was extensive. The case went to trial, and the jury returned a verdict in favor of the plaintiff. Some evidence was also presented electronically at trial.

b. *Computer-based discovery issues*

1. *Screening and proprietary nature of information sought to be discovered*

In attempting to establish that the defendant's computer software did not function as intended, the plaintiff sought e-mail and earlier versions of the software as it was being developed. The defendant claimed that producing the requested versions of the software would reveal proprietary information. The judge issued a protective order that allowed the defendant to designate certain items as confidential, subject to challenge by the plaintiff.

2. *Volume and “searchability” of computer-based information*

According to the plaintiff’s attorney, the defendant’s software company had “used a single layman’s term to designate a broad class of products.” In other words, the names of files that were unrelated to the software at issue in this case contained the same term as those relevant to the action. The plaintiff’s attorney indicated that “this made it extremely difficult to determine what was relevant.”

3. *Deletion of data in the ordinary course of business*

Most of the discovery in this case, both traditional and electronic, was focused on the status of the defendant’s design efforts at different times while the custom software was being developed. Thus, the plaintiff sought copies of earlier versions of the software. The defendant, however, had a deletion policy in which only the most recent versions of software were preserved and earlier versions were deleted. The fact that the defendant could not produce earlier versions, however, was not a major source of dispute between the parties.

c. *General observations by participants*

Although the magistrate judge identified this case as one in which disputes over discovery of computer-based evidence (especially e-mail) played a major role, attorneys for both sides, as well as the district judge’s law clerk, did not agree with this assessment. As the plaintiff’s attorney explained, “This was more of a fraud case that happened to have computer-based discovery issues.” The district judge’s law clerk concurred that, although “[the parties] had their squabbles about discovery, I don’t think they really got into the computer-based discovery issues.”¹⁵

The magistrate judge who handled discovery in this case said that, although the same problems would probably have arisen if all the evidence was in hard-copy form, the electronic form of the evidence “might have made it easier to argue; [the electronic form] added another level of argument.” He added that, as an “end user,” it is sometimes difficult for a judge to determine whether to credit parties’ arguments about the accessibility of computer-based information, and that it’s “hard [for judges] to know what can be extracted easily.”

1. *Magistrate judge who handled discovery disputes*

Screening and proprietary nature of information sought to be discovered. The magistrate judge explained that, given the proprietary nature of much of the computer-based information sought to be discovered, it was difficult to determine “how to give them a character [file name] that identified whether the information was discoverable or not.” He added that “you need an expert to explain what it is they’re trying to discover and determine whether it’s relevant.”

Volume and searchability of computer-based information. With respect to the question whether it was difficult to search the defendant’s computer-based information to extract the relevant files, the magistrate judge noted that, because

15. The district judge’s law clerk had assisted him at trial in this case, and the judge referred us to her. Because she did not believe the case involved major computer-based discovery issues and did not remember details about these issues, we did not conduct a complete interview with her.

judges are not computer experts, parties “can hide behind the technology [in their arguments]. They can say [searching and extracting relevant information] will cost hundreds of thousands of dollars. It seems to me that computers should actually make this easier—but I don’t really know.”

2. *Plaintiff’s attorney*

Screening and proprietary nature of information sought to be discovered. According to the plaintiff’s attorney, “there were lots of items [sought to be discovered] that opposing counsel redacted; I thought that, with the protective order in place, he had no right to restrict things this way.” He added, however, that “this issue isn’t a computer-based discovery one; it comes up in myriad cases.”

Volume and searchability of computer-based information. The plaintiff’s attorney noted that when file designations are controlled by the party resisting discovery, as in this case, it is “profoundly difficult” to formulate discovery requests in a limited fashion. He added that “you need a round of depositions or interrogatory answers to get a good understanding of what’s there and minimize the risks that they could play games by [naming files similarly].”

3. *Defendant’s attorney*

Deletion of data in the ordinary course of business. According to the defendant’s attorney, the plaintiff “wanted old copies of software that we didn’t have anymore. Software is always changing, and we can’t keep copies of every version that’s been made. Normally, you just keep the most recent version of software and one other.” This attorney did not think, however, that the other side “thought we weren’t producing things that we had,” so there was not a major dispute about items that had been deleted by the defendant in the ordinary course of business.

d. Role of Civil Rules

The district in which this case was filed had opted in to Rule 26(a), and there was a Rule 26(f) discovery plan in place for the case.

