

New Trends in Procedural Law: New Technologies and the Civil Litigation Process

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I. Introduction

The information technology revolution is upon us. Its effects are everywhere around us. Lord Woolf has said, “IT will not only assist in streamlining and improving our existing systems and process; it is also likely, in due course, itself to be a catalyst for radical change as well. IT will be the foundation of the court system in the near future and now is time that it should be seen to be receiving attention at the highest levels.”¹

What impact has the information technology revolution had on civil procedure? What use are we making of new technologies in the civil justice system? What possibilities are on the horizon? How are these advances affecting our traditional procedural values – do new technologies support these values or are they challenging us to re-think them?

The topic is a fertile one for comparative analysis, not only in a fact-oriented, practical and empirical way, by looking at the realities of IT developments in the various countries that show similarities as well as divergences, but also in a normative way, by considering whether the wholesale devotion to technological advance focuses our attention on formalities and technicalities and distracts us from

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1. Lord Woolf, *Access to Justice: Final report*, 15 C. JUST. Q. 273 (1996).

assessing whether these advances genuinely further the ends of procedural justice. This is the second International Association of Procedural Law Report on this topic in a decade. The first was done for the 1999 World Congress. It can be found at <http://ruessmann.jura.uni-sb.de/grotius/english>. Our aim, though, is not primarily to catalogue new developments, as has been done in some studies in the past, but to consider on a comparative basis the impact of these new developments on civil procedure.

II. Questionnaire

Following is the questionnaire sent to our reporters which was in two parts. The first part examined the way in which new technologies are changing the way we resolve disputes through civil litigation. The second part examined the way in which new technologies are changing our understanding of the core values underlying the civil litigation process.

A. How New Technologies Are Changing the Way We Resolve Disputes Through the Civil Litigation Process

New technologies are re-shaping the ways that we record and store information in the litigation process, the ways that the participants in the process communicate with one another, and the ways in which the case record or file is developed.

i. Which new technologies have had the greatest impact on civil litigation in your legal system in the past few years in the following areas:

- a. **filing documents with the court and issuing notices from the court** (*e.g.*, Can this be done electronically, and is it mandatory or voluntary, and is it a primary or subsidiary means? Do courts have websites for scheduling hearings and releasing judgments?);
- b. **communicating and exchanging documents with other parties in the litigation process** (*e.g.*, Can parties deliver documents, such as notices, to one another electronically, and does this include the initial notice of proceeding? Can parties produce documents in electronic form for discovery and does this include searchable formats such as CD-Rom?);
- c. **creating the factual record and arguing the case** (*e.g.*, Can

hearings be conducted by telephone or videoconferencing? Are counsel permitted to use computer simulations to present evidence and PowerPoint to present submissions? Are court reporters and transcripts being replaced by official audiorecordings?);

- d. **court administration** (*e.g.*, Are the courts “computerized” in terms of putting cases on to a database? Are these databases produced through e-filing? Are courts making use of the databases for case management? Are these databases being used for empirical research?);

ii. What are the newest technologies in your legal system (either emerging or still on the horizon) in each of the areas considered above?

B. How New Technologies Are Changing Our Understanding of the Core Values Underlying the Civil Litigation Process

With new technologies we hope to find ways to make the litigation process more efficient (cheaper and faster), more accessible to all participants, and more effective (fairer). Referring to the technologies that we have described above:

iii. In what ways have these new technologies increased the efficiency or effectiveness of litigation by making it either cheaper or faster, or both and in what ways have they failed to do so? (eg, Does electronically searchable document production enhance the review of documents or merely alter the way it is reviewed? Does it improve production or simply increase it? Does the ability to search court files and legal databases improve the quality of legal services or does it establish unreasonable standards for the competence of legal research?);

iv. In what ways have these new technologies made the civil justice system more accessible to those who might need or wish to participate in litigation – in what ways have they failed to do so? (eg, Has e-filing reduced costs for courts and litigants or marginalized those who lack computer access? Has teleconferencing and videoconferencing helped to overcome geographical and other logistical challenges?);

v. Have these new technologies changed the approach in your legal system to the way in which the facts of the case are determined and the way in which the case is decided? (e.g., Is the technologically enhanced presentation of evidence and argument, and the increase in other forms of communication that are not “face-to-face” affecting the emphasis once placed on the continuous oral trial and the real-time, in person establishment of the factual and legal basis for determining disputes?)

