# RECENT DEVELOPMENTS IN ELECTRONIC DISCOVERY: DISCOVERING ELECTRONIC DOCUMENTS AND DISCOVERING DOCUMENTS ELECTRONICALLY

The preponderance of documentary evidence these days are created in an electronic form; and some documents exist for most, if not the entire, of their life cycles as electronically stored documents. To varying degrees, however, discovery of documents within the civil litigation process in Singapore and elsewhere is provided using paper documents. This article considers electronic discovery from two perspectives: the obligation to provide discovery of electronically stored documents; and the manner in which discovery of documents may be provided in an electronic form. This article examines the issues that are raised when the obligation to provide discovery is applied to electronically stored documents: issues relating to the breadth of the discovery obligation, access to and the costs of accessing electronically stored documents, the role of technical experts and legal advisers in ensuring that documentary evidence is preserved and privileged documents are not disclosed. A survey of recent legislative developments in the US, UK and Australia reveals the different approaches adopted by these jurisdictions to address such issues raised by electronic discovery. These different approaches are considered; as are the measures taken to encourage the provision of discovery in an electronic form. The article concludes with a consideration of the suitability of some of these legislative developments for adoption in Singapore.

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1 The past year has seen a legislative frisson internationally in the area of civil procedural rules governing electronic discovery. No doubt legislators worldwide realise that the transposition of the litigants' discovery obligations into the electronic realm has revealed new dimensions which these rules seek to address. The tendency for electronically stored information to grow has increased the volume of documents which are potentially discoverable; and this has led to concerns relating to proportionality, accessibility and costs.

2 This article surveys recent legislative developments as civil procedural rules are updated to deal with the discovery of electronically stored information. As this article's title suggests, there are at least two

aspects to electronic discovery. This article will first consider issues relating to the discovery of electronic – or electronically stored – documents. This section commences with a brief survey of the range of discoverable electronic documents and the issues relating to their discovery. We will consider also the issues of proportionality, accessibility and costs with regards to the expanded options of electronic storage. We round up this aspect of the article by considering the solicitor's obligations in relation to the preservation and discovery of electronic documents, including inadvertent disclosures of privileged documents.

3 Next, the article will consider the process by which documents may be discovered electronically. We will look at recent trends to impose an obligation on litigants to address issues relating to electronic discovery early in the litigation process. In this section, we will also look at the role of technical experts in the electronic discovery process, before wrapping up with an examination of how discoverable documents may be disclosed electronically. This article concludes with a brief consideration of how these developments may be adopted in our civil procedural rules.

## I. Discovering electronic documents

4 We turn first to consider the range of discoverable electronic documents. There is no debate over whether electronically stored documents are discoverable. The courts have taken a broad view of the categories of material that fall within the definition of documents and electronically stored documents have long been considered discoverable. Hence, it was noted in *Rowe Entertainment v The William Morris Agency*, *per* Robert P Patterson, Jr, USDJ: "Rules 26(b) and 34 of the Federal Rules of Civil Procedure instruct that computer-stored information is discoverable under the same rules that pertain to tangible, written materials."[1] It is therefore not surprising that recent cases have considered the discoverability of a whole range of electronically stored documents: not only word processor documents, spreadsheets and presentation slides, but also electronic mail,[2] databases,[3] and sound recordings stored as Motion Picture Expert Group 1, Audio Layer 3 ("MP3") files.[4]

1 SDNY 2002 US Dist LEXIS 8308 (2002), at p 11.

2 For examples of cases where e-mails were discovered, see the *Zubulake* series of cases, *infra*, and the local case of *Trek Technology (Singapore) Pte Ltd v FE Global Electronics Pte Ltd* [2003] 3 SLR 685, where the application for discovery of internal e-mails was denied at the interlocutory stage but Choo Han Teck J left open the door for a similar application before the trial judge.

5 In the Practice Direction to the UK Civil Procedure Rule Part 31, which came into effect in October 2005, e-mails, word processor documents and databases are specifically included within the meaning of documents. Additionally, metadata and even deleted documents are included within the definition of documents.[5]

6 A distinction which ought to be borne in mind in respect of the legal obligation to discover documents is that the documents themselves should not be confused with the storage medium in which these documents reside. In *Sony Music Entertainment (Australia) Limited v University of Tasmania*, the Federal Court of Australia opined that "the Court has power to order discovery of a CD ROM, tapes or the other electronic storage devices".[6] While issues relating to accessibility of storage media will be considered below, it suffices for the moment to point out that it is not the storage device or medium that is discoverable but the documents stored within. Hence, an optical DVD disc may contain up to five gigabytes' worth of documents but not all are discoverable; similarly with backup tapes, hard disk drives whether on personal computers or accessible on the network. The adage that the obligation to discover should not be used as an excuse to empty out the opposing party's filing cabinet holds true for electronically stored documents: discovery should not be an excuse for asking the opposing party to hand over his entire hard drive.

7 Notwithstanding the foregoing, the occasion may arise where it is necessary to obtain an image of the responding party's hard disk for the purpose of recovering deleted file fragments. Where a party has grounds to believe that incriminating evidence has been deleted, a request may be made for an image of the responding party's hard disk to be submitted to technical experts for the purpose of recovering deleted file fragments. Understandably, the courts are cautious in granting such requests as they involve submitting the entire contents of the responding party's hard disk to external examination.

3 For examples of cases where databases are discoverable, see *infra*, n 8 and the discussion in the accompanying main text.
4 *Sony Music Entertainment (Australia) Limited v University of Tasmania* [2003] FCA 532.
5 See para 2A.1 of Practice Direction Part 31.
6 *Supra*, n 4 at [54].

8 The recent US District Court of the Southern District of New York case of *Calyon v Mizuho Securities USA, Inc*[7] discussed the considerations that the court weighs in deciding whether to grant such applications under r 34(a) of the Federal Rules of Civil Procedure. A balance is sought between ensuring discovery of relevant (and often incriminating) evidence on the one hand, and the protection of privilege and privacy concerns on the other. The request has to be made with sufficient particularity to identify the information that is sought to be recovered from the hard disk image. The successful applicant is expected to demonstrate a close relationship between the information likely to be recovered from an image of the defendant's hard disk to his cause of action, *eg*, that the deleted files contain evidence of breach of confidentiality. It will also help the applicant if he is able to show that the responding party's conduct in providing discovery had been dilatory prior to the application and that the responding party is unlikely to provide the requested information without an application to court. In granting such applications, the court is likely to impose conditions that are meant to safeguard privileged documents, *eg*, submitting the retrieved file fragments to the defendant's counsel for the purpose of ensuring that privileged documents are not disclosed or allowing them to object to disclosure of file fragments containing privileged documents.

### *A. The discovery of databases*

9 While the distinction between electronically stored documents and storage medium is more clearly seen in documents that are stored as discrete files in folders or directory structures, information stored within databases poses a different challenge. Databases are potentially monolithic electronic containers of a large quantity of information. On the storage medium, the database appears as one file; however, there may be a large quantity of information stored within the database as structured records.

10 Frequently, databases will contain commercially valuable information which may not be relevant or necessary to the litigation. Courts will usually be mindful of the commercial implications of discovery of commercially valuable information during litigation and traditional tests for discovery will aid in determining whether the database in question ought to be disclosed. In *Robert Kouzaris v Bass*

7 2007 WL 1468889 (SDNY).

