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# ELECTRONICALLY STORED EVIDENCE: ANSWERS TO SOME RECURRING QUESTIONS CONCERNING PRETRIAL DISCOVERY AND TRIAL USAGE†

RICHARD ALLAN HORNING\*

The use of increasingly sophisticated and complex electronic data processing systems for business information storage and management is widespread. Computers, relying as they do on "invisible" electronic impulses contained in compact storage devices such as tape drives, disk drives, and "bubble memories," are rapidly overtaking filing cabinets as the chief repositories for business statistics and vital business information. As long ago as 1973 the Missouri Supreme Court observed that "[i]t is common knowledge, which a court need not ignore, that computerized record keeping is rapidly becoming a normal procedure in the business world."<sup>1</sup> According to a recent article in *Business Week*, sales of computer hardware in the United States have risen from \$12 billion in 1979 to an estimated \$32 billion in 1984, while sales of computer software packages have risen from \$200 million to an estimated \$10 billion in the same period.<sup>2</sup> In this environment it is not surprising that electronically stored evidence might be involved in even garden-variety business litigation.

Consider a hypothetical case involving ABA Distributors, a plumbing products distributor, which asserts breach of contract claims against a supplier named Round-The-Bend.<sup>3</sup> ABA Distributors has annual gross sales of all products of \$150 million. ABA Distributors uses order entry computer terminals at its four sales offices to process sales orders received at those branch

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1. See *Union Elec. Co. v. Mansion House Center N. Redev. Co.*, 494 S.W.2d 309, 315 (Mo. Sup. Ct. 1973).

2. *Software: The New Driving Force*, BUS. WK., Feb. 27, 1984, at 74-75.

3. This hypothetical was developed for use in connection with a program presented at the American Bar Association Litigation Section Fall meeting in Chicago, Illinois in November of 1982. The author of this article was one of the panelists on the program and participated in the development of this hypothetical. The program outline and resource materials were published by the American Bar Association Litigation Section. See *The Discovery and Use of Computer Based Evidence*, (A. Silverman ed. 1982) (handout distributed at Fall 1982 ABA Litigation Section meeting) [hereinafter cited as ABA COMPUTER EVIDENCE PROGRAM]. An audio tape of the program presentation and panel discussion is available from the American Bar Association, Chicago, Illinois.

offices.<sup>4</sup> The remotely located terminals are linked telephonically via a modem to ABA's mainframe computer housed at ABA's headquarters. The order entry terminals print out an invoice furnished to ABA's customers showing ABA's product number (which is coded to yield the identity of ABA's supplier), units sold, sales price, total purchase price, sales tax computation, shipped to an billed to data, and other pertinent information. The sales data input by the sales clerk into the remote terminal is electronically stored in the terminal for subsequent transmission over the telephone lines to ABA's mainframe. The back-up paper copies ("hard copies") of the sales invoices are filed away for temporary reference at the branch office and are later sent to ABA's headquarters for audit use and permanent storage. The electronically captured sales data transmitted to ABA's mainframe is stored on hard disk (with daily tape back-up) until the end of the current accounting period, at which point it is transferred to magnetic tape. The data stored on hard disk and on magnetic tape is accessed and manipulated periodically by ABA's computer staff to generate printouts containing periodic sales data, product reordering information, budget versus actual comparisons, short term profit projections, and similar business statistics. The sales data is also integrated into ABA's financial reporting system.

ABA's supplier, Round-The-Bend, allegedly breached its distributorship agreement with ABA by appointing a second distributor in ABA's otherwise exclusive area. Counsel for Round-The-Bend anticipates that at trial ABA will attempt to prove its damages by offering first, a series of computer printouts, generated on a quarterly basis from 1975 to September 1982, to prove ABA's historic sales of Round-The-Bend's product; second, a second set of computer printouts containing projections of lost future sales of Round-The-Bend products and the profits which would have been realized therefrom through 1990, generated from ABA's historic sales data by a special regression analysis program developed by ABA's data processing manager, Ms. Joyce Davenport; and third, testimony by the president of ABA, Mr. Hardly Everwright, that the computer printouts generated by Ms. Davenport's special program measure ABA's damages.

The ABA hypothetical presents a situation where pretrial discovery of both the hard copy of ABA's sales records and the electronically stored sales data is essential if Round-The-Bend's counsel is to challenge effectively the admissibility and accuracy of the computer printouts. Counsel for Round-The-Bend will also need access to ABA's sales information, profit and loss data, budgets, sales projections, and ABA's computer programs (including Ms. Davenport's special program) in order to prepare alternate damage

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4. For a description of the workings of ABA's computer system and of the components of computer hardware and software which make up ABA's computer system, see C. Christy, Introduction to a Business Computer System, in ABA COMPUTER EVIDENCE PROGRAM, *supra* note 3. See generally Singer, *Proposed Changes to the Federal Rules of Evidence as Applied to Computer-Generated Evidence*, 7 J. COMPUTER TECH. L. 157 (1979).

studies and effectively cross-examine Mr. Everwright on the damage issue.

Several questions will occur immediately to Round-The-Bend's counsel. Are the tapes and disk containing the electronically stored sales data discoverable in addition to hard copies of the invoices containing the same information? To what extent can Round-The-Bend's counsel secure court-ordered assistance from ABA in understanding ABA's computer programs, identifying the pertinent data, and manipulating the electronically stored information? If ABA produces the sales data in hard copy, will a court order ABA to furnish the same information in electronic form to Round-The-Bend's counsel upon appropriate motion? Will the court allow Round-The-Bend's counsel to obtain discovery of the details of Ms. Davenport's special computer program and supporting documentation even though Ms. Davenport will not be a trial witness? Are the printouts admissible and is so, what are the standards for their admissibility? If counsel for Round-The-Bend or ABA includes the sales data in a litigation support computer system, is opposing counsel entitled to discovery access to that litigation support system? This article will focus on these questions, which recur in business litigation involving electronically stored evidence.

#### DISCOVERABILITY OF ELECTRONICALLY STORED INFORMATION

Before 1970 it was unclear whether records stored in electronic media, such as the magnetic tapes and hard disks containing ABA's sales data, were subject to the production requirements of the discovery rules.<sup>5</sup> Rule 34 of the Federal Rules of Civil Procedure was amended in 1970 to make it clear that electronically stored information fell within the ambit of Rule 34's production and inspection procedures.<sup>6</sup> The Rule now explicitly allows discovery of "data compilations from which information can be obtained, and translated if necessary, by the respondent through detection devices into reasonably usable form."<sup>7</sup>

Statutes dealing with recording keeping and governmental inspection of records have also been interpreted as covering electronically stored data. In *United States v. Davey*<sup>8</sup> the Internal Revenue Service (IRS) served a summons

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5. *United States v. Davey*, 543 F.2d 996, 999 (2d Cir. 1976) (court found no authority prior to amendment of Rule 34 of Federal Rules of Civil Procedure holding that computer tapes were not discoverable under Rule 34), *modifying* 404 F. Supp. 1283 (S.D.N.Y. 1975).

6. FED. R. CIV. P. 34(a). The Advisory Committee specifically noted that "the inclusive description of 'documents' is revised to accord with changing technology. [The amended Rule] makes clear that Rule 34 applies to electronic data compilations from which information can be obtained only with the use of detection devices. . . ." FED. R. CIV. P. 34(a) advisory committee note, *reprinted in* 48 F.R.D. 487, 527 (1970) [hereinafter cited as 1970 Advisory Committee Statement] In *United States v. Davey*, the Second Circuit stated that the 1970 amendment to Rule 34 "was merely intended to clarify the scope of the Rule, not to change it." *United States v. Davey*, 543 F.2d 996, 999 (2d Cir. 1976).

7. FED. R. CIV. P. 34(a).

8. 404 F. Supp. 1283 (S.D.N.Y. 1975), *modified*, 543 F.2d 996 (2d Cir. 1976).

on Davey compelling Davey, as Secretary of Continental Corporation, to produce "[a]ll Machine-Sensible Data Media used for recording, consolidating or summarizing accounting or financial transactions and records in respect of general expenses and losses expended or incurred during the years 1971 and 1972, including but not limited to Magnetic Tape number 110101 and Magnetic Tape number 421001, for each year respectively."<sup>9</sup> Continental refused to furnish the tapes, offering instead printouts of the contents of the specified tapes.<sup>10</sup> Although the district court ruled that the IRS was entitled to the tapes themselves in response to the summons, the court allowed access only to copies of the tapes, and issued a protective order allowing Continental to retain the originals.<sup>11</sup> The district court compelled Continental to create copies of the responsive tapes under the supervision of the IRS, and required the IRS to bear the cost of producing the copies.<sup>12</sup> On cross-appeals, the Second Circuit ordered the original tapes turned over to the Internal Revenue Service and voided the cost reimbursement portion of the lower court's order.<sup>13</sup> Continental argued on appeal that section 7602 of the Internal Revenue Code<sup>14</sup> covered only visible and legible records, and not information stored on computer tape.<sup>15</sup> The *Davey* court pointed out that section 7602 placed no limitations on the form or medium in which the records were kept, and that "[i]n this era of developing information-storage technology there is no conceivable reason to adopt a construction that would immunize companies with computer-based record-keeping systems from IRS scrutiny."<sup>16</sup>

Pursuant to Rule 34, a discovering party such as Round-The-Bend can seek production of magnetic disks, magnetic tapes, or other media which contain sales data.<sup>17</sup> Out of an abundance of caution, Round-The-Bend's counsel

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9. *Id.* at 1283-84.