C. And, finally, in your view are these changes for the better?

III. National Reports

We received six national reports² as follows:

- **United States of America** – Professor Richard Marcus, University of California, Hastings College of Law
- **Australia** – Ms Anne Wallace, Lecturer, School of Law, University of Canberra, Member, Court of the Future Network
- **Israel** – Dr. Orna Rabinovich-Einy, University of Haifa, Faculty of Law
- **Singapore** – Mr. Han Li Toh, Registrar, Subordinate Courts, Singapore
- **England and Wales**—Mr. Adam Johnson (Partner) and Ms Maura McIntosh (Professional Support Lawyer), Herbert Smith LLP
- **Canada** – Mr. Timothy Pinos (Partner) Cassels Brock & Blackwell, Toronto

This report is based on the information and analysis that they provided.

2. These National Reports are available at <<http://research.osgoode.yorku.ca/iapl2007>>.

IV. Analysis

A. How New Technologies Are Changing the Civil Litigation Process

There seems little doubt that new technologies are changing the civil litigation process. This part of the report surveys the various new technologies that are having the greatest impact and asks about those that remain on the horizon in each of the countries surveyed.

Although the effects of the information technology revolution are everywhere around us, it can be argued that this is less so in the courts than in industry, large law firms or government generally. As quoted at the beginning of this paper Lord Woolf said that: "IT will be the foundation of the court system in the near future and now is time that it should be seen to be receiving attention at the highest levels."

While there has certainly been progress, Woolf's prediction has not really come true in the 11 years since he wrote. The extent of the embracing of IT by the courts varies between jurisdictions, yet no court system reported on here has yet reached the degree of computerization that is common place today in both the private and public sectors – think of mundane things such as drivers licence systems or more complex ones such as the health care administration or online shopping. All are now fully or largely computerized.

It is not altogether clear why courts in common law jurisdictions have been relatively slow in progressing in this direction. This was not a question we asked our reporters to address, but we wonder whether the Canadian experience may also be true in other jurisdictions. The courts in common law jurisdictions with their very strong tradition of a judicial independence are, nevertheless, ultimately dependant on the executive for funding and this puts them in the peculiar position of not being "masters of their own house" and readily able to marshal the resources necessary to implement important reforms. This is particularly true of the civil justice system. Based on party prosecution it involves matters that are essentially driven by the efforts of private litigants. Accordingly, these litigants may be in a better position to mobilize technological change than the courts themselves, and so there will be a tendency for the aspects of the process that are in the hands of the parties to be further advanced than the aspects within the purview of the courts themselves.

i. New Technologies That Have Had the Greatest Impact

Technological developments have affected every aspect of civil litigation. This part of the report surveys the impact of new technologies on four aspects of the civil litigation process: filing documents with the court and issuing notices from the court; communicating and exchanging documents with other parties in the litigation process; creating the factual record and arguing the case; and court administration.

a. E-filing and Court Communications

Electronic filing of documents and court communications is an area that captures the range of progress in the countries surveyed – from Singapore, where it is universally available and mandatory, to Israel and the U.S. federal courts, where it is universally available but voluntary, to England and Canada, where it is available only in some courts, and Australia, where it appears still to be an emerging development. While the introduction of these new technologies has not been entirely without controversy, many of the concerns are in the nature of those that arise in conjunction with the introduction of new technologies generally. These developments seem to be consistent with current attitudes toward communications. However, one exception to this relatively smooth transition to digital filing and communication is the concern for protecting litigants' privacy raised by ready access of the public to court files. This is now being discussed in the United States, as explained below.

Mandating the electronic filing of documents would seem to be a crucial step to developing a fully electronic court file system, but it faces one particular problem: how to accommodate "litigants acting in person" who are growing in numbers with the reduction of the availability of legal aid in civil cases. As we will see, Israel has adopted one possible solution – making access to electronic filing available free of charge at clinics, and community centers whose paper filings are scanned and entered into the system by the court staff. Other solutions are worth pursuing, such as providing similar facilities at court houses to assist such litigants to file electronically. A further component to the solution involves the introduction of fillable forms so that, in routine matters, litigants do not need to have specialized knowledge to prepare court documents for filing.