1. *Magistrate judge*

The magistrate judge believed that “the rules provided no definitions or guidance” on the computer-based discovery issues, adding that “we had no experience with this and nothing to go on.” He thinks it would be helpful for the rules to cover computer-based discovery more explicitly, “especially attorney–client or attorney-work-product issues that arise” in the context of computer-based discovery. He said, in particular, it “would help to have rules that anticipate” parties’ arguments about whether certain information is discoverable, and how difficult it is to extract computer-based information, since judges with little computer experience are not in a good position to evaluate such arguments.

The magistrate judge added, “We can all help ourselves by getting someone who knows both legal and computer information to help us understand [these arguments].” When asked whether he thought an expert appointed under Federal Rule of Evidence 706 could be used for these purposes, he said, “I’m not

much for court-appointed experts, but I could see a case down the line where one would be needed.”

2. Plaintiff's attorney

The plaintiff's attorney indicated that he has not seen the application of the rules to computer-based discovery as a major problem, because “so much of the discovery difficulties in this district are anticipated and agreed to by counsel, overseen by strong magistrate judges.” Given the problems with the vague nomenclature used by the defendant for computer files, however, he thought it might be useful to have “an obligation imposed on the party against whom discovery is sought to volunteer this type of information as part of automatic Rule 26 disclosures.”

3. Defendant's attorney

The defendant's attorney said that he “thought the traditional rules worked well [in this case]” and that “the definition of ‘documents’ in the rules was sufficient.”

Based on experience in other cases, this attorney thought it would be useful to have a rule that said “giving a disk to the other side, using a standard format, should be sufficient” for purposes of discovery. He mentioned another case he was working on in which he has “huge files of documents that traditionally [he'd] have to print out somewhere and have Bates numbered.” He thinks a producing party in such a case “should be able to forward an electronic file to the other side and say, ‘Here you go.’” The attorney acknowledged that such production might be possible under the existing rules, but noted that “someone not computer-savvy might balk at getting the documents that way. An explicit rule saying that this form of production is okay would help.”

10. Case Study #10

a. Summary of case

Case Study #10 was a class action suit by a group of hospitals alleging the misallocation of funds by a business insurance company. In addition to extensive conventional discovery, including over one million pages of documents and 100 depositions, the parties sought computer discovery. Most of the disputes regarding computer-based evidence were resolved by the parties and did not require intervention from the magistrate judge. The parties settled the case before trial.

b. Computer-based discovery issues

1. Volume of computer-based documents

As described by the defendant's attorney, “The case involved a substantial amount of accounting records and insurance-related claims information, most of which had been either originally recorded or later stored on electronic media . . . the volume of information standing alone was a problem, given the cost to retrieve it.”

2. *Legacy data; costly data retrieval efforts*

Much of the financial data sought to be discovered by the plaintiffs was stored by the defendant on magnetic tapes and other back-up storage systems. This resulted in logistical problems and extensive costs regarding retrieval of the information.

3. *Data preservation*

Although no formal charges of spoliation were made, the parties raised concerns early in the case about this possibility. After identifying the concerns, the parties agreed to a stipulated data preservation order, which was then entered by the court.

4. *Sharing of costs related to the form of production*

According to a mutual agreement, each party paid the cost of converting available data from the data's existing form to the form in which the party desired them—for example, from one electronic format to another electronic format or to paper copy.

c. *General observations by participants*

According to the magistrate judge who oversaw discovery and to attorneys on both sides, the issues that arose in this case regarding computer-based evidence generally would have arisen even if the same information had been in hard-copy form. In addition, the resolution of disputes regarding computer-based information was mutually agreed upon by the parties without resort to the court.