10. *Id.* at 1284.

11. *Id.* at 1284-85.

12. *Id.* at 1285.

13. 543 F.2d at 1000-01.

14. Section 7602(a)(1) of the Internal Revenue Code allows the Internal Revenue Service to compel production of "any books, papers, records and other data which may be relevant or material. . ." I.R.C. § 7602(a)(1); see 543 F.2d at 999 (discussing I.R.C. § 7602(a)(1)).

15. 543 F.2d at 999.

16. *Id.* Discovery of electronically stored information from non-parties can be obtained by having a subpoena duces tecum, issued pursuant to Rule 45(b) of the Federal Rules of Civil Procedure, served on the possessors of the information. See, e.g., *In re Franklin Nat'l. Bank Securities Litig.*, 574 F.2d 662 (2d Cir. 1978), modified, 599 F.2d 1109 (2d Cir. 1979); see also MANUAL FOR COMPLEX LITIGATION (CCH) § 2.715 (1977), at 74 [hereinafter cited as MANUAL].

17. The MANUAL states that:

[i]n the computer context, the basic types of machine records commonly utilized include: (1) punched cards; (2) paper and magnetic tapes; and (3) a variety of other machine-oriented components which record and store data. In the absence of special considerations such as privilege, work product immunity, or the presence of industrial or trade secrets in the machine-readable computerized data (including computerized analyses), any of the above-mentioned forms should be freely discoverable. If the discovering party has data processing equipment that is compatible with that of the owner of the computer records, delivery of the machine-readable version of the information,

might use an expensive definition of the term "document" in the preface to a Rule 34 document demand to cover any possible ambiguity in the Rule and request production of data sheets, punched cards, magnetic tapes, plotter-output recordings, data discs, data cards, data processing files, data compilations from which information can be obtained and translated, and other computer-readable records. Round-The-Bend's counsel might also specifically direct that the electronic media, rather than the hard copy, be produced. The use of such definitions and instructions is a common practice that has met with repeated judicial approval.<sup>18</sup>

#### COURT ORDERED ASSISTANCE IN CONNECTION WITH THE DISCOVERY OF ELECTRONICALLY STORED DATA

It is clear from the Advisory Committee's 1970 comments on the amendment to Rule 34 that a court may require ABA to assist Round-The-Bend by compelling ABA to translate the electronically stored data into a "reasonably usable" format, such as the now all-too-familiar "green bar" computer printout, for Round-The-Bend's perusal.<sup>19</sup> If Round-The-Bend desires to obtain the magnetic media containing ABA's sales data and ABA resists, Round-The-Bend should be entitled to a court order compelling production of the magnetic media containing ABA's sales records. As the district court noted to *Adams v. Dan River Mills, Inc.*,<sup>20</sup> there is no reason why documents of this nature should not be subject to discovery.<sup>21</sup>

If Round-The-Bend has data processing equipment that is capable of "translating" the magnetically stored data into reasonably usable form and is thoroughly conversant with ABA's data processing system, computer programming techniques, and data processing conventions, Round-The-Bend may not require anything from ABA beyond an electronically duplicated copy of the contents of the storage medium itself. Mere production of the magnetic medium will not, however, satisfy a Rule 34 request when Round-The-Bend is unable to readily use the machine-readable version of the information. In such circumstances, Round-The-Bend should seek to have the court compel

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or a copy thereof, will often be sufficient. When the discovering party's equipment is not compatible, or he has no computer equipment, delivery of a printout of the machine-readable records may provide a reasonable alternative mode of discovery.

MANUAL, *supra* note 16, § 2.715, at 74-75.

18. See, e.g., *Diversified Products Corp. v. Sports Center Co.*, 42 F.R.D. 3 (D. Md. 1967).

19. See 1970 Advisory Committee Statement, *supra* note 6, at 527.

[W]hen the data can as a practical matter be made usable by the discovering party only through respondent's devices, respondent may be required to use his devices to translate the data into usable form. In many instances, this means that respondent will have to supply a printout of computer data.

*Id.*

20. 54 F.R.D. 220 (W.D. Va. 1972).

21. *Id.* at 22; see also, e.g., *Dunn v. Midwestern Indemnity*, 88 F.R.D. 191 (S.D. Ohio 1980).

ABA to furnish further information and assistance. A number of courts have been amenable to such requests.

In *Greyhound Computer Corp. v. IBM*<sup>22</sup> plaintiff Greyhound received responses to interrogatories stating that source materials containing information responsive to the interrogatories were located at several of defendant IBM's plants.<sup>23</sup> IBM invited counsel for Greyhound to review these source materials at the various plants.<sup>24</sup> Greyhound's counsel accepted the offer and was ushered into a room, where he was overwhelmed by thousands of documents.<sup>25</sup> On Greyhound's motion to compel an additional response by IBM, the court ordered IBM to provide someone familiar with the material to guide and assist the plaintiff or its representatives in discovering the answers it desired, and to furnish to the plaintiff such printouts and any typed information which would aid in securing the answers.<sup>26</sup>

In the *Japanese Electronic Products Antitrust Litigation*<sup>27</sup> the defendants sought discovery of computer tapes containing sales information respecting the products there at issue.<sup>28</sup> The district court required the plaintiff to prepare a tape of the electronically stored information for the defendants' use in analyzing the plaintiff's sales.<sup>29</sup> In order to perform that task, the plaintiff had to develop a program to extract and print the data requested on magnetic tape.<sup>30</sup> The plaintiff was also required to produce record format information so that the defendants could program their computer system to read the information stored on the computer tape which the district court ordered the plaintiff to produce.<sup>31</sup>

It is apparent from decisions such as *Greyhound* and *Japanese Electronic Products Antitrust Litigation* that a court should be receptive to a motion compelling ABA to assist Round-The-Bend in interpreting the electronically stored data and understanding ABA's computer programs and programming techniques. In appropriate circumstances this assistance could take the form of an order that ABA produce information concerning the record formatting

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22. 3 Computer L. Serv. Rep. 138 (D. Minn. 1971).

23. *Id.* at 139.

24. *Id.*

25. *Id.*

26. *Id.* at 139; see also, e.g., *Saddler v. Musicland-Pickwick Int'l, Inc.*, 31 Fed. R. Serv. 2d 760 (E.D. Tex. 1980). In *SCM v. Xerox Corp.*, plaintiff SCM sought more detailed responses to interrogatories concerning Xerox's patents, patent applications, and license agreements. *SCM Corp. v. Xerox Corp.*, 1975-2 Trade Cas. (CCH) ¶ 60,484, at 67,149 (D. Conn. 1975). The court directed Xerox to identify the specific documents that contained the information SCM sought, but noted that it was up to SCM to "abstract and categorize" whatever detail SCM thought would be useful to its case. *Id.* at 67,149.

27. *Nat'l. Union Elec. Corp. v. Matsushita Elec. Indus. Co.*, 494 F. Supp. 1257 (E.D. Pa. 1980).

28. *Id.* at 1258.

29. *Id.* at 1261-63.

30. *Id.* at 1262.