United States – E-filing is now a standard practice in U.S. federal courts³ with more than 27 million cases on the federal filing system, and more than 250,000 attorneys and others having filed documents in federal court alone. The state courts lag behind somewhat with only a small fraction of litigants as yet taking up the opportunity to e-file their documents.⁴

The introduction of electronic filing facilities has had some drawbacks. For example, attorneys have taken advantage of the change in the “close of business” from 5 p.m. to midnight to delay filings and, thereby, extend the working day of the members of the firm who are responsible for them.⁵

In addition, the enhanced public access to digitally stored documents has made “finding and disseminating sensitive personal information about litigants about as easy as flipping on a light switch and more convenient and less costly than physical retrieval at the courthouse.”⁶ This has created a “privacy hornet’s nest”⁷ that has proved difficult to address for a system that once balanced the public nature of judicial proceedings and the privacy of litigants through the crude but effective requirement of having to go to the court house to requisition paper documents.⁸ In particular, the concerns raised by

3. See U.S. Courts: Case Management/Electronic Case Files, <www.uscourts.gov/cmecf/cmecf_about.html> (visited Oct. 20, 2006); see generally Richard L. Marcus, *Malaise of the Litigation Superpower*, in CIVIL JUSTICE IN CRISIS, 71, 73-85 (Adrian A. S. Zuckerman, ed., 1999).

4. Jonathan Lippman, *E-Filing: Time To Ride the Paperless Wave*, N.Y.L.J., Jan. 23, 2006, at 11. See also Pam Smith, *Asbestos Cases Forsake Paper Filings for Silicon*, THE RECORDER, Aug. 29, 2006, at 2 (reporting that San Francisco Superior Court had inaugurated an electronic filing requirement for asbestos personal injury cases).

5. Betsy Reynolds, *Litigation Support: Anticipating the Courts' Moves*, *Manatt Phelps Sets up E-Filing Protocols*, 11 L. TECH. NEWS 7, July 2004.

6. Carolyn Elefant, *How Much Privacy Do Litigants Deserve in E-Filing?*, LEGAL TIMES, Oct. 9, 2000, at 29. See also Andy Seldon, *The Hidden Hazards of E-Filing - Sophisticated Searchers of Public Records can Spur Identity Fraud*, 10 L. TECH. NEWS 8, August 2003.

7. Jennifer Lee, *Dirty Laundry, Online for All to See*, N.Y. TIMES, Sept. 5, 2002, at E1; see generally Natalie Gomez-Velez, *Internet Access to Court Record - Balancing Public Access and Privacy*, 51 LOY. L. REV 365 (2005).

8. Court files in some other countries are not open to the public. (Case records in civil cases in Germany are not open to the public either before or after judgment. The parties and their counsel are entitled to free access to the official records of their cases, but others may look at case records only with the consent of the parties involved or by order of the chief judge of the court upon a showing of some legitimate interest in so doing). PETER L. MURRAY & ROLF H. STURNER, GERMAN CIVIL JUSTICE 182 (2004).

ready access to court files in federal court bankruptcy proceedings and state court matrimonial disputes are causing parties to resort to dispute resolution outside the public court system. These challenges are being addressed by the E-Government Act of 2002⁹ and the new Federal Rule of Civil Procedure 5.2.¹⁰

The requirement of physical service of the originating notice in a proceeding in the United States is unlikely to give way to electronic service in the near future and no statute or court rule currently authorizes electronic service of the originating notice of proceeding. This is so for two reasons. First, the use of service as a means of exercising jurisdiction is itself a symbolic replacement of the process of apprehending and detaining a defendant to answer a civil complaint.¹¹ This has given rise to a view that the authority to require a defendant to respond to the notice is based on the defendant's physical presence. E-service would challenge this notion. Second, in a legal system that relies extensively on party prosecution, it is particularly important to avoid any uncertainty over whether the defendant was apprised in a timely fashion of the nature of the complaint and the circumstances under which it may be answered as this becomes a key safeguard of fairness in the process.¹² Nevertheless, there has been at least one instance where a court has authorized service by e-mail where the plaintiff had made unsuccessful attempts to serve the defendant by various conventional means and the defendant had publicly indicated that it preferred that all communications to it be by e-mail.¹³ Email service of subsequent documents is authorized when it is "consented to in writing by the person served."¹⁴

9. E-Government Act of 2002, Pub. L. No. 107-347, § 205(c)(1), 116 Stat. 2899, 2913 (2002).

10. *See* FED. R. CIV. P. 5.2 (Proposed Amendment 2005) (Preliminary Draft, 45-51, 2005) (providing for redaction of certain personal information from materials filed in court, and authorizing filing under seal pursuant to court order to protect additional information).