1. *Magistrate judge who handled discovery disputes*

The magistrate judge who handled the discovery disputes in this case said, "If there is a lesson here, it is that the existing rules can be used successfully if the parties keep good records in the usual course of business and if the amount at stake justifies the expense to search and produce those records. The problems only occur when one of these conditions isn't met." He also indicated that the discovery disputes in this case "related to the contents of the documents rather than the formats of the documents," adding that "the only way that computers might have affected this case that I'm aware of is the amount of data that were available."

2. *Plaintiffs' attorney*

Preservation order. According to the plaintiffs' attorney, "there were allegations of spoliation made early in the case based not on what the defendant had done in this case, but . . . on conduct in other cases. That was relatively quickly resolved by a document preservation agreement."

3. *Defendant's attorney*

Legacy data; costly data retrieval efforts. According to the defendant's attorney, "there was no question" that the computer-based financial and business data sought by the plaintiff class were relevant, so the real issue was how to retrieve the information. As he put it, "The technology changes between the original re-

coding of the information and [the time of discovery] had us working off of different types of databases, [and producing the information] really involved some almost archaeological expeditions in order to figure out how to read and transcribe it” This resulted in increased cost for his client “because of the difficulty of retrieval of the older information and putting it into a usable format.”

Preservation order. The defendant’s attorney indicated that “there were no allegations [of spoliation, but] there were concerns raised early in the case about that possibility, which resulted in a stipulated preservation of evidence order.”

d. Role of Civil Rules

None of the participants (magistrate judge, plaintiffs’ attorney, defendant’s attorney) believed that rule changes would be necessary to handle the types of computer-based discovery issues that arose in this case. The plaintiffs’ attorney did suggest one change, regarding early preservation orders, based on his experiences in another case.

1. Magistrate judge

When asked whether he thought the Civil Rules should be changed to accommodate specifically computer-based discovery, the magistrate judge who handled discovery in this case said, “I’d be really slow to do that . . . I guess that’s a complete answer to your question. I remember thinking for the longest time, starting with law school, that I was impressed with the resilience of the language prepared by the original drafters of the federal rules I’ve been disappointed at the results of the recent efforts to relatively frequently tinker with the rules.”

2. Plaintiffs’ attorney

When asked in the context of this case whether he thought the rules should be changed, the plaintiffs’ attorney said, “I don’t have any particular idea in mind.” He did, however, relate his experience with another case in which there were major spoliation problems. According to the attorney, in that case the opposing party disobeyed court orders, and “we had to have emergency proceedings to have a surprise inspection of the other side’s hard disk.” Based on his experiences in that case, the plaintiffs’ attorney believes it would be useful to have “some type of standing order issued by a court immediately upon the filing [of a case]—a document and data preservation order—that, I think, would make an impression upon parties and their counsel to preserve computer records.” He acknowledged that this type of order could be issued under existing rules.

3. Defendant’s attorney

When asked about the need for rule changes to accommodate computer-based discovery, the defense attorney said, “That’s a good question . . . I think the rules need to be broad enough to allow for just about any kind of development that you can think of I guess the short answer to the question is no, I don’t see an immediate need for changes in the rules to deal specifically with electronic evidence. What I see more is a need for recognition and some education among the judges and lawyers that regularly practice.” He indicated that

this view was based not only on his experiences in this case, but more generally on his overall federal practice experience.

Appendix A: Research Methods

A. *Survey of Magistrate Judges*

In spring 2000, after consulting with Subcommittee members, FJC staff designed a brief questionnaire asking magistrate judges about their experiences with discovery of computer-based information.¹⁶ In addition to asking about the extent of their experience with such discovery and the types of problems they had encountered, the questionnaire asked for the names of cases with computer-based discovery issues that might warrant further attention as case studies. The questionnaire was computerized, and had buttons, text boxes, and drop-down menus for responses. It was placed on a Web page maintained by the FJC (see Appendix B for a copy of the questionnaire).

In May 2000, Tom Hnatowski, Chief of the Magistrate Judges Division of the Administrative Office, provided us with a list of all magistrate judges who subscribed to the division's listserv (428 total), which sends mass mailings of e-mail messages from the division. Although not all magistrate judges subscribe to the listserv, more than 80% do, and that proportion was deemed sufficient for the purposes of this research, particularly since we were not necessarily seeking information representative of the experience of all magistrate judges.