31. *Id.*

conventions and computer programming techniques adopted by ABA in capturing and processing the sales data,<sup>32</sup> produce a tape containing the pertinent data concerning the sale of Round-The-Bend's products by ABA,<sup>33</sup> and designate an employee, possibly Ms. Davenport, to answer questions concerning the proper use and interpretation of the computer programs and electronic data.<sup>34</sup> A court might also permit Round-The-Bend to discover the capabilities, capacities, and data processing techniques used by ABA in connection with ABA's data processing operation.<sup>35</sup> As the *Manual for Complex Litigation* observes:

[i]n many instances it will be essential for the discovering party to know the underlying theory and the procedures employed in preparing and storing the machine-readable records. When this is true, litigants should be allowed to discover any material relating to the record holder's computer hardware, the programming techniques employed in connection with the relevant data, the principles governing the structure of the stored data, and the operation of the data processing system. When statistical analyses have been developed from more traditional records with the assistance of computer techniques, the underlying data used to compose the statistical computer input, the methods used to select, categorize, and evaluate the data for analysis, and all of the computer outputs normally are proper subjects for discovery.<sup>36</sup>

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32. See *Pearl Brewing Co. v. Joseph Schlitz Brewing Co.*, 415 F. Supp. 1122 (S.D. Tex. 1976) (court ordered plaintiffs to deliver entire system documentation to defendants); *United States v. Int'l. Business Mach. Corp.*, 76 F.R.D. 97 (S.D.N.Y. 1977) (court ordered IBM to produce extensive system documentation and appointed examiner to assist in process). The documentation that a discovering party might need to understand and interpret the computer programs and data stored on a respondent's computer system include source documents, operations manuals, record format layouts, systems flow charts, program instructions, printout format instructions, and user's manuals. See R. Pott, *Discovery of Computer Evidence: Drafting a Subpoena*, in ABA COMPUTER EVIDENCE PROGRAM, *supra* note 3 (1982); T. Edwald, *Discovery and the Computer*, in USE OF COMPUTERS IN LITIGATION (J.H. Young, M.E. Kris & H.D. Trainor eds. 1981).

33. For a discussion of how a corporation might extract specific sales information from a mass of general sales records, see Singer, *Proposed Changes to the Federal Rules of Evidence as Applied to Computer-Generated Evidence*, 7 J. COMPUTER TECH. L. 157, 161-63 (1979).

34. See Pretrial Order No. 4, Paragraphs 21-25, *In re Data General Antitrust Litigation*, MDL Docket No. 369 (N.D. Cal. Apr. 23, 1979), reprinted in FEDERAL DISCOVERY IN COMPLEX CIVIL CASES 159-67 (Law Journal-Seminars Press 1980); see also *Bell v. Automobile Club of Michigan*, 80 F.R.D. 228 (E.D. Mich. 1978), appeal *dim'd*, 601 F.2d 587 (6th Cir.), cert. denied, 442 U.S. 918 (1979); *United States v. Int'l. Business Mach. Corp.*, 76 F.R.D. 97 (S.D.N.Y. 1977).

35. See *Dunn v. Midwestern Indemnity*, 88 F.R.D. 191 (S.D. Ohio 1980) (court held plaintiffs entitled to discovery of identity of defendants' computer equipment, raw data input into computer system, programs defendants used in processing data, and data management systems used to control data processing functions); see also Pretrial Order No. 4, Paragraphs 21-25, *In re Data General Antitrust Litigation*, MDL Docket No. 369 (N.D. Cal. Apr. 23, 1979), reprinted in FEDERAL DISCOVERY IN COMPLEX CIVIL CASES 159-67 (Law Journal-Seminars Press 1980).

36. MANUAL, *supra* note 16, § 2.715, at 75.



Faced with requests for assistance in interpreting electronically stored data, other courts have ordered respondents to not only locate and produce "computerized" information, but also to analyze the information on their own computers for the discovering party's benefit. In *Lodge 743, International Ass'n of Machinists v. United Aircraft Corp.*<sup>37</sup> the defendant responded to certain interrogatories by delivering to the plaintiff 450 pounds of documents containing 120,000 selected individual personnel records.<sup>38</sup> Despite the defendant's representation that answering the interrogatories would be a herculean task that the defendant's data processing equipment could not handle, the *Lodge 743* court ordered the defendant to analyze the records at its own expense "in accordance with the electronic analytical procedures defendant's counsel represented to the Court on the record in prior hearings would be necessary to accomplish the assemblage of the data required."<sup>39</sup> In *Williams v. Owens-Illinois, Inc.*,<sup>40</sup> a race and sex discrimination case in which the plaintiffs sought to prove the discrimination by statistical analysis, the defendant produced wage cards for all of its employees in response to the plaintiffs' request for production.<sup>41</sup> The plaintiffs later sought to compel production of the defendant's computer tapes containing the same information.<sup>42</sup> The trial court refused the request, but did order the defendant to process whatever computer runs were requested by the plaintiffs.<sup>43</sup>

In an extreme case, a court might even require ABA to "computerize" its own data and to perform a computer analysis of that data for the discovering party's benefit. In *Kozlowski v. Sears, Roebuck & Co.*<sup>44</sup> the plaintiff, in a products liability action, sought Rule 34 discovery of complaints of similar incidents.<sup>45</sup> When the defendant Sears did not produce the information, the plaintiffs sought and secured a Rule 37 default judgment as to liability.<sup>46</sup> In support of its motion to set aside the default, Sears maintained that because of its longstanding practice of indexing claims alphabetically by name of claimant rather than by type of product, there was no practical way other than to examine every claim in the index, a task Sears maintained was impossible, that Sears could determine whether there had been any complaints similar to those the plaintiff had alleged.<sup>47</sup> The *Kozlowski* court ruled that Sears had a duty to produce the records of similar claims, and that Sears could not excuse itself from its Rule 34 obligations by "utilizing a system of record-keeping which conceals rather than discloses relevant records, or by making it unduly

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37. 220 F. Supp. 19 (D. Conn. 1963), *aff'd*, 337 F.2d 5 (2d Cir. 1964), *cert. denied*, 380 U.S. 908 (1965).

38. *Id.* at 21-22.

39. *Id.* at 21.

40. 665 F.2d 918 (9th Cir.), *cert. denied*, 103 S. Ct. 302 (1982).

41. *Id.* at 932.

42. *Id.*

43. *Id.*

44. 73 F.R.D. 73 (D. Mass. 1976).

45. *Id.* at 74.

46. *Id.* at 74-75.

47. *Id.* at 76.

difficult to identify or locate them, thus rendering the production of the documents an excessively burdensome and costly expedition."<sup>48</sup>

DISCOVERY OF ELECTRONICALLY STORED INFORMATION  
WHEN THE RESPONDENT HAS ALREADY PRODUCED  
THE UNDERLYING DATA IN ANOTHER MEDIUM

The discovery rules contemplate production of electronically stored information in a readily usable format, such as a "green bar" printout.<sup>49</sup> Can then, Round-The-Bend compel ABA to produce electronically stored information in machine-readable form notwithstanding ABA's prior production of the identical material in hard copy? This question has arisen in several cases, with different results.

In *Adams v. Dan Rivers Mills, Inc.* the plaintiff filed a Rule 34 request seeking the defendant's computerized master payroll file and computer printouts of W-2 forms.<sup>50</sup> The defendant objected on the grounds that the plaintiff had already been furnished with documents which contained the same information and that the defendant was under no obligation to provide documents in any particular specified form.<sup>51</sup> Noting that there was no reason why the computer tapes were not the proper subject of discovery, the *Adams* court required the defendant to produce the W-2 printouts and payroll file in appropriate computerized form.<sup>52</sup>

A similar issue arose in the *Japanese Electronic Products Antitrust Litigation*.<sup>53</sup> The defendants there sought to compel one of the plaintiff companies to use its own computer to perform the work necessary to create a computer-readable tape containing certain sales and product data previously supplied by the plaintiff in hard copy.<sup>54</sup> Counsel for the defendants maintained that, although counsel could read the hard copy printout, they could not analyze the data effectively until it could read by the defendants' computers.<sup>55</sup> The plaintiff claimed that, although the discovery rules required production of the material in computer printout form, they did not require actual "manufacture"

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48. *Id.*; see also *Baxter Travenol Laboratories, Inc. v. LeMay*, 93 F.R.D. 379 (S.D. Ohio 1981). But see *Oppenheimer Fund, Inc. v. Sanders*, 437 U.S. 340 (1978). The *Kozlowski* decision was distinguished in *Webb v. Westinghouse Elec. Corp.* on the ground that the defendant's conduct in *Kozlowski* approached the "level of willful disregard for the interests of the public." See *Webb v. Westinghouse Elec. Corp.*, 27 Fed. R. Serv. 2d 589 (E.D. Pa. 1978).

49. The requirement that a party translate information in its possession into a reasonably usable form has been limited to computer data. See *In re Puerto Rico Elec. Power Auth.*, 687 F.2d 501 (1st Cir. 1982) (court reversed district court order compelling plaintiff to translate documents from Japanese into English).

50. *Adams v. Dan River Mills, Inc.*, 54 F.R.D. 220, 221 (W.D. Va. 1972).

51. *Id.* at 221-22.

52. *Id.* at 222.

53. *Nat'l Union Elec. Corp. v. Matsushita Elec. Indus. Co.*, 494 F. Supp. 1257 (E.D. Pa. 1980).

54. *Id.* at 1258.