11. *Int'l Shoe Co. v. Washington*, 326 U.S. 310 (1945). *See also* R. MARCUS ET AL., *CIVIL PROCEDURE: A MODERN APPROACH* 691-710 (4th ed. 2005) (discussing the American "power" theory of jurisdiction).

12. *See, e.g.*, FED. R. CIV. P. 55 (providing for default judgment if defendant fails to respond after being served with summons and complaint).

13. *Rio Props., Inc. v. Rio Int'l Interlink, Inc.*, 284 F.3d 1007 (9th Cir. 2002). *See also* *Popular Ent., LLC v. Webcom Media Group, Inc.*, 225 F.R.D. 560 (E.D. Tenn. 2004) (where service by e-mail was considered warranted).

14. *See* FED. R. CIV. P. 5(b)(2)(D).

Australia – Electronic filing technology has not yet had a major impact on civil litigation in Australia, although most jurisdictions have either begun to introduce it or plan to do so. Despite its availability in most courts in Australia, the take-up rate has been slower than expected.¹⁵

Courts are amending their rules or issuing practice directions to provide for email communication between the litigants and the courts more generally, and the Queensland Supreme Court has published a protocol for this.¹⁶ Automated electronic notices now form a regular feature of the case management system in most courts. These various technological advances in communication between the courts and litigants are likely to remain voluntary as long as unrepresented litigants are unable to take advantage of them.

Some courts are experimenting with email communications for pre-hearing correspondence and case-preparation, and with conducting directions hearings and supervising case management through secure electronic bulletin-boards.¹⁷ The Queensland courts provide facilities for e-filing, requesting hearing dates, and online searching of case files.¹⁸

Israel – The Next Generation Court System (“NGCS”) is an advanced document management system that was introduced in January 2007 as a pilot project for online document filing and case management. When it is fully implemented it will put the entire court system, apart from hearings, on a digital footing. The NGCS includes five basic features: the electronic file, work space, task assignment, calendar and e-filing. In combination, these features will transform

15. For example, the County Court of Victoria, which operates one of the more sophisticated systems, advises that, at its highest, as of March 2006, the system has captured 30% of civil filings in one month, with the average running at around 20%. Hans Wolf, Manager, Information Technology for the Supreme and County Courts of Victoria.

16. Queensland Courts Email Policy: Supreme and District Courts Brisbane Registries, <http://www.courts.qld.gov.au/practice/online/email_policy.htm> (visited Oct. 21, 2006) (Australia).

17. See, e.g., New South Wales Land and Environment Court: E-Court, <http://www.lawlink.nsw.gov.au/lawlink/lec/ll Lec.nsf/pages/LEC_ecourt> (visited Oct. 10, 2006); Megan Greenwood, Wigs, Gowns and Cyberspace - Improving Court Services Through Technology, Presentation to Courts for the 21st Century: Information Managers' Conference in Brisbane, Australia (Nov. 24, 2004), available at <http://www.law.qut.edu.au/files/C21_docs/Greenwood_241104.pdf> (visited October 18, 2006) (Australia).

18. See, e.g., Queensland. eCourts, eChambers, at <<http://www.ecourts.courts.qld.gov.au/eChambers.htm>> (visited October 20, 2006) (Australia).

the existing paper court file into a digital link. The public has access to the publicly available documents and the litigants and judges have access through smart cards and passwords to the entire file.¹⁹ Establishing a digital court file eliminates the challenges of providing access to the physical documents – carrying them around and keeping track of them – and it assists in organizing the file so that specific documents can readily be accessed without trolling through boxes of files. Matters that are commenced after the introduction of the NGCS are automatically managed through this process, and the files of matters that were commenced before the system was introduced are scanned and entered into the system.

The NGCS enables remote filing and online service of documents. The Civil Procedure Regulations have been revised to describe the documents and the processes in a way that includes electronic communications and records. Regulations governing the obligations of the Court to archive documents²⁰ have been amended to permit disposal of paper documents that have been scanned and entered into the system, and it is expected that the Inspection Regulations will be amended to allow for a wider variety of documents to be made available to the general public, including protocols and pleadings.