*Taverns Ltd*,[8] the plaintiff alleged that the defendant agreed to employ him as a deputy manager, and had requested the discovery of the defendant's database of job vacancies in his action for breach of promise of employment. However, his request for discovery of the defendant's database was not allowed on the basis that the portion of the plaintiff's claim to which the database was alleged to be relevant was of doubtful legal merit and hence discovery of the database was considered unnecessary.

11 The proper approach in the discovery of database should therefore be one that focuses on the range of such information – or records – within the database that is relevant and necessary and to disclose only extracts of these records, not the entire database. The Federal Court of Australia considered this issue in *Kyocera Mita Australia Pty Ltd v Mitronics Corporation Pty Ltd*,[9] before deciding not to order the discovery of the electronic database in question. In resisting the application, the defendant argued that the database contained a large pool of information that included every facet of its business. It was argued that the information which the plaintiff required (*eg*, invoice details) could not be separated from the rest of the information in the database and that this information had already been disclosed as hard copy documents. While the court agreed with the plaintiff that it was possible to address the defendant's concern about access to irrelevant information in the database by, for example, limiting access to the parties' legal representatives and independent experts, the court was not persuaded that it was appropriate to exercise its discretion to order discovery of the database.

12 Once it is agreed that the discovery of databases requires the identification of discoverable records, the focus shifts to the process by which such records may be identified. As will subsequently be seen in the discussion on the approach adopted for electronic discovery, a more pragmatic approach which requires the collaboration of counsel for opposing parties is favoured over a set of prescriptive directions which may not be sufficiently flexible. The courts will generally encourage litigants to collaborate on the mechanics of how discoverable records should be disclosed and will provide ample opportunity for litigants to arrive at a solution. Hence in *Jarra Creek Central Packing Shed Pty Ltd v*

8 [1998] EWCA Civ 551.
9 [2005] FCA 242.

*Amcor Limited*,[10] one of the discovery disputes related to a request for reports and extracts from electronic databases. The court made no decision on this matter as the parties were negotiating on the basis that the requestor was entitled to such reports and extracts from databases but gave the parties time to agree on the issues relating to the technical difficulties and expenses in obtaining such reports and extracts.

13 Closely allied to the issue of discovery of databases are issues relating to how the requesting party may be granted access to the database records actually disclosed, especially legacy databases that require proprietary software for access. Such issues of granting technical assistance and means of access are generally relevant in electronic discovery, but they take on particular prominence in the discovery of electronic databases. This is due mainly to the fact that the standards for databases are more varied than for other forms of documents, especially since there are a number of legacy database standards which are still in use today.

14 The approach has therefore been to impose an obligation that "may require the responding party to provide some combination of technical support, information on application software, or other assistance".[11] Hence, r 33(d) of the US Federal Rules of Civil Procedure was amended to allow the requesting party "reasonable opportunity to examine, audit or inspect … and to make copies, compilations, abstracts, or summaries". Similarly, the Supreme Court of Victoria's Practice Note No 1 of 2007 on *Guidelines for the Use of Technology in any Civil Litigation Matter* empowers the court to make orders compelling "a party [to] take steps to provide hardware, software or other supporting resources required to enable access to electronic material provided by that party".[12]

15 The pragmatic approach for legacy databases may therefore be to grant the requesting party an opportunity to access and identify the relevant records in the database and for parties to agree on some open technical standard by which the discoverable records may be extracted and disclosed. A discussion of technical interchange formats for the actual disclosure of discoverable documents is undertaken below.[13]

10 [2006] FCA 1802.
11 Notes to the Amendments to the Federal Rules of Civil Procedure, at p 28.
12 Paragraph 2.8.3 of Supreme Court of Victoria's Practice Note No 1 of 2007.
13 *Infra*, n 53 and the discussion in the accompanying main text.

### B. *Accessibility and costs*

16 As the options and capacity for electronic storage of information expand, the issues of accessibility and costs have come to the fore. It is therefore not surprising that recent developments have sought to find ways to address these concerns. With the growing capacity of hard disk drives and optical storage media, the tendency is to hoard as opposed to discard. Many organisations have a backup solution for both personal computers and network storage. Additionally, larger organisations have off-site backup for disaster recovery or business continuity purposes. And of course, even if electronically stored documents are deleted, they can be recovered forensically.

17 The categories of storage were considered in the first of the Zubulake case, *Laura Zubulake v UBS Warburg* (*Zubulake I*),[14] by Shira A Scheidnlin, USDJ, to comprise the following:

> (a) Active, online data would comprise the most frequently accessed and accessible category of storage. One key characteristic is access speed which is the fastest of the five categories; this category would include information stored on hard drives.
>
> (b) Near-line data would consist of information stored on removable media like optical discs housed in jukeboxes with mechanical arms that automatically load the required optical disc. There will be delays in the mechanical loading but once loaded, access can be relatively quick (although not as fast as hard drives).
>
> (c) Offline storage or archives are used for storing information on media separately from the access device (*eg* optical disc and tape drives) and accessed only when required. There is no automated loading mechanism as in near-line data. Typically, the storage media are kept in cupboards or even off-site for disaster recovery purposes.
>
> (d) Backup tapes are used to store large quantities of information at a relatively low price per megabyte. Information stored on backup tapes is usually compressed, making restoration more time consuming and expensive. Access speed is slow and storage is almost invariably offline.

14 217 FRD 309 (SDNY 2003).

(e) Erased, fragmented[15] or damaged data as a category comprise both data which, though deleted, is still recoverable from the hard drive. Similarly, while damaged data cannot easily be accessed under normal operations, forensic experts have tools to enable recovery of such information from the file fragments which are still on the storage medium.

18 Shira A Scheidnlin, USDJ, opined that "[of] these, the first three categories are typically identified as accessible, and the latter two as inaccessible".[16] The issue of accessibility has a direct relation to the costs of access and hence the costs of compliance with a discovery request. While storage media are fairly standard, the storage formats can be proprietary. This is particularly true for backup systems which employ extensive data compression using proprietary techniques and possibly file formats. Additionally, there are also legacy systems and file formats which may pose hurdles to accessibility. The cost of accessibility to such proprietary and legacy systems and file formats can be quite prohibitive. Accessibility to the electronically stored documents is only one factor of the cost equation. Another factor is the human resource cost required to review the documents recovered from such backup and legacy systems. For example, in the *Zubulake* case, the estimated cost to restore, review and discover 600 e-mails from five backup tapes amounted to almost US$20,000.[17]

19 In the UK, the breadth of discoverable documents is equally wide. Under the UK Civil Procedure Rules, "in addition to documents that are readily accessible from computer systems and other electronic devices and media", documents stored on servers and backup systems and even metadata and deleted documents are similarly discoverable.[18]

### *C. Proportionality and cost-shifting*

20 The issues of restricting the scope of discoverable electronic documents and dealing with the costs of electronic discovery are the subject of a series of cases in the US. Some of the principles of these cases

15 Fragmented data should not actually be in this last category. The learned USDJ did not fully appreciate the distinction with damaged file fragments which are potentially recoverable and fragmented files which slow down access speed but are accessible as active, online data.