55. *Id.*

of a tape which did not theretofore exist.<sup>56</sup> Dismissing this objection as a mechanical rather than qualitative difference,<sup>57</sup> the district court held that common sense as well as a growing body of precedent supported the defendant's request and required the plaintiffs to create and furnish the requested tape.<sup>58</sup> The district court observed that in order to produce the computer-printed information in tape form, all that was necessary was for the plaintiff's computer specialists to re-run the program used to extract and print the computer reports on paper with a new instruction directing the computer to print the results in computer-readable form on magnetic tape.<sup>59</sup>

A request for production of the electronically recorded form of documents already produced in discovery would seem to be addressed to the discretion of the trial court. Given the fact that duplication of electronic data is relatively inexpensive, at least when compared with the cost of re-inputting the data, the courts ought to be inclined to order production of the electronically stored version even if the hard copy version has already been produced.<sup>60</sup> Not all courts have agreed with this view, however. In *Williams v. Owens-Illinois, Inc.* the defendant produced wage cards containing certain statistical information requested by the plaintiffs.<sup>61</sup> When the plaintiffs later sought to compel production of the computer tapes, which apparently contained the same information as the wage cards, the trial court refused.<sup>62</sup> The Ninth Circuit, while remanding the case on other grounds, held that the plaintiff's request for the tapes was addressed to the discretion of the trial court and refused to order the trial court to compel production of the tapes.<sup>63</sup>

On the facts disclosed in the appellate court opinion, the ruling in the *Williams* case appears to be shortsighted. Litigants ought to be entitled to prove their claims in the most expeditious manner possible. It should be obvious that if the *Williams* plaintiffs wished to "computerize" the employment data in order to perform various alternative manipulations of the sex and race statistics,<sup>64</sup> and if the tapes containing this data were readily obtainable from the defendant without undue expense, fidelity to Rule 1 of the Federal Rules

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56. *Id.* at 1259.

57. *Id.* at 1260.

58. *Id.* at 1261.

59. *Id.* at 1260.

60. See *United States v. AT&T Co.*, 1980-2 Trade Cas. (CCH) ¶ 63,568 (D.D.C. 1980).

61. *Williams v. Owens-Illinois, Inc.*, 665 F.2d 918, 932 (9th Cir.), *cert. denied*, 103 S. Ct. 302 (1982).

62. *Id.*

63. *Id.* at 933. The *Williams* court noted that "[a]ll information contained on the computer tapes was included in the wage cards which [plaintiff] discovered. [Plaintiffs] were therefore not deprived of any data. While using the cards may have been more time consuming, difficult and expensive, these reasons, of themselves, do not show that the trial judge abused his discretion in denying [plaintiffs] the tapes." *Id.*

64. See Comment, *Computer Discovery in Federal Litigation: Playing by the Rules*, 69 GEO. L.J. 1465, 1480 (1981).

of Civil Procedure<sup>65</sup> would suggest that the trial court should have required the defendant to produce the tapes.<sup>66</sup>

#### COST ALLOCATION RESPECTING PRODUCTION OF ELECTRONICALLY STORED INFORMATION

Rule 34 normally places on parties such as ABA the cost burden of producing the original magnetic media containing the electronically stored data. Round-The-Bend, as the party seeking the data, would normally bear the cost of securing copies of the contents of the media.<sup>67</sup> ABA's initial expense of producing even the originals may, however, be shifted to Round-The-Bend by invocation of Rule 26(c) of the Federal Rules of Civil Procedure, which allows a court to protect parties from "undue burden or expense incurred as a result of discovery practice."<sup>68</sup>

In addressing whether a party's response to a Rule 34 production request requiring the production of the electronic media would burden that party unduly,<sup>69</sup> the Advisory Committee on the Federal Rules indicated that a court should be guided by the actual needs of the party seeking the data.<sup>70</sup> Another factor which the courts have considered in deciding whether to shift all of the

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65. See FED. R. CIV. P. 1 (Federal Rules of Civil Procedure shall be construed to secure "just, speedy and inexpensive determination of every action").

66. Cf. *Donaldson v. Pillsbury Co.*, 554 F.2d 825, 832 (8th Cir.), cert. denied, 434 U.S. 856 (1977). Compelling the defendant to process the computer runs sought by the plaintiffs in the *Williams* case would not appear to be a viable alternative for the plaintiffs under the facts of the *Williams* case. Counsel for the plaintiffs ought not to be compelled to share his work product-generated theories of liability with opposing counsel. Requiring the defendant to generate alternate computer runs when and as requested by the plaintiffs, however, does just that.

67. See FED. R. CIV. P. 34; cf. *Hurtado v. United States*, 410 U.S. 578 (1973); *In re Puerto Rico Elec. Power Auth.*, 687 F.2d 501 (1st Cir. 1982); *In re Grand Jury No. 76-3 (MIA) Subpoena Duces Tecum*, 555 F.2d 1306 (5th Cir. 1977).

68. FED. R. CIV. P. 26(c); 1979 Advisory Committee Statement, *supra* note 6, at 526-27 (Rule 26(c) of Federal Rules of Civil Procedure now affords protection to claims of privacy, secrecy, or undue burden or expense). The Second Circuit in *Sanders v. Levy* acknowledged that Rule 26(c), coupled with Rule 34, allows district courts to shift the expense of special computer programming to the discovering party if the demand for information would impose upon the party supplying the information sought "undue burden or expense," but held that the district judge in *Sanders* did not abuse his discretion in declining to do so. *Sanders v. Levy*, 558 F.2d 636, 649 (2d Cir. 1977), *rev'd on other grounds sub. nom.*, *Oppenheimer Fund, Inc. v. Sanders*, 437 U.S. 340 (1978).

69. The fact that a discovery request is "burdensome" is generally not a sufficient reason to deny Rule 34 discovery. See *In re Folding Carton Antitrust Litig.*, 83 F.R.D. 251, 255 (N.D. Ill. 1978). A court may, however, limit a document request on the grounds of undue burden. See *United States v. Capitol Serv., Inc.*, 89 F.R.D. 578, 582 (E.D. Wisc. 1981); *United States v. Exxon Corp.*, 87 F.R.D. 624, 634-35 (D.D.C. 1980). A court may also require a sharing of the costs of production. See *Matter of Hawaii Corp.*, 88 F.R.D. 518, 522 (D. Hawaii 1980).

70. See 1970 Advisory Committee Statement, *supra* note 6, at 527 (appraisal of "undue" burden inevitably entails consideration of needs of party seeking discovery); see also, e.g., *Dunn v. Midwestern Indemnity*, 88 F.R.D. 191 (S.D. Ohio 1980); *Int'l Ass'n of Machinists v. United Aircraft Corp.*, 220 F. Supp. 19 (D. Conn. 1963), *aff'd*, 337 F.2d 5 (2d Cir. 1964), cert. denied, 380 U.S. 908 (1965).

producing party's costs to the discovering party is whether the cost of the producing party's compliance with the discovery request is merely incidental to its normal cost of doing business. In *Blank v. Talley Industries, Inc.*<sup>71</sup> subpoenas duces tecum were issued to a number of brokerage houses requiring the production of computer tapes containing lists of beneficial owners of stock.<sup>72</sup> The beneficial owners were potential members of the plaintiff class in a securities fraud action.<sup>73</sup> One brokerage house refused to produce the requested computer tapes unless the plaintiff paid it \$570, the sum alleged to be the brokerage house's cost of operating the computer.<sup>74</sup> The *Blank* court, however, characterized the expense as ordinary overhead necessarily incurred in responding to normal and customary court orders, and refused to shift the cost to the class representative.<sup>75</sup> Similarly, in *United States v. Davey* the Second Circuit ruled that the Internal Revenue Service was entitled to the original of the computer tape containing the requested financial data.<sup>76</sup> The court stated that the cost of any duplicate prepared for the producing party's use would be borne by the producing party.<sup>77</sup> The Second Circuit noted that the cost of the duplicate—\$1,305—was minimal in comparison to the amount spent by the producing party each year in cooperating with the Internal Revenue Service.<sup>78</sup>

In *Adams v. Dan River Mills, Inc.*, however, the court shifted the cost of

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71. 54 F.R.D. 627 (S.D.N.Y. 1972).

72. *Id.*

73. *Id.*

74. *Id.*

75. *Id.* The district court in *Blank* stated that:

[i]n view of the number of brokerage firms involved in the plaintiffs' court-ordered quest for class members' identities, it would be unfair to compel the plaintiffs to cover the costs of the firms' production of information, which costs when accumulated would indeed be burdensome. No other broker has requested reimbursement. In this class action I do not feel compelled in my discretion to require plaintiffs to pay the expenses of Merrill Lynch. These expenses are in the nature of overhead expenses necessary for responding to legitimate court orders involving the customers of stockbrokers.

*Id.*; see also, *In re Franklin Nat'l Bank Securities Litig.*, 574 F.2d 662, 675-76 (2d Cir. 1978), modified, 599 F.2d 1109 (2d Cir. 1979).