The levels of access to the system vary with the users' status – from judges and court personnel, to attorneys, to the general public. Attorneys use a smart card distributed by the Israel Bar Association for a small fee to access the system at the level for which they are authorized. In turn, they are deemed to have received messages in their secure email account within a day of transmission. The court files of small claims and claims for unpaid wages at the labour court have been made accessible without a smart card as these usually involve unrepresented litigants and the reduction in security of these files is seen as justified to make the files more accessible. As for security of data, some view the automatic recording of all occasions of access to the file as a feature that makes the digital files more secure than the old paper files, which were occasionally subject to

19. For more information on the NGCS, see Protocol, Knesset Committee on Constitution, Law and Justice Session, 16th Knesset, (Feb. 28, 2005), available at <www.knesset.gov.il/protocols/data/html/huka/2005-02-28.html> (Israel).

20. Archives Regulations (Preservation and Extermination of Court and Tribunal Files), 1986, K.T 4962, 1342 (Israel).

tampering.²¹

Fillable forms in the e-filing of court documents simplify the process. The old requirements for standardizing documents so as to enable them to be filed and tracked has been replaced by the fillable form, the substantial contents of which may be entered into the electronic form itself or included as an attached electronic file. Use of the system is optional, but attorneys who elect to use the system must do so for all their files. Access is available free of charge at clinics, where paper filings are scanned and entered into the system by the court staff.

Singapore – As with Israel's NGCS, the Electronic Filing System ("EFS"), which was implemented in Singapore in 2000, paves the way for one of the world's first nationwide paperless litigation systems. It revolutionises the conduct of civil litigation through its facilities for electronic filing, electronic extracts, electronic service of documents and the provision of electronic information services.

The system is a document and workflow case management application. It provides an electronic framework for law firms to file documents with the courts electronically over the internet. It includes every type of document from a writ of summons to appeals. Paper documents are scanned into .pdf format and stored in the database. Even annotations made by the judges on the .pdf documents are stored electronically.

Upon reaching the courts, the system routes documents to the appropriate registry staff for processing. Further routing within the court system provides for processing such as for approvals by the Duty Registrar. Court Replies & Service of Documents are returned to the electronic In-Tray of the originating law firm. All this occurs within a secure EFS system protected by authenticated logins.

Since the degree of technological sophistication among the population is high, the filing is entirely electronic and hardcopies are no longer accepted by the courts. The minority of those who lack the capacity to file themselves or who do not have an EFS subscription may go to an appointed third party service bureau near the courts for assistance with their electronic submissions.

Court fees and processing fees are calculated by the EFS system and the accounts are settled via the automated inter-bank GIRO

21. Judge Boaz Okon, Presentation at the District Court in Tel Aviv (July 31, 2006) (notes on file with Dr. Rabinovich-Einy).

payment mechanism for subscribing law firms.

England and Wales – Apart from debt claims of less than £100,000, which are discussed below, the use of e-filing has been developing slowly. Since December 2002, it has been possible in certain county courts and in the Commercial Court and the Chancery Division of the High Court to communicate with the court by e-mail and to file specified documents, such as skeleton arguments, chronologies, and similar documents that are filed in advance of a hearing. A pilot project has been introduced in eleven county courts for completing and submitting online some twenty of the civil court forms with the fees being paid online via credit or debit card. Parties represented by solicitors may file certain documents by email in the Court of Appeal (Civil Division) and arrangements are being made to introduce an online forms service on the Court of Appeal website. These procedures are voluntary and, in the absence of a specific incentive to encourage their use, they have been slow to take hold.

In January 2006, a report was published for the Department for Constitutional Affairs (“DCA”)(formerly the Lord Chancellor’s Department) Joint-Judicial Steering Group on IT and Court Modernisation on the feasibility of Electronic Filing and Document Management for the civil and family courts.²² This would involve secure and authenticated e-filing that would facilitate the eventual development of an electronic case file. In addition, a more limited pilot project has been underway in the Commercial Court since April 2006.²³ A smaller pilot project has operated for some years in Preston county court for dealing with court applications by email where the parties are represented and the court considers that the application is suitable to be dealt with without a hearing.