On June 14, 2000, we sent a message via the listserv, from District Judge David Levi and Magistrate Judge John Carroll, asking recipients to visit the Web page and fill out the questionnaire. We received 120 responses to the survey, for a response rate of 28%. Ten of these responses were not subjected to further analysis, either because the judge did not complete the questions in the questionnaire or because the judge had no experience handling discovery disputes of any kind.

Because the low response rate to the Web-based survey made it difficult to interpret the results, particularly with respect to the frequency of magistrate judge experience with computer-based discovery,¹⁷ we sent a one-page follow-up questionnaire to the nonrespondents, asking them why they did not respond. The follow-up survey specifically asked whether one reason for not responding was that the magistrate judge did not have experience with computer-based discovery.

Of the 314 nonresponding magistrate judges who were mailed the follow-up survey, 236 sent it back, for a response rate of 75%. Thus, from both surveys combined, we obtained information about whether they had experience with computer-based discovery from 83% of the magistrate judges who had been sent the original listserv message. For the rest of the substantive questions on the

16. We restricted the survey to magistrate judges because we (and the Subcommittee) believed they would have more experience with computer-based discovery than district judges would and would be more likely to respond to the questionnaire.

17. In particular, we suspected that magistrate judges who had no experience with computer-based discovery might have chosen not to respond to the first questionnaire, causing the results we did receive to overestimate the extent of magistrate judge experience with computer-based discovery.

Web-based survey, we report results from the 28% who completed that questionnaire.

B. Survey of Computer Consultants

In 2001, FJC research staff undertook a survey of consultants in the fields of computer forensics and electronic discovery. The survey solicited general information about the work the consultants had done on behalf of clients involved in federal civil litigation. It asked about the types of cases in which the consultants had been hired and the nature of the computer-based discovery issues they encountered in those cases.

The survey was undertaken in part to solicit more cases for the in-depth case studies, and in part at the behest of the Subcommittee to see if experiences with computer-based discovery issues reported by consultants were similar to those of magistrate judges as reported in response to our magistrate judge survey. The questions were designed to be similar to the questions asked in the magistrate judge survey.

Consultants who work in the area of electronic discovery are not organized in any professional body or trade association, and do not have any authoritative professional certifications or training programs that would help us identify the population as a whole. However, before this survey was contemplated, FJC research staff came into contact with a number of computer consultants while studying the issue of electronic discovery through articles, conferences, and professional networks. The consultants maintained contact with the FJC and each other through an informal but active Internet discussion group called “CFED,” for Computer Forensics and Electronic Discovery.

FJC research staff used the CFED membership list to distribute the survey, which was a simple word-processing questionnaire (see Appendix C). On September 4, 2001, the survey was sent by e-mail to all fifty-seven CFED members on the list at that time, representing thirty-eight consulting firms or agencies. The response to the survey over the next three weeks was poor (only four completed questionnaires were returned), possibly as a result of the intervening events of September 11, 2001. On September 27, the survey was distributed again, resulting in ten additional responses.

Of the total of fourteen responses (representing 25% of the CFED individual membership and 36% of the organizational membership), only ten were usable. Three respondents were CFED members outside of the United States who had no federal case experience, and one respondent did not have access to the information requested. For the ten usable responses, two of the respondents explicitly stated that their answers would be limited, as they operated under confidentiality agreements or court orders preventing them from sharing information. Based on informal discussions with other CFED members, we suspect that others might not have responded for that reason.

C. Case Studies

As mentioned previously, the Subcommittee is interested in a more thorough understanding of how various computer-based discovery issues are manifested in specific cases, rather than their absolute frequency. FJC staff designed a study to look at selected cases illustrating these issues in detail. The study of each case involved reviewing and coding the court files and interviewing the participants (attorneys and judges) who were most involved with the discovery of computer-based evidence in the case.