Expenses of production in responding to Rule 45 subpoenas are ordinarily borne by the responding party. As with Rule 34, however, a court may shift costs by conditioning the right of the party to secure document production in response to a subpoena upon reimbursement to the responding party of the expenses of production. Rule 45 specifically provides that a court may "condition denial of the motion [to quash] upon the advancement by the person in whose behalf the subpoena is issued of the reasonable cost of producing the books, papers, documents, or tangible things" FED. R. CIV. P. 45(b)(2); See, e.g., *Pollitt v. Mobay Chemical Corp.*, 95 F.R.D. 101 (S.D. Ohio 1982); *In re Coordinated Pretrial Proceedings, in Petroleum Products Antitrust Litig.*, 669 F.2d 620 (10th Cir. 1982); *United States v. Columbia Broadcasting System, Inc.*, 666 F.2d 364 (9th Cir. 1982).

76. *United States v. Davey*, 543 F.2d 996, 1001 (2d Cir. 1976), *rev'g and remanding*, 404 F. Supp. 1283 (S.D.N.Y. 1979).

77. *Id.*

78. *Id.*

production to the plaintiffs when the plaintiffs sought to require the defendant to furnish machine-readable versions of data the defendants had already produced.<sup>79</sup> Similarly, in *Pearl Brewing Co. v. Joseph Schlitz Co.*<sup>80</sup> the court conditioned the defendant's access to the plaintiff's computer experts' tapes and programming materials on payment of the costs of duplication.<sup>81</sup> In the *Japanese Electronic Products Antitrust Litigation* the defendants offered to pay the cost of duplicating the computer tape as part of their motion to compel.<sup>82</sup>

#### PRODUCTION OF ELECTRONICALLY STORED DATA IN RESPONSE TO INTERROGATORY PRACTICE

Round-The-Bend can, of course, serve a set of interrogatories on ABA seeking a detailed itemization of ABA's prior sales of Round-The-Bend products and a detailed explanation of the manner in which ABA calculates its lost profits damages. Rule 33 of the Federal Rules of Civil Procedure normally imposes a duty upon ABA to answer interrogatories at its own expense.<sup>83</sup> Where the answers to the interrogatories are derived from ABA's business records and where the burden of deriving the answer is substantially the same for Round-The-Bend as for ABA, Rule 33(c) allows ABA, in lieu of providing written answers, to afford Round-The-Bend a reasonable opportunity to examine and copy the records which contain the responsive information.<sup>84</sup> Respondents such as ABA will frequently invoke rule 33(c) in response to such interrogatories and offer to produce electronic data or computer printouts.

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79. *Adams v. Dan River Mills, Inc.*, 54 F.R.D. 220, 222 (W.D. Va. 1972).

80. 415 F. Supp. 1122 (S.D. Tex. 1976).

81. *Id.* at 1140-41; see also *Fauteck v. Montgomery Ward & Co.*, 91 F.R.D. 393 (N.D. Ill. 1980).

82. *Nat'l Union Elec. Corp. v. Matsushita Elec. Indus. Co.*, 494 F. Supp. 1257, 1258-59 (E.D. Pa. 1980).

83. See FED. R. CIV. P. 33(c).

84. *Id.* Rule 33(c) of the Federal Rules of Civil Procedure states:

[w]here the answer to an interrogatory may be derived or ascertained from the business records of the party upon whom the interrogatory has been served or from an examination, audit or inspection of such business records, including a compilation, abstract or summary thereof, and the burden of deriving or ascertaining the answer is substantially the same for the party serving the interrogatory as for the party served, it is a sufficient answer to such interrogatory to specify the records from which the answer may be derived or ascertained and to afford to the party serving the interrogatory reasonable opportunity to examine, audit or inspect such records and to make copies, compilations, abstracts or summaries. A specification shall be in sufficient detail to permit the interrogatory party to locate and identify, as readily as can be party served, the records from which the answer may be ascertained.

Even prior to the 1980 amendment to Rule 33(c), which added the last sentence of the Rule, it was clear that the "respondent *may not* impose on the interrogating party a mass of records as to which research is feasible only for one familiar with the records." 1970 Advisory Committee Statement, *supra* note 6, at 524-25. Because of the widespread perception that the increasingly routine response to interrogatories was the submission of a mass of business records or an offer

Round-The-Bend can challenge ABA's invocation of the Rule 33(c) option by demonstrating that the burden of deriving the responsive information from the machine-readable records is not substantially the same for Round-The-Bend as it is for ABA. Resolution of a Round-The-Bend motion to compel ABA to furnish written answers will depend upon factual showings as to the following: the relative abilities of ABA and Round-The-Bend to manipulate the computer data; the costs of manipulating the computer data; the types of reports normally generated by ABA; the equipment and programming capacities of both Round-The-Bend and ABA; whether the interrogatory answers to be derived require extensive data manipulation not normally performed by ABA; and whether a printout or other report containing information of the type sought is customarily generated in the ordinary course of ABA's business.<sup>85</sup>

The Supreme Court addressed tangentially the question of the sufficiency of a Rule 33(c) response offering electronically stored information in *Oppenheimer Fund, Inc. v. Sanders*.<sup>86</sup> There, the district court certified a class of 121,000 shareholders and required the defendant Fund to compile, from the transfer agent's records, a list of all members of the class.<sup>87</sup> This compilation required the manual sorting of the class members' names and addresses from records maintained on paper, the keypunching of approximately 300,000 computer cards, and the creation of new computer programs for use with both the existing tapes and the tapes created from the paper records.<sup>88</sup> The defendant Fund appealed the district court's order requiring the defendant, rather than the plaintiff, to bear the cost of identifying the members of the plaintiff class.<sup>89</sup> The Supreme Court ruled that the representative of the plaintiff class, and not the defendant, must bear the cost of identifying the names and addresses of potential members of the class.<sup>90</sup> Justice Powell analogized the cost-shifting inquiry under Rule 23 of the Federal Rules of Civil Procedure to the cost shifting considerations under the discovery rules.<sup>91</sup> He focused particular attention on the critical language of Rule 33(c) which allows the respondent to interrogatories to make available the documents from

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to make all of one's records available, the drafters added the final sentence to Rule 33(c) "to make it clear that a responding party has the duty to specify, by category and location, the records from which answers to interrogatories can be derived." FED. R. CIV. P. 33(c) advisory committee note, *reprinted in* 85 F.R.D. 521, 531 (1980).

85. *Cf. Al Barnett & Sons, Inc. v. Outboard Marine Corp.*, 611 F.2d 32, 35 (3rd Cir. 1979); *Broadway Delivery Corp. v. United Parcel Serv. of America, Inc.*, 27 Fed. R. Serv. 2d 622, 625 (S.D.N.Y. 1979); see generally Comment, *Computer Discovery in Federal Litigation: Playing by the Rules*, 69 GEO. L.J. 1465, 1475-78 (1981).

86. 437 U.S. 340 (1978), *rev'g*, 558 F.2d 636 (2d Cir. 1978).

87. *Id.* at 345-46.

88. *Id.* at 345.

89. *Id.*

90. *Id.* at 363-64; see generally Comment, *Cost of Notice in Class Actions After Oppenheimer Fund, Inc. v. Sanders*, 78 COLUM. L. REV. 1517 (1978).

91. 437 U.S. 340, 355-60 (1978), *rev'g sub. nom. Sanders v. Levy*, 558 F.2d 646 (2d Cir. 1977).

which the interrogatory answer can be derived where the burden of deriving the answer would be "substantially the same" for either party.<sup>92</sup> According to Justice Powell, "[t]his provision is intended to place the 'burden of discovery upon its potential benefitee' . . . where the burden would not be 'substantially the same' and can be far more benefiticially performed by the party subject to the interrogatory request. Discovery rules normally require the responding party to derive the answer itself."<sup>93</sup> In response to the Second Circuit's suggestion below that the fact that part of the records were kept on computer tapes justified imposing a greater burden on the Fund than might be imposed on a party whose records are kept in another form, Justice Powell observed that there was no reason to believe that the information would be any less expensive to extract if kept in a more traditional fashion.<sup>94</sup>

In *Foster v. Boise Cascade, Inc.*<sup>95</sup> the plaintiff in a Title VII action propounded certain interrogatories, which the defendant answered by stating that the required information was contained in the personnel files in the defendant's offices and offering to make the records available to the plaintiff for inspection.<sup>96</sup> The documents included computer tapes containing personnel information.<sup>97</sup> The plaintiffs moved to compel specific answers to the interrogatories, contending that the defendant had improperly invoked Rule 33(c).<sup>98</sup> The court observed that "despite the fact that defendant has offered to make available to plaintiffs' counsel the subject files of the interrogatories, plaintiffs raise the valid objection that lack of familiarity with, and inability to locate crucial documents within defendants' files, would substantially hamper plaintiffs' ability to prosecute this lawsuit in an efficacious, timely manner."<sup>99</sup> The court ruled that the information requested was not as accessible to the plaintiffs as to the defendant, and that the burden imposed upon the defendant to compile the information would be substantially less than that imposed on the plaintiffs.<sup>100</sup>

In some circumstances the court may have an opportunity to "split the baby" when faced with a question of the adequacy of a Rule 33(c) offer involving computer tapes. In *Penk v. Oregon State Board of Higher Education*,<sup>101</sup> the plaintiffs, desiring discovery of computer tapes containing employment data, sought an order from the court compelling the defendant to update and supply newer and more accurate computer tapes of the statistical information which already existed on tape.<sup>102</sup> The plaintiffs claimed they could not perform

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92. *Id.* at 357.