16 *Supra*, n 14 at 24.

17 See *Zubulake III*, 216 FRD 280 (SDNY 2003).

18 *Supra*, n 5.

have been legislated in the recent amendments to the US Federal Rules of Civil Procedure. We will consider first the developments in the US before turning to similar developments in the UK and Australasia.

*(1) Developments in the United States*

21 Generally, the responding party to a discovery request bears the costs. Given the resource intensity and cost of recovering electronically stored documents, reviewing the potentially voluminous documents thus recovered and the costs of technical experts in the process,[19] the US courts have employed the proportionality test[20] to limit the scope of discovery and cost-shifting[21] in order to apportion some of the cost of compliance with the discovery request to the requesting party.

22 The factors for consideration were first enumerated by James C Francis IV, US Magistrate, in *Rowe Entertainment v The William Morris Agency*,[22] as the following eight:

(a) the specificity of the discovery requests;

(b) the likelihood of discovering critical information;

(c) the availability of such information from other sources;

(d) the purposes for which the responding party maintains the requested data;

(e) the relative benefits to the parties of obtaining the information;

(f) the total cost associated with production;

(g) the relative ability of each party to control costs and its incentive to do so; and

(h) the resources available to each party.[23]

23 In *Zabulake I*, these were modified to the following seven factors:

19 See discussion, *infra*, n 52 and the accompanying discussion in the main text.
20 See Rule 26(b)(2), US Federal Rules of Civil Procedure.
21 See Rule 26(c), US Federal Rules of Civil Procedure.
22 205 FRD 421 (SDNY), aff'd, 2002 WL 975713 (SDNY May 9, 2002).
23 *Id*, at 429.

(a) The extent to which the request is specifically tailored to discover relevant information;

(b) The availability of such information from other sources;

(c) The total cost of production, compared to the amount in controversy;

(d) The total cost of production, compared to the resources available to each party;

(e) The relative ability of each party to control costs and its incentive to do so;

(f) The importance of the issues at stake in the litigation; and

(g) The relative benefits to the parties of obtaining the information.[24]

24 In *Rowe Entertainment v The William Morris Agency*, the court found that both parties had the resources to bear their own costs and no order was made to shift the costs of compliance with the discovery order. In *Zubulake III*, Shira A Scheidnlin, USDJ, ordered a 75–25 apportionment of costs of compliance with the discovery request, thereby shifting 25% of the costs from the responding party (UBS) to the requesting party, Zubulake.

25 Recent amendments to the US Federal Rules of Civil Procedure, which took effect on 1 December 2006, have refined this proportionality. Under the new Rule 26(b)(2)(B), "[a] party need not provide discovery of electronically stored information from sources [which are identified] as not reasonably accessible because of undue burden or cost". If good cause is shown, the court may order discovery but would specify conditions. Previous cost-shifting orders were made as such conditions under this Rule.

26 The considerations for good cause, or the proportionality test, remain unchanged. In the Notes to the Amendments,[25] the following factors were enumerated as appropriate considerations:

24 *Zubulake I*, *supra*, n 14 at 32.
25 <http://www.uscourts.gov/rules/EDiscovery_w_Notes.pdf>.

(a) the specificity of the discovery request;

(b) the quantity of information available from other and more easily accessed sources;

(c) the failure to produce relevant information that seems likely to have existed but is no longer available on more easily accessed sources;

(d) the likelihood of finding relevant, responsive information that cannot be obtained from other, more easily accessed sources;

(e) predictions as to the importance and usefulness of the further information;

(f) the importance of the issues at stake in the litigation; and

(g) the parties' resources.

*(2) Developments in the United Kingdom and Ireland*

27 While there may not be any precedent for a court-ordered shifting of costs of compliance with a discovery request to the requesting party, there is at least one case where the High Court of Ireland acceded to an application by the requesting party for the submission of hard drives in the responding party's laptop to a technical expert for the purpose of electronic discovery of deleted documents, upon the requesting party's undertaking to bear the costs of the technical expert.[26]

28 In *Robert Kouzaris v Bass Taverns Ltd*,[27] which was decided before the Civil Procedure Rules were enacted in 1999, the plaintiff alleged that defendants agreed to employ him as a deputy manager and had requested the discovery of the defendant's database of job vacancies. However, his request for discovery of the defendant's database was not allowed on the basis that the Plaintiff's claim was of doubtful legal merit. While this case may not be authority for the concept of proportionality, it gives some support for the argument that any order for electronic discovery should be made with the consideration of the strength of the case.

26 *James McGrath v Trintech Technologies Ltd & Trintech Group PLC* [2004] IEHC 342.
27 [1998] EWCA Civ 551.

29 In the UK, the concept of proportionality is similarly applicable as an overriding objective to the Civil Procedure Rules. Rule 1.1(2)(*c*) requires that the following factors be considered in "dealing with the case in ways which are proportionate":

(a) the amount of money involved;

(b) the importance of the case;

(c) the complexity of the issues; and

(d) the financial position of each party.

30 Rule 31.7 imposes on a party the obligation to make a reasonable search for documents. The reasonableness of a search is determined with reference to the following factors set out in r 31.7(2):

(a) the number of documents involved;

(b) the nature and complexity of the proceedings;

(c) the ease and expense of retrieval of any particular document; and

(d) the significance of any document which is likely to be located during the search.

31 In the Practice Direction to Part 31 of the CPR, the ease and expense of retrieval are to be assessed with reference to considerations that deal with issues relating to accessibility and costs. Under accessibility, the location and sources of relevant documents and the likelihood of locating relevant data are to be considered; as is the likelihood of material alteration to the documents to be discovered introduced as a consequence of the processes of recovery, disclosure or inspection. The Practice Direction additionally requires the consideration of whether such documents or data are accessible "taking into account alterations or developments in hardware or software systems used by the disclosing party and/or available to enable access to such documents".[28] This consideration is sufficiently broad to cover both documents stored using backup systems and data which is not readily accessible outside of the legacy or customised systems in which the data resides.

28 Paragraph 2A.4(*c*)(i) of the Practice Direction to Part 31 of the CPR.

32 As for consideration of costs, the cost of recovering such electronic documents and providing disclosure and inspection of relevant documents are factors that have to be considered. While there is no specific empowerment for cost-shifting, the court's general powers of management under r 3.1, in particular the court's power to make orders subject to conditions[29] should be sufficient for the court to order that the requesting party bear a portion of the costs of compliance with the discovery request in appropriate cases.

*(3) Developments in Australia & New Zealand*

33 The *Zubulake* line of cases was considered in the New Zealand Court of Appeal's decision in *Commerce Commission v Telecom Corporation of New Zealand Limited*.[30] The case was an appeal from an order for discovery of a "test" sample of electronically stored documents and for costs of this to be shared 50–50 between appellant and respondents. The Court of Appeal opined that although the New Zealand High Court Rules specifically provided for only shifting of costs in pre-commencement discovery orders and discovery orders against a non-party, there was nothing to prevent the court from making cost-shifting directions as a term or condition of an interlocutory order if it was just to do so. However, the Court of Appeal found that the respondents had migrated their servers to a different platform after litigation was anticipated and in so doing, had not sufficiently preserved the means of access to documents which were potentially relevant, and that they should have archived and maintained potentially relevant documents in an accessible form. As a result of their failure to do so, the respondents were ordered to bear the full costs of the discovery of the "test" sample of electronically stored documents. The Court of Appeal left the door open for cost-shifting when a further general discovery order might be made after the results of the sampling was known.