1. Identification of potential cases for study

We used several methods to identify cases that might be appropriate for more in-depth study:

- The magistrate judge survey asked for nominations of appropriate cases, and fifteen cases were nominated by responding judges.
- We reviewed published case law on the topic, which yielded five possible additional cases.
- At the Brooklyn miniconference sponsored by the Subcommittee in October 2000, we solicited names of cases from the attendees. Although we followed up this solicitation with an e-mail reminder, no suggestions were forthcoming from miniconference participants.
- We asked for nominations from the computer consultants surveyed, and received one additional case.
- We sent letters to several organizations and individuals asking them to help identify possible additional cases. These individuals and organizations included nearly fifty Texas state bar leaders; the Federal Bar Association's Litigation Section; and products liability chairpersons of the following organizations: American Bar Association, Federal Bar Association, American Corporate Counsel Association, Federation of Insurance and Corporate Counsel, Defense Research Institute, and Association of Trial Lawyers of America. None of these organizations nominated a case for study.

Two additional cases were identified from communications with individuals involved in other case-study cases. Altogether, through these various methods, we identified 23 cases for possible in-depth study.

2. Selection criteria

We used the following criteria to ascertain whether an identified case was appropriate for inclusion in the case study:

- The case was closed.
- The judge or judges and most of the attorneys involved were willing to talk with us about the computer-based discovery issues in the case.

- Most or all of the relevant documents from the case file were available to us (i.e., not under protective order or seal).
- Discovery occurred relatively recently, so that participants' memories would be fresh and their files available for reference.

To the extent possible, we also included cases that together represented a range of computer-based discovery issues, case sizes, and geographic locations.

3. Further review of nominated cases

A few of the cases suggested for the case study were clearly inappropriate for further study, as they were not closed or likely to close in the near future, or the attorneys involved were highly unlikely to cooperate in the research. For the remaining cases nominated, we used databases of federal docket records (both Web Pacer and Court Link)¹⁸ to download the dockets for review. In addition, we conducted preliminary interviews with nineteen judges or their representatives about the nominated cases, to glean more information about the appropriateness of the cases for in-depth study. From this further review, we labeled cases as either "Green," "Yellow," or "Red" with respect to their appropriateness for our case study, as defined by the selection criteria set forth above.

Ten cases were identified as "Green," seven as "Yellow," and two as "Red." The "Green" cases generally met our selection criteria, and the judge assigned to the case believed it was worthy of further study and that the attorneys would cooperate. These cases covered a range of case types and computer-based discovery issues of interest to the Subcommittee.

Cases rated "Yellow" or "Red" received that rating either because the discovery in the case was still pending or the judge indicated that the litigation was very contentious and the attorneys probably would not speak with us. If the Committee decides to continue studying the issue of computer-based discovery after the October meeting, we may find that some of the cases originally rated "Yellow" will be available for study (e.g., if a previously pending case closes).

For cases rated "Green," we used information from our preliminary interviews with judges who nominated the cases to determine which attorneys and judges would have knowledge of the computer-based discovery problems that arose in the case. We then sent a letter to each potential interviewee, describing the study to them and asking for their participation in a brief telephone interview. The letter also informed them that "[i]n our report to the Advisory Committee on Civil Rules, the case will be identified only by a number, the parties will be identified only as 'plaintiff' or 'defendant,' and your name will not be mentioned or associated with any answers you give. While it may be possible for a reader who is familiar with the facts to deduce the name of the case and the parties involved, we will make every effort to keep the identities confidential." In most cases, except as noted in the individual case studies, we were able to interview by telephone the judge overseeing discovery and at least one attorney from each side.

18. Web Pacer is the official docket, as posted on the courts' Internet server. Court Link, previously called Marketspan, is a commercial database derived from Pacer data supplied by the courts.

Appendix B: Survey of United States Magistrate Judges

[Authors' note: Because the survey instrument was created in Lotus Notes and administered via the World Wide Web, this transcript does not capture the layout or functionality of the original. Buttons, drop-down menus, and text boxes have been eliminated. All text has been transcribed in full.]

Federal Judicial Center Research Division Survey of United States Magistrate Judges on Experiences with Discovery of Computer-Based Evidence

Thank you for participating in the Federal Judicial Center's survey on magistrate judges' experiences with discovery of computer-based evidence.