93. *Id.*

94. *Id.* at 362-63; see 558 F.2d at 649.

95. 20 Fed. R. Serv. 2d 466 (S.D. Tex. 1975).

96. *Id.* at 467-68.

97. *Id.* at 468.

98. *Id.* at 468-69.

99. *Id.* at 470.

100. *Id.*; see *Chrapliwy v. Uniroyal, Inc.*, 17 Fed. R. Serv. 2d 719, 722 (N.D. Ind. 1973).

101. 35 Fed. R. Serv. 2d 420 (D. Ore. 1982).

102. *Id.* at 421.



the computer analyses required to prove their discrimination claim with data containing inaccuracies.<sup>103</sup> The district court agreed with the defendant's argument that normally a party should not be compelled to answer an interrogatory that requires a compilation of data when that party is willing to allow the requesting party access to records from which the requesting party can make its own compilation of data.<sup>104</sup> The court in *Penk* noted that an exception to this general rule exists where a compilation would be made by the interrogated party in the course of preparation for trial.<sup>105</sup> The *Penk* court ruled that if the defendant did not need and would not use a more refined set of data at the trial then the defendant did not need to prepare a more accurate set of data for the plaintiff.<sup>106</sup> If, however, the defendant intended to use a more accurate set of data at the trial, the *Penk* court held that the defendant would be required to deliver that data to the plaintiffs.<sup>107</sup>

### "COMPUTERIZED" EVIDENCE AT TRIAL

In the hypothetical, ABA proposes to offer certain computer printouts into evidence at trial. The prior sales history printout will doubtless be offered into evidence under the business records exception to hearsay rule.<sup>108</sup> Successful invocation of the business records exception to the hearsay rule requires ABA to prove that the computer printout contains data captured in the regular course of ABA's business at or near the time of the sales transactions, and that the sources of the information contained in the printout demonstrate the trustworthiness of the printout. A qualified witness from ABA must testify to the manner of preparation of both the data and the printouts.<sup>109</sup> Discovery

103. *Id.* at 422.

104. *Id.*

105. *Id.*

106. *Id.*

107. *Id.* The *Penk* court stated that:

[i]f indeed both sides require the use of a more accurate data base, this court strongly urges the parties to work together to create one at the lowest possible cost. It would be wasteful and a hinderance to the clear presentation of evidence at trail for the parties to operate under separate data bases.

*Id.*

108. See FED. R. EVID. 803(6) (business records exception to rule against hearsay); *cf.* *King v. State ex rel. Murdock Acceptance Corp.*, 222 So.2d 393 (Miss. 1969) (applying business records exception); *Crowe v. Coursey*, 601 S.W.2d 650 (Mo. Ct. App. 1980) (same); *Missouri Valley Walnut Co. v. Snider*, 569 S.W.2d 324 (Mo. Ct. App. 1978) (same); *Transport Indemnity Co. v. Seib*, 178 Neb. 253, 132 N.W.2d 871 (1965) (same); *Monarch Fed. Savings and Loan Ass'n v. Genser*, 156 N.J. Super. 107, 383 A.2d 475 (1977) (same); see generally Annot., 7 A.L.R. 4th 8 (1981); Annot., 11 A.L.R. 3rd 1368 (1967).

ABA's computer printouts might also be admissible under Rule 1006 of the Federal Rules of Evidence as summaries of voluminous data if the underlying data is admissible. See FED. R. EVID. 1006; *United States v. Dioguardi*, 428 F.2d 1033 (2d. Cir.), *cert. denied*, 400 U.S. 825 (1970); *Fairchild Stratos Corp. v. Lear Siegler, Inc.*, 337 F.2d 785 (9th Cir. 1969).

109. *Cf.* R. Johnston, A Guide for the Proponent and Opponent of Computer Based Evidence, in ABA COMPUTER EVIDENCE PROGRAM, *supra* note 3; C. Williams, Current State of the Law Concerning Admissibility of Computer-Based Evidence, in ABA COMPUTER EVIDENCE PROGRAM, *supra* note 3.

of the foundational facts concerning each of these elements is essential if Round-The-Bend is to contest ABA's offer of the computer printouts into evidence.

Round-The-Bend's task of pretrial discovery is compounded in the hypothetical because ABA contemplates offering the "lost profit projection" printout into evidence. The "lost profit projection" printout is the result of a computer model or simulation which provides the basis for Mr. Everwright's testimony as to the results of the computer analysis.<sup>110</sup> It is not a business record under Rule 803(6) of the Federal Rules of Evidence, but rather a disguised form of expert opinion.<sup>111</sup> Round-The-Bend's timely discovery of the underlying data and the computer programs which yield the "lost profit projections" is essential if Round-The-Bend is to successfully challenge the admissibility of the "lost profit projection" printout.<sup>112</sup> Round-The-Bend's counsel will need access to this same documentation if Mr. Everwright's testimony as to damages is to be fairly tested on cross-examination.

While Rule 705 of the Federal Rules of Evidence requires disclosure of the data underlying an expert's testimony on cross-examination, Rule 26(b)(4) of the Federal Rules of Civil Procedure provides for only limited pretrial deposition of the facts underlying the expert's opinions.<sup>113</sup> A party may learn through interrogatories the opinions to which the expert is expected to testify, as well as the factual basis for those opinions.<sup>114</sup> Upon motion a court may permit deposition of the expert<sup>115</sup> and may compel the production of documents prepared by the expert.<sup>116</sup> A court will typically require some showing of need that has not been satisfied by the interrogatory answers before permitting discovery of an expert by deposition and prior to compelling an expert to produce documents.<sup>117</sup>

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110. Cf. Eastin, *The Use of Models in Litigation: Concise or Contrived?*; see generally 52 CHI [-] KENT L. REV. 610 (1980).

111. Cf. R. Johnston, A Guide for the Proponent and Opponent of Computer Based Evidence, in ABA COMPUTER EVIDENCE PROGRAM, *supra* note 3; C. Williams, Current State of the Law Concerning Admissibility of Computer-Based Evidence, in ABA COMPUTER EVIDENCE PROGRAM, *supra* note 3.

112. Cf. Griffin v. Bolger, 35 Fed. R. Serv. 2d 759 (M.D. Fla. 1982) (court denied "eve-of-trial" request for copy of computer tape which was basis of expert's testimony.)

113. Compare FED. R. EVID. 705 (expert witness may testify in terms of opinions or inferences and give his reasons therefore without prior disclosure of underlying facts or data unless court requires otherwise, but expert may be required to disclose underlying facts or data on cross-examination) with FED. R. CIV. P. 26(b)(4)(A)(i) (party may discover through interrogatories the identity of expert witness, subject matter upon which expert expected to testify, substance of facts and opinions to which expert expected to testify, and summary of grounds for expert's opinion).