34 The Supreme Court of Victoria recently updated its *Guidelines for the Use of Technology in Litigation in any Civil Matter* by issuing an updated guideline via Practice Note No 1 of 2007.[31] The Victorian Practice Note differs from the US Federal Rules of Civil Procedure and the UK Civil Procedure Rules in that it introduces an optional set of rules

29 Rule 3.1(3)(a), CPR.
30 [2006] NZCA 252.
31 <http://www.supremecourt.vic.gov.au/CA256CC60028922C/page/Practice+and+Procedure-Practice+Notes+&+Statements?OpenDocument&1=20-Practice+and+Procedure~&2=80-Practice+Notes+%26+Statements~&3=~>.

that parties have to opt into by agreement.[32] The court's power of compulsion extends only to ordering "that parties or their lawyers meet to discuss how best to use technology in the management of discoverable documents".[33]

35 Under s 6.3, the court may order that discovery be made electronically. Issues relating to proportionality and costs have to be addressed by parties and their lawyers.[34] Proportionality considerations include the categories and volume of discoverable documents and the desirability of limiting search efforts "where these efforts are considered to be unduly burdensome, oppressive or expensive having regard to the importance"[35] of the documents to be discovered. The Practice Note also incorporates the concept of cost-shifting where the requesting party is ordered to "bear the costs (in whole or in part) of searching for and discovering such discoverable documents".[36]

### *D. Solicitors' obligations in relation to the preservation and discovery of electronic documents*

36 Given the growth in the volume of electronically stored documents, the management of the increased volume of documents that are discoverable is not without its pitfalls. Little surprise then that recent legislative developments have also sought to address issues relating to how the obligation to discover electronic documents is to be managed while concomitantly addressing inadvertent disclosures of privileged documents.

37 A litigant's obligation to discover documents is one of the common features of civil procedural rules in common law jurisdictions. The translations of these rules have seen some divergence on both sides of the Atlantic. In the US, the duty to discover extends to the obligation to preserve documents when litigation is anticipated. As described by Shira A Scheindlin, USDJ, in *Zubulake IV*, "The duty to preserve attached at the

32 The other aspect of the Practice Note which distinguishes it from the US Federal Rules of Civil Procedure and the UK Civil Procedure Rules is that a substantial part of it is devoted to the protocols or file formats for electronic discovery; this is discussed in greater detail, *infra*, n 58 and the discussion in the accompanying main text.
33 Practice Note No 1 of 2007, Supreme Court of Victoria at para 2.8.2.
34 *Id*, at para 6.7.
35 *Id*, at para 6.7.3.1.
36 *Id*, at para 6.7.3.2.

time that litigation was reasonably anticipated."[37] This duty to preserve requires that the potential litigant put in place a litigation hold:

> The scope of a party's preservation obligation can be described as follows: Once a party reasonably anticipates litigation, it must suspend its routine document retention/destruction policy and put in place a "litigation hold" to ensure the preservation of relevant documents. As a general rule, that litigation hold does not apply to inaccessible backup tapes (e.g., those typically maintained solely for the purpose of disaster recovery), which may continue to be recycled on the schedule set forth in the company's policy. On the other hand, if backup tapes are accessible (i.e., actively used for information retrieval), then such tapes would likely be subject to the litigation hold.[38]

38 In *Zubulake V*,[39] the counsel duty to advise his client on its obligation to preserve potentially discoverable documents was elaborated to include the communication of the litigation hold and to ascertain his client's document management habits:

> In sum, counsel has a duty to effectively communicate to her client its discovery obligations so that all relevant information is discovered, retained, and produced. In particular, once the duty to preserve attaches, counsel must identify sources of discoverable information. This will usually entail speaking directly with the key players in the litigation, as well as the client's information technology personnel. In addition, when the duty to preserve attaches, counsel must put in place a litigation hold and make that known to all relevant employees by communicating with them directly. The litigation hold instructions must be reiterated regularly and compliance must be monitored. Counsel must also call for employees to produce copies of relevant electronic evidence, and must arrange for the segregation and safeguarding of any archival media (e.g., backup tapes) that the party has a duty to preserve.
>
> Once counsel takes these steps (or once a court order is in place), a party is fully on notice of its discovery obligations. If a party acts contrary to counsel's instructions or to a court's order, it acts at its own peril.[40]

39 Where after the litigation hold is in place and there is spoliation or destruction of potentially discoverable documents, the consequences follow the nature of the spoliation. Where there was negligent destruction

37 *Zubulake IV*, 220 FRD 212 (SDNY 2003) at 218; <http://www.krollontrack.co.uk/legalresources/zubulakeIV.pdf>.
38 <http://www.krollontrack.co.uk/legalresources/zubulakeIV.pdf.> at p 12.
39 2004 WL 1620866 (SDNY July 20, 2004).
40 *Id*, at pp 46 and 47.

of documents and the party seeking discovery is able to demonstrate that the missing document support its case, adverse inference may be drawn. Where there was wilful destruction of documents, the missing documents are instead presumed to be relevant.[41] Apart from evidentiary presumptions, spoliation is also a tort for which damages may be awarded against the culpable party.

40 In the rest of the common law jurisdictions, there may not be an overt litigation hold obligation the standard, and the consequences following non-compliance, which are articulated with as much clarity and precision as in the US. The solicitor's general obligation to preserve discoverable documents was recently summarised in the High Court decision in *Hong Leong Singapore Finance Ltd v United Overseas Bank Ltd* by Sundaresh Menon JC as requiring —

> solicitors to take positive steps to ensure that their clients appreciate at an early stage of the litigation, promptly after the writ is issued if not sooner, not only the duty of discovery and its width but also the importance of not destroying documents which might possibly have to be disclosed.[42]

In his Honour's view, the solicitor's obligation to discover relevant documents did not end with giving instructions to his client to preserve discoverable documents but extended to taking steps to ensure that discoverable documents are properly preserved.

41 In the context of preserving electronically stored documents, the question then becomes whether the onset of litigation requires that special steps be taken. Bearing in mind the possible sources of discoverable electronically stored documents, for example, backup tapes and deleted or erased data, there are immense practical implications for ordinary business operations of organisations. Backup tapes are frequently recycled and reused after a period of time, ranging from months to years. Should this practice therefore be suspended with the onset of litigation? Similarly, the hard disks of employees will contain potentially recoverable and discoverable deleted or erased data. As the employee continues using his computer, the chances of successful recovery of deleted or erased file fragments decrease as the unused hard disk sectors are overwritten with either new files or temporary files.

41 *Ibid.*
42 [2007] 1 SLR 292, at [33] and [34], citing with approval the statement of principle contained in *Singapore Civil Procedure 2003* (Sweet & Maxwell Asia, 2003) at para 24/1/5.

Similarly, the metadata of files stored on hard disks changes whenever such files are accessed – even if only to view or print their content without changing that content. How then does the solicitor's obligations of discovery translate into the practical handling of varied sources of potentially discoverable electronically stored documents?