In the case of debt claims, two county court units, the Claim Production Centre and the County Court Bulk Centre, have been established to process undefended debt collections electronically including issuing claims, entering judgment and applying for execution warrants. Discounts on the standard county court fees encourage their use. In addition, Money Claim Online (“MCOL”)

22. Her Majesty’s Court Service, *Feasibility Study – Summary of the Final Report*, http://www.hmcourts-service.gov.uk/docs/publications/efdm_feasibility_study_summary_report.pdf (visited Sept. 13, 2007).

23. Herbert Smith LLP is one of three solicitors' firms that have taken part in the initial pilot project, along with three barristers' chambers.

was set up in 2001 to allow county court claims for fixed sums up to £100,000 to be issued online. Described as the first example in England and Wales of a “Cyber-Court,” MCOL enables online requests for claims, status checks of claims by claimants and defendants and, where appropriate, requests for the entry of judgment and enforcement by warrant of execution, with court fees being paid by credit or debit card.

Courts do not generally issue notices by email, but some email communications occur on an informal basis. For example, a judge’s clerk may email a draft judgment to the parties’ representatives for comments. House of Lords judgments are published on the Parliament website,²⁴ some High Court and Court of Appeal judgments are published on the courts service website,²⁵ and significant judgments are widely available on third party subscription-only and publicly available sites.²⁶ The courts service website contains the Daily Cause List, which sets out brief details of hearings due to take place the following day. Court rules and practice directions are also published on the website of the Department for Constitutional Affairs.²⁷

Canada – Despite considerable discussion and pilot projects in Ontario²⁸ and British Columbia,²⁹ e-filing of documents has been slow to develop in Canada. It is currently available to all litigants only in the Federal Court (in intellectual property cases)³⁰ and the Supreme

24. See UK Parliament: House of Lords Judgments, <<http://www.publications.parliament.uk/pa/ld/ldjudgmt.htm>> (visited Sept. 13, 2007).

25. See Her Majesty’s Court Service: Judgments, <<http://www.hmcourts-service.gov.uk/cms/judgments.htm>> (visited Sept. 13, 2007).

26. See, e.g., British and Irish Legal Information Institute, <<http://www.bailii.org>> (visited Sept. 13, 2007).

27. Department for Constitutional Affairs: Civil, Criminal, and Family Procedural Laws, <<http://www.dca.gov.uk/procedurerules.htm>> (visited Sept. 13, 2007).

28. As part of the now-terminated Integrated Justice Project, which was an initiative between the Ontario Government and a private-sector consortium to use business reengineering and technology to improve the justice system. See Sarah Lysecki, *Integrated Justice Project ‘too large, too complex, too ambitious’: AG’s office*, TECHNOLOGY IN GOVERNMENT (July/Aug. 2005), available at <<http://www.allbusiness.com/technology/896690-1.html>>; Atkinson Baker Court Reporters: Ontario Adopts Electronic Filing, <<http://www.depo.com/ontario.htm>> (visited Sept. 13, 2007).

29. British Columbia Court Services Online, *Electronic Filing with the Courts of British Columbia; Progress to Date*, <<https://eservice.ag.gov.bc.ca/cso/about/efiling-progress.pdf>> (visited Sept. 13, 2007).

30. See Notice to the Profession from the Honourable Allan Lutfy, Chief Justice

Court of Prince Edward Island.³¹ Both courts use a commercial third party facility.³² Electronic access to court records is available for basic case information and status or event tracking in the Supreme Court of Canada³³ and the British Columbia Supreme Court.³⁴

The Canadian Judicial Council has published discussion papers and reports on the ways in which technology could improve access to records.³⁵ There is reasonably comprehensive free public access to judicial decisions published by or on behalf of the court,³⁶ or via the Canadian Legal Information Institute.³⁷ Court websites vary from static presentations of basic court rules and notices, and decisions,³⁸ to some more dynamic bulletin board postings of daily or weekly court lists, and the availability of trial dates.³⁹

Some courts and judges use email to communicate with counsel either directly or through court staff and court staff in some jurisdictions use email to schedule cases. This is particularly effective in matters requiring intensive case management. Similarly effective is the widespread use of conference calls for more routine procedural matters.

of the Federal Court of Canada, and Raymond P. Guenette, Acting Chief Administrator of Courts Administrator Service, to Members of the Profession (May 11, 2007), available at <<http://cas-ncr-nter03.cas-satj.gc.ca/fct-cf/pdf/E-filing-notice.pdf>> (Canada); Annex to Notice to the Profession from the Federal Court of Canada (May 11, 2007), available at <http://cas-ncr-nter03.cas-satj.gc.ca/fct-cf/pdf/E-filing-annex-AMENDED_e.pdf> (Canada).