114. See FED. R. CIV. P. 26(b)(4)(A)(i).

115. See generally Chu, *Discovery of Experts*, 8 LITIGATION Winter 1982, at 13.

116. See Quadrini v. Sikorsky Aircraft Division, United Aircraft Corp., 74 F.R.D. 594 (D. Conn. 1977).

117. The fact that courts typically require a showing of need before permitting either deposition of an expert or production of documents from an expert reflects the concern that a party should be prevented from building his own case upon the opinions of experts retained by others. See *In re Brown Co. Securities Litig.*, 54 F.R.D. 384, 385 (E.D. La. 1972); Friedenthal, *Discovery*

The courts have shown increasing sensitivity to the requirements of counsel in preparing effective cross-examination of experts whose testimony is based upon computer-generated data,<sup>118</sup> and have been willing to allow a party such discovery of expert witnesses as may be required and appropriate to identify and examine the computer-generated analysis which underlies the experts' eventual testimony. In *United States v. Dioguardi*<sup>119</sup> the defendant was charged with bankruptcy fraud.<sup>120</sup> A government witness testified at trial from figures supplied by a second party, a computer expert, and had no independent knowledge of any of the facts or instructions given to the computer.<sup>121</sup> The defendant objected to the government's failure to produce the computer program for examination during trial.<sup>122</sup> The Second Circuit refused to find reversible error, but stated:

[w]e fully agree that the defendants were entitled to know what operations the computer had been instructed to perform and to have the precise instruction that had been given. . . . We place the government on the clearest possible notice . . . of the great desirability of making the program and other materials needed for cross-examination of computer witnesses, such as flow charts used in the preparation of programs, available to the defense at a reasonable time before trial.<sup>123</sup>

In *Pearl Brewing Co.* the court allowed pretrial discovery of a computer simulation program prepared by the plaintiff's non-trial witness experts for use in demonstrating the economics of the Texas beer market.<sup>124</sup> There, the plaintiff's economic expert supervised the design of an econometric computer model, called the Texas Beer Market Model, which simulated market conditions.<sup>125</sup> The plaintiff's experts also prepared a second set of computer programs, called the Damage Assessment Program, which was designed to take the data generated by the Texas Beer Market Model and convert it into damage calculations to be presented at trial.<sup>126</sup> The plaintiff made the computer output and some of the documentation available to the defendant

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*and Use of an Adverse Party's Expert Information*, 14 STAN. L. REV. 455, 486-87 (1962).

118. As the First Circuit observed in *United States v. Cepeda Penes*, "[a]ny use of computerized data presents some obstacles to effective cross-examination . . . because of the difficulty of knowing the precise methods employed in programming the computer as well as the inability to determine the effectiveness of the persons responsible for feeding data into the computer." *United States v. Cepeda Penes*, 577 F.2d 754, 760-61 (1st Cir. 1978).

119. 428 F.2d 1033 (2nd Cir. 1970), *cert. denied*, 400 U.S. 825 (1970).

120. *Id.* at 1034.

121. *Id.* at 1037.

122. *Id.* at 1038.

123. *Id.*; see also *United States v. Liebert*, 519 F.2d 542, 547-48 (3rd Cir.), *cert. denied*, 423 U.S. 985 (1975). Pretrial discovery of computer evidence pursuant to Rule 16 of the Federal Rules of Criminal Procedure should work in both directions. See *United States v. United States Gypsum Co.*, 404 F. Supp. 619, 621 (D.D.C. 1975).

124. *Pearl Brewing Co. v. Joseph Schlitz Brewing Co.*, 415 F. Supp. 1122, 1134 (S.D. Tex. 1976).

125. *Id.*

126. *Id.*

before trial.<sup>127</sup> The defendant contended that this information was insufficient to enable their own expert to properly analyze the models, and moved for discovery access to the non-testifying computer experts who designed the actual programs.<sup>128</sup> The district court held that the motion was governed by Rule 26(b)(4)(B), and ruled that the defendant was entitled, *at its own expense*, to inspect and copy the entire system documentation for the Texas Beer Market Model and Damage Assessment Program.<sup>129</sup> The defendant was also afforded an opportunity, *again at its own expense*, to depose the two non-trial expert computer programmers.<sup>130</sup>

As exemplified by *Pearl Brewing Co.*, pretrial discovery of the computer programs and computer data used to form the basis for a testimonial expert's opinion is increasingly common in complex litigation.<sup>131</sup> *City of Cleveland v. Cleveland Electric Illuminating Company*<sup>132</sup> provides another examples of this use of computer programs and computer data. In *City of Cleveland*, an antitrust case, the defendants sought to compel pretrial production of the data and calculations underlying the plaintiff's trial experts' opinions.<sup>133</sup> The trial court had previously ordered the parties to exchange the names of their respective trial experts and to produce copies of the written reports and conclusions compiled by those experts.<sup>134</sup> One of the plaintiff's expert's reports reflected the results of various computer simulations.<sup>135</sup> The defendants, contending that they could not deduce the programs used or the various inputs and assumptions from the report furnished by the plaintiff and thus could not adequately prepare for cross-examination of the expert, obtained disclosure of the data and programs employed by the experts in reaching the conclusions set forth in the published report.<sup>136</sup>

The trial court was not as forthcoming in *Perma Research and Development v. Singer Co.*<sup>137</sup> There, in a breach of contract case, the plaintiff's expert testified concerning the results of a computer simulation that purportedly demonstrated that a certain anti-skid device could have been further developed by the defendant despite the defendant's claim that it had done all it could in developing the device.<sup>138</sup> The trial court denied the defendant access to either the underlying data or the computer program, and this refusal was upheld on appeal.<sup>139</sup> The Second Circuit ruled that there was no abuse of

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127. *Id.*

128. *Id.* at 1134-35.

129. *Id.* at 1138-39.

130. *Id.*

131. *See, e.g.,* *Quadrini v. Sikorsky Aircraft Division, United Aircraft Corp.*, 74 F.R.D. 594 (D. Conn. 1977) (aviation disaster litigation).

132. 538 F. Supp. 1257 (N.D. Ohio 1980).

133. *Id.* at 1266.

134. *Id.*

135. *Id.*

136. *Id.* at 1266-67.

137. 542 F.2d 111 (2d. Cir.), *cert. denied*, 429 U.S. 987 (1976).

138. *Id.* at 115.

139. *Id.* The computer expert in *Perma Research and Development* declined to disclose the

discretion in failing to require disclosure.<sup>140</sup> This holding brought a vigorous dissent from Judge Van Graafeiland.<sup>141</sup> He argued that where a computer is programmed to produce information specifically for purposes of litigation the results of that programming are inadmissible hearsay and therefore, the district court should not have permitted the expert witness to state the results of the computer's operations without making the program available to opposing counsel well in advance of trial for examination, testing, and possible use on cross-examination.<sup>142</sup> Judge Van Graafeiland contended that affording the defendant an opportunity to investigate the reliability of the computer-generated evidence was particularly essential in view of the persuasive impression computer analysis can make on the fact finder.<sup>143</sup> He stated that:

[l]ong before the age of computers, the law was established that an expert witness might refer to records, such as elaborate mathematical calculations, if, but only if, such records were made available for inspection by opposing counsel and thorough cross-examination thereon was permitted. Because of the computer's "ability to package hearsay and erroneous or misleading data in an extremely persuasive format," this rule should be strictly adhered to whenever expert testimony is predicated upon specially prepared computerized calculations or simulations.<sup>144</sup>

#### DISCOVERY OF COMPUTER-BASED LITIGATION SUPPORT SYSTEMS

In the course of business litigation it is increasingly frequent that counsel on one or both sides will use a computer in connection with the establishment and operation of a litigation support system. Computer-based litigation systems are available from a number of experienced vendors who offer everything from database software programs capable of running on a small

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manner in which the computer was programmed on the grounds that the program was proprietary and personal work product. *Id.* Proprietary and other confidential information can be safeguarded during discovery by protective orders issued pursuant to Rule 26(c) of the Federal Rules of Civil Procedure. See Fromholz, *Discovery, Evidence, Confidentiality and Security Problems Associated with the Use of Computer-Based Litigation Support Systems*, 1977 WASH. U.L.Q. 445, 454-59.

140. The Second Circuit in *Perma Research and Development* stated that:

[w]hile it might have been better practice for opposing counsel to arrange for the delivery of all details of the underlying data and theorems employed in these simulations in advance of trial both to avoid unnecessary and belabored issues at trial . . . and protect truly proprietary aspects of the programs . . . the trial judge did not abuse his discretion in allowing the experts to testify as to this particular basis for the ultimate conclusion that the Perma device was indeed perfectible.

542 F.2d at 115. The Second Circuit held, however, that on the record before it, the defendant failed to show that it did not have an adequate basis upon which to cross-examine the plaintiff's experts. *Id.*

141. *Id.* at 116 (Van Graafeiland, J., dissenting).

142. *Id.* at 125.

143. *Id.* at 125-26.