42 There is authority to suggest that once litigation commences, the obligation to discover relevant documents extends to altering the ordinary practice of overwriting backup tapes that are maintained for disaster recovery purposes. Hence, in the Australian Federal Court of Appeal case of *BT (Australasia) Pty Ltd v State of New South Wales (No 9)*, Sackville J opined – with regard to the practice of overwriting backup tapes maintained for disaster recovery purposes – that the practice should have been ceased earlier. The learned Judge did however appreciate the fact that the delay in putting this practice on hold "was the product of a failure to appreciate that … customary procedures should have been modified to ensure full compliance with its discovery obligations".[43]

*(1) Document retention or destruction policies and inadvertent alteration*

43 Between mandatory statutory record retention provisions[44] and criminal sanctions for intentional destruction of evidence,[45] and the solicitor's duty to preserve discoverable documents once litigation commences, lies the penumbra of uncertainty where litigation is reasonably anticipated but not yet commenced. The question arises as to what is the potential litigant's duty with regard to potentially discoverable electronically stored documents. The issues which arise are twofold: ensuring continued access to and preserving such potentially discoverable electronically stored documents. This area has seen some interesting litigation in recent years.

44 On the first issue, there is *dicta* in the New Zealand Court of Appeal decision in *Commerce Commission v Telecom Corporation of New Zealand Limited*[46] to suggest that there is an obligation on potential litigants to preserve the means of access to potentially relevant documents

43 [1998] 363 FCA.
44 See for example, s 199(2), Companies Act; ss 12(3) and 13(4), Charities Act; ss 36(5) and 38, Financial Advisers Act; s 46(2), Goods and Services Tax Act; s 67(1), Income Tax Act; s 25(2), Limited Liability Partnerships Act 2005; ss 102(3), 120(3), 131(1)(*c*) and 131(2)(*b*), Securities and Futures Act; and s 28(4), Trust Companies Act.
45 See for example, s 8D, Companies Act and s 204, Penal Code.
46 [2006] NZCA 252.

when litigation is anticipated. In this case, the issue arose as the defendant conducted a migration of its servers after litigation was anticipated and in the process backup tapes created previously were no longer accessible. It was observed by Robertson J that "Telecom should have archived, stored and maintained in an accessible form, information of the sort which is now sought. Its failure to do so must be laid at its door".[47]

45 The issue of preservation was considered in the Supreme Court of Victoria's Court of Appeal decision in *British American Tobacco Australia Services Limited v Cowell (as representing the estate of Rolah Ann McCabe, deceased)*,[48] where potentially discoverable documents were destroyed before commencement of litigation. The Court of Appeal opined that:

> where one party alleges against the other the destruction of documents *before the commencement* of the proceeding to the prejudice of the party complaining, the criterion for the court's intervention (otherwise than by the drawing of adverse inferences, and particularly if the sanction sought is the striking out of the pleading) is whether that conduct of the other party amounted to an attempt to pervert the course of justice or, if open, contempt of court occurring before the litigation was on foot.[49]

46 There is therefore some basis to suggest that where litigation is reasonably anticipated, document retention or destruction policies may have to be suspended. This would also extend to a temporary suspension of recycling and reusing backup tape drives. What is still woefully uncertain is the treatment of metadata and deleted or erased data residing on employees' computers. In this regard, there is some statutory exemption in Rule 37(f) of the US Federal Rules of Civil Procedure, which provides that there be no sanctions for failure to provide electronically stored information lost as a result of routine, good-faith operation of an electronic information system. This no doubt covers the situation where litigation has commenced and loss of metadata or potentially recoverable deleted or erased data arises as a result of the routine use of employees' computers in the ordinary course of business.

### *E. Inadvertent disclosure of privileged documents*

47 Given the increased volume of discoverable electronic documents, and the relative ease with which voluminous documents may

47 *Ibid*, at [54].
48 [2002] VSCA 197.
49 *Ibid*, at [175].

be discovered electronically, the recent legislative amendments have sought to address the issue of inadvertent disclosure of privileged documents. Under the UK Civil Procedure Rules, where a party inadvertently discloses a privileged document, the adverse party seeking to rely on it may do so only with the permission of the court.[50] This is the same position under O 24, r 19 of our Rules of Court.

48 The US Federal Rules of Civil Procedure approaches this problem from a different direction. Under r 26(b)(5)(B), if privileged information or trial preparation material is produced in discovery, the party asserting privilege has to notify the recipient of such information of the basis for such a claim. After being notified, the recipient must "promptly return, sequester, or destroy the specified information and any copies"[51] and may not make use of or disclose the privileged information until such claims of privilege have been resolved.

49 Additionally, r 26(f)(4) was amended to require parties to confer, at least 21 days before a scheduling conference, to discuss issues relating to claims of privilege or of protection of trial preparation material, including agreement on a procedure to assert such claims after production of the documents. In the Notes to the Amendments, several options of such procedures are discussed. There is a "quick peek" arrangement where the requested material is provided for inspection without waiver and the requesting party is allowed to designate which documents it wishes to be produced. Only then will the responding party conduct a proper review of the designated documents before disclosure. Another option is the "clawback agreement" where documents are produced without intent to waive privilege and the responding party may identify documents which have been mistakenly produced, which the requesting party has to return. The intent of amending r 26(f)(4) is to require that such issues be addressed by parties and their lawyers prior to, and with the courts during, the scheduling conference.

## II. Discovering documents electronically

50 In this next section of the article, we turn to consider the process by which documents may be discovered electronically. We will look at recent trends to impose an obligation on litigants to address issues relating to electronic discovery early in the litigation process. In this

50 Rule 31.20, UK Civil Procedure Rules.
51 Rule 26(b)(5)(B), US Federal Rules of Civil Procedure.

section, we will also look at the role of technical experts in the electronic discovery process; before wrapping up with an examination of how documents thus discovered may be disclosed electronically.

### A. *Role of technical experts*

51 A significant reason for the high cost of electronic discovery is the role which technical experts play in the electronic discovery process. A consideration of the methodologies employed by the technical experts in the *Rowe* and *Zubulake* cases will show a considerable divergence in approaches.

52 In *Zubulake III*, an external expert was appointed by the responding party to restore the backup tapes and to perform a search using search terms provided by its lawyers to comply with the discovery request. After the e-mails were retrieved, the responding party's lawyers reviewed their content for relevance and privilege. Thereafter, the paralegals prepared the selected documents for production in compliance with the discovery request.

53 In *Rowe Entertainment v The William Morris Agency*, a quick peek arrangement was adopted. Each party appointed their respective experts. The requestor's expert obtained an image of the hard drive and backup tapes. Next, the requestor's counsel formulated a search procedure, including search phrases, for parties to agree upon. Thereafter, the requestor's expert performed the search and showed the documents retrieved to the requestor's counsel on an "attorneys'-eyes-only" basis. After the requestor's counsel selected the documents to be produced, the responding party's counsel reviewed them and designated any confidential or privilege documents.

54 As the market for professional services in electronic discovery is still developing, the standards and guidelines for the provision of electronic discovery services are still developing. The Electronic Discovery Reference Model is one such attempt to standardise practices.[52] A detailed consideration of the steps in the reference model is beyond the scope of this article. It suffices to note that the process requires that the technical expert work closely with the legal professionals, particularly at the stages of identification, processing, review and analysis.