31. Lexis Nexis Canada: Electronic Filing Service Information, <<http://www.lexisnexis.ca/efiling>> (visited Sept. 13, 2007).

32. *Id.*

33. <http://www.scc-csc.gc.ca/information/index_e.asp>.

34. <<http://www.ag.gov.bc.ca/courts/cso/index.htm>>. See also Consultation paper: Electronic Access to Court Documents available at <http://www.courts.gov.bc.ca/sc/whats%20new/Electronic_access/Electronic%20Access%20to%20Court%20Documents.htm> (British Columbia).

35. See Discussion Paper from the Judges Technology Advisory Committee for the Canadian Judicial Council on Open Courts, Electronic Access to Court Records, and Privacy (May 2003), available at <<http://www.cjcccm.gc.ca/cmslib/general/OpenCourts-2-EN.pdf>> (Canada); Discussion Paper by Canada Judicial Council on Model Policy for Access to Court Records in Canada (Sept. 2005), available at <<http://www.cjc-ccm.gc.ca/cmslib/general/Model%20Policy-final-Sept2.pdf>> (Canada).

36. See, e.g., Alberta Courts, <<http://www.albertacourts.ab.ca/go.aspx?tabid=15>>; Federal Court of Canada, <<http://decisions.fct-cf.gc.ca/en/index.html>>.

37. <<http://www.canlii.org/en/index.html>>.

38. Ontario is typical of this type. See <<http://www.ontariocourts.on.ca/english.htm>>.

39. See, e.g., British Columbia Supreme Court, <<http://www.courts.gov.bc.ca/sc>>.

b. E-delivery of Documents Between Parties

Here we discuss not only e-delivery of documents between parties but also e-discovery of documents – an obvious next step in technological development that can have unintended consequences. The prospect of replacing trial by ambush with trial by avalanche in the sheer volume of documents produced or expected to be produced is an issue that is now being addressed in the United States, Australia, Canada and England. In addition, the increasing use and relevance of email communications is presenting challenges on its own to assessing the appropriate scope of discovery.

For common law jurisdictions e-discovery of documents is a major and crucial development given the role and the extent of discovery of documents in common law civil procedure, which generally requires parties to disclose *all documents* relevant to the matters in issue in the proceeding and to produce to the other side all such documents not covered by privilege. It is worth noting the explosion of activity in this area (of e-delivery of documents between parties) relative to other areas examined in this report; this is an area driven by party initiative and not on court initiative.

United States – According to the United States Report, e-discovery may well be the technological development that has had the greatest impact in the last 25 years. The production of computer records, and particularly e-mail, has enabled ordinary, informal, candid conversation to become part of the record in civil litigation. This has given rise to a staggering increase in the magnitude of relevant documents:

[A] complex litigation between two large corporate parties can generate the equivalent of more than one hundred million pages of discovery documents, requiring over twenty terabytes of server storage space. Assuming a review rate of one box of paper documents per weekday, per reviewer, a one hundred million page volume corresponds to over thirty person-years of review for each party. In ecological terms, each side would require approximately 6,250 trees just to print one copy of each of the documents it produced and each of the documents it received.⁴⁰

40. Robert D. Brownstone, *Collaborative Navigation of the Stormy e-Discovery Seas*, 10 RICH. J. L. & TECH. 53, para.21 (2004); Jason Krause, *What a Concept! New Computer Search Methods Promise Better E-Discovery Results*, 89 A.B.A.J. 60 (2003) (a terabyte of information, if printed to paper, could fill the Sears Tower – the tallest building in America – four times).