For purposes of this survey, "computer-based evidence" means information that was originally created on computers, such as e-mail, word-processed documents, business transaction data, etc.; or evidence that is currently stored on computers or computer-readable media, such as digital images of paper documents, digital voice or video recordings, etc.; or evidence that is best presented or manipulated on computers, such as animations, scientific models, financial databases, etc.

At the end of the questionnaire, you will be given an opportunity to provide open-ended comments about the topic.

1. In the past two years (since June 1998), have you been called upon to resolve disputes affecting discovery of any kind (not limited to computer-based discovery) in civil cases?

Please select one.

No; I do not handle discovery disputes.

Yes; I have had at least one civil case in which I have been asked to handle a discovery dispute.

In approximately how many cases has this occurred in the past two years?

If "No," please skip to Question #7.

2. In the past two years (since June 1998), have you had any civil cases in which an issue connected to the discovery of computer-based evidence was brought to your attention for action on your part?

Please select one.

No; I handle some discovery disputes but have not had any issues involving discovery of computer-based evidence in the past two years.

Yes; I have had at least one civil case in which such an issue was brought to my attention.

In approximately how many cases has this occurred in the past two years?

If "No," please skip to Question #7.

3. Please indicate in how many cases of each of the following case types discovery of computer-based evidence has been brought to your attention in the past two years. For example, if you have handled two antitrust cases in which such issues were raised, select the number “2” next to “Antitrust.” Please select a number for each case type, even if that number is zero:

- Products liability
- Employment—Class action
- Employment—Individual plaintiff
- Antitrust
- Construction litigation
- General commercial litigation
- Securities litigation
- Patent/Copyright
- Other. Please specify:

4. Of the cases you indicated in response to Question #2 (i.e., cases in which you have been made aware of discovery of computer-based evidence), in how many have the following occurred? Please enter a number next to each item, even if that number is zero:

- Issuance of preservation order forbidding deletion of e-mail or other computer-based information
- Alleged spoliation (intentional or inadvertent destruction of evidence) of computer-based information by one or more parties
- On-site inspection of a party’s computer system by an opposing party
- Hiring of computer experts by one or more parties
- Problems regarding privilege waiver when computerized information was produced
- Sharing of the costs required to retrieve computerized information between the party requesting the information and the respondent
- Sharing of costs resulting from the format for production (e.g., requests to produce in hard copy as well as electronic form)
- Substantially increased efficiency in discovery due to the computer-based nature of the information

5. Have you issued any orders that specify procedures or standards for discovery of computer-based evidence in a particular case that you would be willing to share with us? If so, please briefly describe the nature of the order(s).

6. Have you issued any standing orders that specify procedures or standards for discovery of computer-based evidence that you would be willing to share with us? If so, please briefly describe the nature of the order(s).

7. Does your district have any local rules or standing orders that specify procedures or standards for discovery of computer-based evidence? If so, please briefly describe the nature of the rules (with citations, if possible) or orders.

8. Are you aware of a case or cases in your district involving discovery of computer-based evidence that you think would be a good candidate for an in-depth case study by the Federal Judicial Center?

We are interested in cases in which discovery of computer-based information was handled well by the attorneys, and cases in which problems related to computer-based discovery occurred and may not have been handled as well, or cases in which experiences were mixed. In addition, it would be particularly useful if the case was terminated relatively recently, and if the judge(s) and the attorneys involved would likely be willing to respond to further inquiries about the case. We wish to include cases with magistrate judge activity as well as cases in which the district judge chose not to delegate discovery management to a magistrate judge.

No; I am not aware of such a case.

Yes; I am aware of a case or cases that I think would be appropriate for a case study.

If Yes, please provide the name and docket number of the case(s):

(1) Case Name:

Docket Number:

(2) Case Name:

Docket Number:

(3) Case Name:

Docket Number:

9. Would you be willing to be contacted by an FJC staff member for further inquiry about your experiences with discovery of computer-based evidence?

Please select one.

Yes

No

Not applicable

10. Your Name: (required)

11. Your District:

Please note that your name and district information will be used only to determine the response rate to the survey and follow up with those who indicate a willingness to be contacted. If you do not wish to provide your name, please enter the numerical judge ID code assigned to you by the Administrative Office of the U.S. Courts.