52 <http://www.edrm.net/wiki/index.php?title=Main_Page&oldid=7898>.

### B. *Obligation to address electronic discovery issues*

55 Unsurprisingly, legislative amendments to civil procedural rules have focused on ensuring that issues relating to electronic discovery are addressed early in the litigation process instead of prescribing any particular process. Apart from issues relating to proportionality, accessibility and costs, there are issues relating to inadvertent disclosure of privileged documents and the actual process of conducting electronic discovery that need to be addressed.

56 Under s 2A.2 of the Practice Direction to Part 31 of the UK Civil Procedural Rules, parties are required to discuss any issues that may arise regarding searches for and the preservation of electronic documents before the first Case Management Conference. Additionally, parties are also to co-operate at an early stage as to the format in which electronic copy documents are to be provided.

57 Section 2A.5 of the Practice Direction deals particularly with keyword searches. It proposes that even where a full review of each and every document in parties' electronic storage system may be unreasonable, it may be reasonable for parties to agree (if possible) on keyword searches for discovery. Hence, such keyword search phrases may be part of the matters discussed by parties prior to or at the Case Management Conference. It is also equally possible to specify keyword searches in applications for specific discovery.

58 A similar process is set out in the amended Rule 26(f) of the US Federal Rules of Civil Procedure. An obligation is placed on parties to confer, 21 days before a scheduling conference, to discuss any issues relating to preserving discoverable information and to develop a discovery plan that addresses, *inter alia*, "any issues relating to disclosure or discovery of electronically stored information, including the form or forms in which it should be produced".[53]

### C. *Technical standards for the disclosure of discovered documents electronically*

59 Where there is a lack of standards and guidelines as far as the provision of electronic discovery services is concerned, there is a plethora of formats, forms or protocols for the disclosure of electronically stored

53 Rule 26(f)(3), US Federal Rules of Civil Procedure.

documents. The UK Civil Procedural Rules do not go into much detail apart from requiring parties to "co-operate at an early stage as to the format in which electronic copy documents are to be provided on inspection".[54]

60 The US Federal Rules on Civil Procedure contains a similar exhortation in Rule 26(f)(3): parties are to address as part of their discovery plans "the form or forms in which [electronically stored information] should be produced." In the Rule dealing with production of documents and electronically stored information, the following procedure is set out for compliance with requests for the production of discoverable electronically stored documents or information:

> (a) The request may state the form or forms in which the electronic documents are to be produced.
>
> (b) The responding party may object to the requested form or forms.
>
> (c) If there is such an objection, or if no form or forms have been stated by the requesting party, the responding party must state the form or forms it intends to use.

61 As a minimum standard, electronically stored information must be produced in the form or forms in which it is ordinarily maintained or in a form or forms that are reasonably usable.[55] On this minimum standard, if the requesting party fails to specify the form or forms – whether through inadvertence or lack of particular knowledge of how the discoverable electronic documents are stored – it is open to the responding party to provide the electronic documents in the form or forms in which they are ordinarily maintained, even if such form or forms are legacy file formats or proprietary storage media. Of course, it is then open to the requesting party to require that the electronic documents be produced again in a reasonably usable form, but this opens the door to further dispute and oppressive conduct. Each page of documents, particularly lengthy documents, can be produced as image files to hamper discovery; e-mails and web pages can be discovered as pure text documents, showing the lengthy (and incomprehensible) header and other markup text.

54 Section 2A.3, Practice Direction to Part 31 of the UK Civil Procedure Rules.
55 Rule 34(b)(ii), US Federal Rules of Civil Procedure.

62 In contrast with the US and UK approaches, the Victorian Supreme Court's approach in Practice Note 1 of 2007 places substantial emphasis on setting a set of default standards and draft protocols for disclosing electronically stored documents. Hence, court documents are to be in Microsoft Word format or Microsoft Excel format for lists and schedules of discoverable documents, court book indexes and exhibit lists.[56] The Practice Note also sets out a standard set of metadata for lists or schedules of discoverable documents;[57] and as a minimum, discoverable documents and information are to be disclosed as single page TIFF files.[58] The draft protocol accompanying Practice Note 1 of 2007 deals with the following aspects:

(a) exchange regime which describes the file formats, exchange medium, contents therein and how the medium is labelled;

(b) proposed party codes;

(c) document numbering which describes the format for the document numbering regime that is used as the unique identifier for all hard copy documents;

(d) imaging standards for the scanning of documents; and

(e) specification of a master table containing the metadata key and an image table containing an index to the documents disclosed to be exchanged.

63 While Practice Note 1 of 2007 specifies a default standard and protocol, parties to the litigation are free to depart from it in favour of an agreed protocol. Where one party proposes an alternative protocol and parties are not able to come to an agreement, that party may apply to court for an order as to which protocol is to apply.[59]

56 Section 4.2.2, Supreme Court of Victoria's Practice Note 1 of 2007.
57 Section 4.2.3, Supreme Court of Victoria's Practice Note 1 of 2007.
58 Section 4.2.4 and 4.2.5, Supreme Court of Victoria's Practice Note 1 of 2007; Tagged Image File Format, which is a file format used mainly for the storage of images.
59 Section 4.6, Supreme Court of Victoria's Practice Note 1 of 2007.

## III. Concluding remarks

64 A survey of international legislative developments of this nature can only lead to one conclusion: that Singapore should study these developments and adopt an approach that synthesises the best features into a set of rules and practice directions that is best suited for civil litigation practice in Singapore.

65 While the scope and definition of discoverable documents should not be fixed in legislation, the courts in Singapore would no doubt adopt a robust and incisive approach in ensuring that a line of distinction is maintained that separates discoverable documents from the media in which they are stored. Such a distinction would preserve the balance between a litigant's obligation to discover relevant documents and the undesirable abuse of the discovery process to empty out filing cabinets, both physical and electronic. In this light, care would have to be taken in cases where electronic databases are the subject of a discovery application to ensure that only relevant records, and not the entire database, are disclosed.

### *A. Proportionality and accessibility*

66 One of the areas in which legislative activities in the jurisdictions surveyed have focused is to address issues relating to proportionality, accessibility and costs. With the broadening range of storage media and the adoption of disaster recovery practices in many organisations, a request for discovery can quickly become too broad and inclusive, thereby hugely inflating the costs of compliance with such requests, which have traditionally been borne by the disclosing party. Although our Rules of Court – unlike the UK Civil Procedure Rules – do not overtly express the principle of proportionality, it may be argued that concerns relating to proportionality may be addressed through the twin tools of necessity "either for disposing fairly of the cause or matter or for saving costs" in O 24, r 13. However, the certainty of legislative intervention would of course be preferred not least that the Rules Committee may also take the opportunity to enumerate the relevant factors for consideration, as has been done in both the US Federal Rules of Civil Procedure and the UK Civil Procedure Rules and Practice Directions thereto.[60]

60 An interesting debate would be to what extent such enumerations of factors for consideration in the exercise of discretion should be legislated in the Rules of Court and to what extent they may be contained in the Practice Directions. Unlike the Practice Directions to the UK Civil Procedure Rules, the Practice Directions of the

67 Closely related to the issue of proportionality is the issue of accessibility of electronically stored documents. The issue has two facets: the first relating to the sources and location of electronically stored documents, and the second relating to the means of accessing such electronically stored documents, especially where the technical form or format requires legacy or proprietary software. The obligation to maintain and grant reasonable access should be legislatively grafted into O 24 to ensure that the requesting party's right to electronic discovery is not rendered illusory. As for the actual technical approach, this may be best left to parties to agree upon – whether to provide disclosure in an open technical format or to provide the means of accessing. This calls for parties to discuss issues relating to electronic discovery to ensure that such issues may be resolved or addressed early in the litigation process.