144. *Id.*; see also MANUAL, *supra* note 15, § 2.70, at 70; *Id.* § 2.717, at 81.

business personal computer, such as an IBM PC, to complete turn-key operations, including staffing, supported by large mainframes. The computer systems themselves may encompass simple objective-index systems, index-plus-partial text systems, full-text retrieval systems, or subject coded systems.<sup>145</sup> The overall design of a litigation support system is generally supervised by a lawyer.<sup>146</sup>

The work product privilege protects from discovery materials "prepared in anticipation of litigation or for trial," unless the party seeking discovery shows a "substantial need" for the information and an inability "without due hardship to obtain a substantial equivalent" by another means. The privilege accords strong protection to material that contains the "mental impressions, conclusions, opinions, or legal theories of an attorney or other representative of the party."<sup>147</sup> The most common argument employed to bring a litigation support database within the protection afforded by the work product privilege is that the database represents more than simply a storehouse of unaltered documents. The argument is typically advanced that the very process of selecting the documents reflected in the database is work product, disclosure of which would reveal the judgment of the attorney regarding matters he feels are important to the case.<sup>148</sup>

In the *IBM Peripherals*<sup>149</sup> litigation the plaintiffs, in coordinated antitrust litigation against IBM, desired to compel IBM to disclose the details of its litigation support system and sought to access to IBM's litigation support system itself to retrieve documents responsive to certain index terms provided by the plaintiffs.<sup>150</sup> The plaintiffs' motion was designed essentially to obtain selective retrieval of the documents produced in other antitrust litigation brought against IBM.<sup>151</sup> IBM invoked Rule 26(b)(3) and maintained that the plaintiffs could obtain the substantial equivalent to the IBM litigation support system by creating their own computer support system, albeit at substantial

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145. See Comment, *Computer Discovery in Federal Litigation: Playing by the Rules*, 69 GEO. L.J. 1465, 1483-84 n.98 (1981); Sherman and Kinnard, *The Development, Discovery and Use of Computer Support Systems in Achieving Efficiency in Litigation*, 79 COLUM. L. REV. 267, 268-71 (1979); Comment, *Computerized Litigation Support Systems and the Attorney Work Product Doctrine: The Need for Court Support Against Discovery*, 17 VALPARAISO L. REV. 281, 284-85 (1983).

146. See Madden, *Information Management in Complex Litigation*, 4 LITIGATION, Spring 1978, at 16.

147. See FED. R. CIV. P. 26(b)(3).

148. As the District of Columbia Circuit observed in *Montrose Chem. Corp. v. Train*: [e]ven if they cited portions of the evidence verbatim, the assistants were making an evaluation of the relative significance of the facts recited in the records. Separating the pertinent from the impertinent is a judgmental process, something of the highest order; no one can make a selection of evidence without exercising some kind of judgment, unless he is simply making a random selection.

*Montrose Chem. Corp. v. Train*, 491 F.2d 63, 68 (D.C. Cir. 1974).

149. 5 Computer L. Serv. Rep. 878 (N.D. Cal. 1975).

150. *Id.* at 879.

151. See *id.*

expense.<sup>152</sup> The district court denied the plaintiffs' motion to require IBM to give further interrogatory answers describing IBM's litigation support system in detail, and denied the plaintiffs' request for access to the litigation support system itself.<sup>153</sup> The court ruled that the plaintiffs failed to make a sufficient showing under Rule 26(b)(3) and found that there are "alternative means available to [plaintiffs] to obtain the equivalent information without undue hardship."<sup>154</sup>

The litigation support system involved in the *IBM Peripherals* litigation was apparently a combination index and full text system.<sup>155</sup> Suppose, however, that one of the parties merely "computerized" previously non-computerized information for use in formulating its trial strategy and for possible use by a testimonial expert. Will a court on appropriate motion require the production of the computer tape containing the computerized data? One court presented with this question answered in the affirmative. In *Fauteck v. Montgomery Ward & Co.*<sup>156</sup> the defendant in a sex discrimination case caused various objective statistical data concerning its own employees to be input into a computer.<sup>157</sup> The analysis of the data was directed by the defendants' attorneys, who selected both the data to be compiled and the manner of its compilation.<sup>158</sup> The plaintiff sought a copy of the resulting computer tape contending that the process of selecting the data and inputting it into a computer involved the mere mechanical retyping of the underlying records, and thus was not protected by the work product privilege.<sup>159</sup> The defendant contended that the selection process itself required the exercise of considerable judgment, but offered to produce the data if any of the data formed the basis for an expert's testimony at trial.<sup>160</sup> The court observed that if the database served as the foundation of an expert's trial testimony, the plaintiffs could attack that testimony by challenging the judgments that went into building the database on which the testimony rested, and the database would be discoverable prior to trial under Rule 26(b)(4).<sup>161</sup> The district court also observed that if the plaintiffs' view of the compilation process was the more accurate view, and if the process used by the defendants was essentially mechanical, then the database was not protected by the work product

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152. *See id.*

153. *Id.*

154. *Id.* at 879; *see also* MCI Communications Corp. v. AT&T Co., No. 74 Civ. 633 (N.D. Ill. March 14, 1980) (court held MCI's litigation support database protected by work product privilege).

155. *See* Computer L. Serv. Rep. at 879; *see also* Sherman and Kinnard, *The Development, Discovery and Use of Computer Support Systems in Achieving Efficiency in Litigation*, 79 COLUM. L. REV. 267, 287-89 (1979).

156. 91 F.R.D. 393 (N.D. Ill. 1980).

157. *Id.* at 397.

158. *Id.*

159. *Id.*

160. *Id.*

161. *Id.* at 398.

privilege.<sup>162</sup> Without deciding whose version of the facts was correct, the district court concluded that the tape containing the database should be produced to the plaintiff during pretrial discovery.<sup>163</sup>

In complex antitrust litigation one party may create a litigation support database for use in connection with a particular trial. Suppose that a second party, or group of litigants on the same side of the issue, obtains through voluntary means access to or a copy of that database. Will that access destroy the work product privilege so as to enable the common opponent to secure access to and discovery of its contents? In *United States v. AT&T*<sup>164</sup> the District of Columbia Circuit answered this question in the negative.<sup>165</sup> In that case, MCI, a litigant pressing antitrust claims against AT&T in the Northern District of Illinois, created a litigation support database for use in the *MCI v. AT&T* pretrial proceedings.<sup>166</sup> When the Government subsequently filed suit against AT&T in the District of Columbia, it enlisted the cooperation of MCI in pursuing their common opponent.<sup>167</sup> MCI furnished the Government's attorneys with copies of MCI's database containing abstracts of documents, deposition testimony and exhibits, and provided the documents necessary to explain the structure of the database, how the information was entered, and how it could be retrieved.<sup>168</sup> AT&T then served a document request on the Government in the District of Columbia action requesting that the Government produce the MCI database and accompanying explanatory documents.<sup>169</sup> MCI intervened and asserted the work product privilege.<sup>170</sup> When the trial court overruled MCI's claim of privilege on the basis of waiver, MCI appealed.<sup>171</sup> The District of Columbia Circuit refused to follow *D'Ippolito v. Cities Service Co.*<sup>172</sup> and upheld MCI's claim of privilege.<sup>173</sup> The District of Columbia Circuit observed that protecting the MCI-Government database exchange would ultimately expedite the resolution of the Government's antitrust suit and further the truth finding process.<sup>174</sup> The court stated that:

[w]e believe our holding on the waiver issue furthers the purpose of the work product privilege by protecting attorney's preparations for

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162. *Id.*

163. *Id.*

164. 1980-2 Trade Cas. (CCH) ¶ 63,533 (D.C. Cir. 1980).

165. *Id.* at 76,867-68.

166. *Id.* at 76,859.

167. *Id.*

168. *Id.*

169. *Id.* at 76,860.

170. *Id.*

171. *Id.* at 76,860-61.

172. 39 F.R.D. 610 (S.D.N.Y. 1965) (court held work product privilege waived through voluntary disclosure to attorneys in Antitrust Division). *But see* GAF Corp. v. Eastman Kodak Co., 85 F.R.D. 46 (S.D.N.Y. 1979) (court held work product privilege not waived by disclosure to attorneys in Antitrust Division where disclosure obtained by use of Civil Investigative Demand issued by Antitrust Division pursuant to Antitrust Civil Process Act).

173. 1980-2 Trade Cas. (CCH) ¶ 63,533, at 76,867 (D.C. Cir. 1980).

174. *Id.* at 76,869.



trial and encouraging the fullest preparation without fear of access by adversaries. *The work product privilege rests on the belief that such promotion of adversary preparation ultimately furthers the truthfinding process.* For MCI to contribute the fruit of its analysis to the Government on those issues common to their two cases will further the Government's preparation for trial and eliminate some duplication of effort. The advantages of such sharing led the judge in MCI's Northern District of Illinois case against AT&T to remark, "we believe the court should not only encourage the sharing of discovery in cases with common fact questions but order it on its own motion even where the parties do not suggest it."<sup>175</sup>

### CONCLUSION

Issues concerning the discoverability of electronic evidence, allocation of the costs connected with the discovery of electronically stored data, court-ordered assistance in fathoming the mysteries of computer data processing, complications created by wide-spread expert usage of computers in preparation of trial testimony, and the implications of the burgeoning use of computer-based litigation support systems are receiving increasing judicial attention. While there have been occasional missteps, the courts have demonstrated a sensitivity to the problems posed by electronically stored evidence. With further experience, resolution of the problems posed by electronically stored evidence should not impose any unusual burden on the courts. As discussed above, ample precedent exists to guide counsel and the court through the seemingly intractable "silicon maze."

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175. *Id.*

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