12. If you wish to add any additional experiences or ideas from which you think the Advisory Committee might benefit as it studies issues related to discovery of computer-based evidence, please provide them here:

Thank you for your participation. Your responses will be very helpful to the Federal Judicial Center and the Discovery Subcommittee of the Advisory Committee on Civil Rules. If you have identified a case for study, or orders that you have issued and would be willing to share, we will follow up with you shortly. If you have any questions about the survey, please contact Ken Withers (202-502-4065, kwithers@fjc.gov) or Molly Johnson (315-824-4945, mjohnson@fjc.gov).

Appendix C: Survey of Computer Consultants

Electronic Discovery and Computer Forensics Experts and Consultants Survey

Name:

Organization:

On whose behalf are you responding? Please check one:

myself

my organization

PART ONE

1. In approximately how many **civil** cases per year are you retained by counsel or a court to consult or assist with computer-based discovery? _____

2. Approximately what percentage of these cases are in U.S. federal courts?

If you have not worked on any federal civil cases,
please stop here and return this questionnaire in the enclosed envelope.

3. In the past two years (since September 1999), approximately how many **federal** cases have you worked on in each of the following legal areas? *Please write a number next to each case type, even if that number is "0."*

Products liability

Employment—Class action

Employment—Individual

Antitrust

Construction litigation

General commercial litigation

Securities litigation

Patent/Copyright

Other (please specify):

4. In approximately how many of your **federal civil** cases in the past two years (since September 1999) have any of the following situations arisen? *Please write a number next to each situation, even if that number is "0."*

An effort by one party to limit or prevent deletion of e-mail or other computer-based information by another party, pending discovery

An *ex parte* order from the court forbidding deletion of e-mail or other computer-based information by the other party, pending discovery

___ A request that the court impose sanctions on a party for alleged misconduct in discovery of computerized information

___ Alleged spoliation (intentional or inadvertent destruction of evidence) of computer-based information by one or more parties

___ A demand for on-site inspection of a party's computer system by an opposing party

___ Problems regarding the inadvertent disclosure or production of privileged computerized information

___ An offer or demand to share the costs required to locate and retrieve computerized information (e.g., restoration of backup tapes or development of special search programming)

___ An offer or demand to share the costs of production (e.g., production of information in hard-copy form or a particular data format)

___ An order from the court requiring that the party seeking production of computer data pay all or part of the costs of production

5. Are there any problems related to the discovery of computer-based information that you have frequently encountered, but are not mentioned in the above list? If so, please describe:

PART TWO

We would like your help in identifying federal civil cases involving the discovery of computer-based evidence that might be appropriate for inclusion in our in-depth case study project. We are interested in knowing about any case in which discovery of computer-based information played a significant role. In our study, we obtain and analyze all the court documents regarding discovery available to the public, and conduct interviews with the judge and with counsel for both sides. The goal is to shed light on whether the rules of procedure and the case management tools available were fair and adequate to deal with the electronic discovery issues raised, or whether new procedures should be considered. Members of the Advisory Committee have expressed particular interest in looking at:

- product liability cases involving significant computer-based discovery,
- cases in which the judge considered or imposed sanctions for the withholding, mishandling, or destruction of computer data subject to discovery, and
- sample agreements, procedures, or protocols agreed to by the parties or ordered by the court for the conduct of computer-based discovery (whether or not the particular litigation is appropriate for the case study project).

If you are aware of any case(s) that might be appropriate for our case study, please provide the information requested below. If you wish, we will not identify you as the person who suggested this case for study.

1. Case name:
2. Court (federal district):

3. Approximate filing date:
4. Any comment on why you believe this case should be studied:

Please check one:

- I do not wish to be identified as having suggested this case
 I do not mind being identified as having suggested this case
(You may nominate multiple cases, if you wish.)

Thank you for your time.

Please return your completed questionnaire in the enclosed envelope to:

Kenneth J. Withers
Research Associate
Federal Judicial Center
One Columbus Circle NE
Washington DC 20002-8003