*(1) Obligation to address electronic discovery issues*

68 In this regard, some proposed amendments to the Rules of Court include amending O 25, r 3 to include a duty for parties to discuss and agree, at the Summons For Direction stage, issues which may foreseeably arise from the discovery of electronically stored documents and the possibility of providing discovery in electronic form. In an area where industry practices are still evolving and technical standards have not finally settled, such an approach is preferred over a prescriptive one. Getting parties to address electronic discovery issues will also provide an opportunity for an agreement to be reached as to how inadvertent disclosures of privileged documents, the risk of which increases with the electronic discovery of voluminous documents, are to be dealt with; with the option of applying to court under O 24, r 19 as a last resort.

### *B. Cost-shifting*

69 As litigants' attention is increasingly focused on issues relating to electronic discovery, requests for electronic discovery will no doubt increase. The principle of proportionality works to ensure that the scope of requests is not too broad but even with a focused request the cost of compliance can quickly escalate. There is a limit to the extent parties can agree in an adversarial system, even if there is a legislative duty to discuss such issues. Very soon, the courts will be called on to make a decision and

Singapore courts have traditionally kept to more administrative matters. In this regard, it may well be that the Rules of Court would be the more appropriate repository of such enumerations of factors for consideration.

it will be useful if the courts have at their disposal another tool to ensure that discovery requests, especially for electronic documents, are not used to oppress the opposing party.

70 Once a policy review decides in favour of the desirability of providing the courts with the option of ordering the requesting party to bear part or the whole of the costs of compliance, the question becomes whether legislative amendment is necessary. Arguably, the courts' inherent power in O 92, r 5 to "make or give such further orders or directions incidental or consequential to any judgment or order as may be necessary in any case" may be sufficient to allow cost-shifting orders in an appropriate case. This was the approach approved by the New Zealand Court of Appeal.[61]

### *C. Solicitors' obligations in relation to the preservation and discovery of electronic documents*

71 With the increased range of potentially discoverable electronically stored documents, the lengthy periods of time that backup tapes often span and the volatility of electronically stored documents, perhaps the single area where a thorough review is called for is the solicitor's duty with regard to the discovery of electronically stored documents. The language setting out the solicitor's obligation to take steps to ensure that discoverable documents are properly preserved promptly after the writ is issued[62] may be more suitable for hard copy documents but may set the bar too high where electronically stored documents are concerned. Some guidance is needed to ensure that solicitors do not take a too-inclusive approach in document preservation – for example, requiring all employee computers and network storage to be mirrored and preserved or sequestered – which may unnecessarily impede the ordinary business operations of organisations involved in litigation.

72 Such a review would also consider issues relating to solicitors' obligations in preserving electronically stored documents when litigation is reasonably anticipated in addition to the scope of solicitors' duty once litigation commences. A balance need be struck between the desirability of imposing on the solicitor the duty to ensure that his client preserve potentially discoverable electronic documents, and the reality that the

61 *Supra*, n 30.
62 *Supra*, n 42 and the discussion in the accompanying main text.

breadth of available storage options and the volatility of electronic documents, it is often a difficult exercise to ensure that any litigation hold is put in place properly. Such a review may also recommend legislative safe harbours like the US Federal Rules of Civil Procedure's exemption of electronically stored information lost as a result of routine, good faith operation, to ensure a proper balance is struck.[63] It is also desirable that the consequences of failure to ensure proper preservation be articulated. The review recommended should no doubt be undertaken with input from the Bar as the effectiveness of any recommendations coming forth from such a review would depend on the level of awareness and preparedness of the profession. Codes of conduct or practice may therefore also be required to ensure uniformity during implementation.

### D. *Providing discovery of documents electronically*

73 Finally, the approach of promulgating a set of minimum technical standards adopted by the Supreme Court of Victoria in its *Practice Direction No 1 of 2007* should also be considered for implementation in Singapore. With the maturity of our courts' Electronic Filing System, it is the ideal platform for providing the discovery of documents electronically; alternatively, its upcoming replacement, the integrated Electronic Litigation System, can be the preferred platform to facilitate such electronic discovery.

74 The promulgation of a set of minimum technical standards to be adopted would ensure that documents are disclosed in such open technical standards that will allow parties to access the content of disclosed documents meaningfully.[64] This will enable solicitors to benefit from the use of litigation support systems, desktop search systems and other software tools in searching, organising, managing and manipulating discovered electronic documents in the course of trial preparation. This will also facilitate the use of evidence presentation tools to present such electronic documents during the trial. This would dovetail neatly with the courts' goals in encouraging a higher level of use of technology in the litigation process and for evidence presentation during trial.

63 *Supra*, n 49 and the discussion in the accompanying main text.
64 In other words, text remain text and are therefore searchable.

## IV. Postscript

75 Since the article was authored, there have been some developments in the law on electronic discovery. This postscript seeks to highlight some recent developments.

### *A. Discovery of documents stored in volatile memory*

76 The discussion thus far has focused on the discovery of documents stored on non-volatile media like hard disk drives and optical discs.[65] For the purpose of determining copyright infringement, reproduction in volatile Random Access Memory (RAM) has long been held to amount to infringement, hence the need for statutory exclusions that exempt "temporary or transient reproduction" of copyrighted works if such "reproduction is made incidentally as part of the technical process of making or receiving a communication and the act of making the communication itself does not constitute an infringement".[66] The question of whether documents stored in RAM are discoverable was decided in the affirmative in the recent case of *Columbia Pictures Industries v Justin Bunnell*[67] ("the *TorrentSpy* case").

77 In the *TorrentSpy* case, the US District Court of the Central District of California held that server log data stored temporarily in volatile RAM are discoverable. The case involves litigation between the film industry and the operators of TorrentSpy, a website which is accused of secondary copyright infringement. TorrentSpy is a website that hosted .torrent files, which contained the information necessary for peer-to-peer delivery of files over the BitTorrent network.[68] Users would search the website, download the .torrent file and use a BitTorrent client software to commence downloading of the files which the .torrent file related to. The plaintiffs argued that in order to support their case of secondary infringement, server log data had to be discovered as these were necessary to identify the Internet Protocol or IP addresses of the primary infringers (*ie* the users) and the .torrent files requested by (and provided to) them. The defendants argued that they did not store server log data as part of their business operations and that any server log data was stored only temporarily in their servers' RAM, which was sufficient for about six

65 *Supra*, n 1 and the discussion in the accompanying main text.
66 Section 38A(1) Copyright Act.
67 CV 06-1093 FMC(JCx).
68 BitTorrent is a peer-to-peer network for the delivery of files over the Internet; for more details, see <http://www.bittorrent.com/what-is-bittorrent>.

hours' worth of data before older data would be purged to make room for newer data.[69] The defendants did not enable the web server function which would write the server log to the hard disk.

78 The district judge held that incoming server log data was relevant and that data stored in RAM qualified as electronically stored data, which made such incoming server log data discoverable. The district judge further opined that server log data was information that the defendants already possessed, albeit in volatile RAM, and that an order compelling their production did not amount to an order requiring the defendants to create new documents. The defendants were therefore ordered to enable the web server function that would preserve the server log data by retaining a copy in non-volatile media; and the incoming server log was ordered to be redacted (to mask the actual IP addresses) before disclosure to the plaintiffs.[70]

79 Initial reactions to this decision raised concerns over privacy issues and whether the district judge was technically correct to equate storage in volatile RAM with electronically stored documents.[71] This author's views are that the district judge was probably correct in holding that information stored in volatile RAM are potentially discoverable electronically stored information on a plain reading of r 43(a) of the Federal Rules of Civil Procedure. However, while reproduction in volatile RAM may be sufficient for copyright infringement, storage in a more permanent form should be required for the more intrusive instrument of discovery and documents stored in temporary and transient storage in volatile memory should not be discoverable. Analogies with copyright law where substantial taking may amount to infringement may not be appropriate in the area of discovery, which deals with the disclosure of documents and information.

69 There was also the added complication that sometime during the pendency of the application, the defendants contracted with a third-party operator to cache .torrent files such that requests for such files were made through the third-party operator, which therefore also held potentially discoverable server log data, instead of from users directly.

70 Server log data held by the third-party operator was also discoverable as these were within the defendant's possession, custody and control.

71 *Cf* Jessie Seyfer, "RAM Ruling Portends E-Discovery Brawl" in *The Register*, 13 June 2007 <http://www.law.com/jsp/legaltechnology/pubArticleLT.jsp?id=118172553869 8>; and Greg Sandoval, "TorrentSpy ruling a 'weapon of mass discovery'" in *CNET News.com*, 14 June 2007 <http://news.com.com/2100-1030_3-6190900.html>.

80 The reasons for this are two-fold: First, discovery has traditionally dealt with "documents" which presupposes that the discoverable documents are discrete and intelligible, and that the party providing discovery knows (or is capable of knowing) of their existence and is capable of identifying them. These qualities (it is argued) are necessary in order for the party providing discovery to ascertain whether the documents requested for are in their possession, custody or power. Hitherto, electronically stored documents have been considered as existing either as individual files or discrete records in databases on non-volatile media. This author admits that if these qualities are met in electronic documents stored in RAM, the fact that the medium is volatile should not stand as an objection to their discovery. However, to this author's knowledge, RAM is used by the computer as a working memory and data stored in RAM are (in addition to being transient) not stored in the same manner and fashion as data stored on non-volatile media. Data which is required for the operation of the web server is stored in memory addresses, not as documents but as data in a form suitable for processing by the application logic and thereafter discarded. Think of RAM as analogous to a scratch pad which the computer uses to jot down notes in the course of performing its function, which is intended to be discarded once its function has been performed. Such notes may be in short hand or abbreviated, and often do not exist as discrete documents but data stored in memory addresses.

81 Second, as is illustrated by the *TorrentSpy* case, the retention of server logs in non-volatile memory would entail requiring the defendants to perform a function which they did not ordinarily perform as part of their business operations. Apart from questions relating to putting the defendants to incurring additional costs (which may be addressed by an appropriate cost-shifting order), the key point to note is that an additional operation is required to be performed by the web server to assemble the data stored in RAM and to write them into a log file on its hard disk. This function belies the fact that the discoverable document or information does not exist until this additional function has been performed. Sticking with the analogy of a scratchpad, it is tantamount to requiring the party providing discovery to assemble, compile and translate notes generated by its employees into proper documents in order to meet a discovery request. In this regard, the district judge may have overlooked the fact that the server logs did not exist until the function to write them onto the hard disk is enabled and this act amounted to requiring the defendants to create new documents.

82 The *TorrentSpy* order has been stayed pending appeal.

### *B. Default Standard for Discovery of Electronically Stored Information*

83 Further to the obligations to discuss electronic discovery issues and the default technical standards established under rr 26 and 34 of the US Federal Rules on Civil Procedure discussed above,[72] Local Rules in some Federal District Courts have been updated. A recent development is the Default Standard for Discovery of Electronically Stored Information ("the Default Standard") promulgated by the Federal District Court of Delaware,[73] which fleshes out in greater detail the obligations and technical standards established under rr 26 and 34 of the US Federal Rules on Civil Procedure.

84 One of the notable features of the Default Standard is the appointment of e-discovery liaisons by parties. The e-discovery liaison's role is to "promote communication and cooperation between the parties" and this is the person through whom "all e-discovery requests and responses shall be made".[74] An e-discovery liaison may be an attorney, employee of the party or a third-party consultant who is sufficiently familiar with the party's systems and capabilities to enable him to explain these systems and to answer electronic discovery questions. He must also be knowledgeable in the technical aspects of electronic discovery and will be required to participate in electronic discovery dispute resolution. One of the key functions of the e-discovery liaison is to facilitate reaching an agreement on the method and any restrictions concerning the conduct of electronic searches and the search terms and conditions.

85 Another appointment to be made by parties under the Default Standard is a retention coordinator who is responsible for the retention of electronically stored information and identifying the party's retention policies. The retention coordinator's role is to "work towards an agreement … that outlines the steps each party shall take to segregate and preserve the integrity of all relevant electronically stored information",[75] in order to avoid spoliation accusations. Presumably, the retention coordinator is likely to be an employee of the parties while the e-discovery liaison is often likely to be external technical experts.

72 *Supra*, n 53 and the discussion in the accompanying main text.
73 <http://www.ded.uscourts.gov/Announce/HotPage21.htm>.
74 *Id*, at para 3.
75 *Id*, at para 7.

86 The Default Standard also sets a different default technical format for the exchange of discoverable documents electronically. While the default rule under the US Federal Rules of Civil Procedure is the form in which the electronically stored information is ordinarily maintained,[76] the Default Standard prefers text searchable image files in Portable Document Format (PDF) or TIFF formats. The metadata and revision history of the underlying electronically stored information must be preserved. After discovery is provided in searchable image files, requests for production of the electronically stored information in native format must be particularised. The establishment of an open technical exchange format is probably likely to remove a point of contention between parties and to facilitate the use of third-party electronic discovery tools.

87 Finally, it is interesting to note that under the Default Standard, the traditional rule of the party responding to a discovery request bearing the costs of compliance is preferred. While the costs of discovery shall generally be borne by each party, this, however, does not take away the court's power to apportion costs of electronic discovery where good cause is shown.

88 In addition to the District of Delaware, the US District Court for the Northern District of Ohio has also adopted the Default Standard. Apart from the Default Standard, a number of District Courts have updated their Local Rules to deal with electronic discovery issues to various degrees.[77]

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76 *Supra*, n 55.

77 For a convenient list, see <http://www.ediscoverylaw.com/2007/05/articles/resources/updated-list-local-rules-of-united-states-district-courts-addressing-ediscovery-issues/>.