Despite this, courts and commentators in the U.S. are optimistic that new search and document management technologies will make this voluminous discovery manageable. The 2006 Amendments to the Federal Rules of Civil Procedure seek to re-establish the balance.⁴¹ They do so by requiring early discussion of a discovery plan;⁴² by granting relief from the obligation of a responding party to provide discovery of electronically stored information from a source which is not reasonably accessible due to burden or cost;⁴³ by acknowledging that electronically stored information as an object of discovery is like documents and tangible things⁴⁴ and providing methods for resolving what form to use for production of such information;⁴⁵ and by protecting parties from sanctions for loss of electronically stored information when that loss resulted from the good faith routine operation of an electronic information system.⁴⁶

On another front, the proliferation of email communications has created new issues for document retention policies and the preservation of evidence. There is a longstanding prohibition on destruction of evidence in American law.⁴⁷ But when does the obligation arise to retain potentially relevant electronic records that might otherwise be destroyed in the normal process of replacing back-up files and re-using back-up tapes? Although eliminating the need to store paper copies has all but eliminated the costs of warehousing files, storage space on servers presents similar challenges, requiring unneeded files to be deleted or overwritten at regular intervals. At what point in the emerging dispute do operating systems need to be modified so that they do not automatically overwrite files? What are the retention obligations with regard to backup tapes? These are difficult questions that are just beginning to be resolved.

41. One litigant applied unsuccessfully to the court to be permitted to pursue litigation under a pseudonym to avoid electronic searches linking the dispute to her. *Doe v. City of New York*, 201 F.R.D. 100, 101 (S.D.N.Y. 2001).

42. FED.R.CIV.P. 26(f).

43. FED.R.CIV.P. 26(b)(2)(B).

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

45. FED.R.CIV.P. 34(b).

46. FED.R.CIV.P. 37(f).

47. See generally *J. GORELIK, ET AL., DESTRUCTION OF EVIDENCE* (1989); *Nation-Wide Check Corp. v. Forest Hills Distributors, Inc.*, 692 F.2d 214 (1st Cir. 1982) (imposing sanctions on party for failure to retain documents after litigation commenced).

Australia – Email is being used increasingly for communication between members of the legal profession in Australia, including for service on an informal and consensual basis. Court rules are being amended to allow a party to nominate an email address for service,⁴⁸ but the general practice is still to require the party to nominate a physical address for service with an email option as an alternative.⁴⁹

The recent experience in Australia with e-discovery seems to track the experience in the United States. Most courts have developed rules and practice directions to facilitate the orderly development of e-discovery.⁵⁰ These protocols permit discovery lists and data and imaged documents to be collated and exchanged electronically. The exchange often occurs via CD Rom or other portable media, but in larger cases, firms are now establishing on-line “Discovery Rooms” where parties access secure websites and search and retrieve documents.⁵¹ The difficult issues surrounding appropriate document retention policies has given rise to proposed legislation in the state of Victoria that would provide for substantial fines for companies that destroyed emails that were reasonably likely to be used in legal proceedings. A due diligence defense would be available for companies with document management systems that

48. *See, e.g.*, SUP.CT.CIV.R. 58(5)(d) (2006) (S.Austl.).

49. SUP.CT.CIV.R 58(2) (A party must submit a physical address as an address for service) (S.Austl.).

50. *See, e.g.*, M.E.J. Black, Chief Justice of the Federal Court of Australia, Practice Note No. 7: Guidelines for the use of information technology in litigation in any civil matter (Apr. 20, 2000), available at <http://www.fedcourt.gov.au/how/practice_notes_cj17.htm> (visited Oct. 21, 2006); Guidelines for the Use of Technology, Practice Direction No. 52, South Australian Courts (Aug. 17, 2001), available at <http://www.courts.sa.gov.au/lawyers/practice_directions/civil_pd/civil_pd_52.htm> (visited Oct. 21, 2006); Practice Note No. SC Gen 7: Supreme Court – Use of Technology, Supreme Court of New South Wales (Aug. 15, 2006), available at <http://www.lawlink.nsw.gov.au/practice_notes/nswsc_pc.nsf/pages/372> (visited Oct. 21, 2006); Chief Justice of the Supreme Court of Victoria, Practice Note No. 1: Guidelines for the use of information technology in litigation in any civil matter, (Apr. 29, 2002), available at <[http://www.supremecourt.vic.gov.au/CA256902000FE154/Lookup/PN/\\$file/PN-1-2002%20-%20IT.pdf](http://www.supremecourt.vic.gov.au/CA256902000FE154/Lookup/PN/$file/PN-1-2002%20-%20IT.pdf)> (visited October 21, 2006); Paul De Jersey, Chief Justice, Supreme Court of Queensland, Practice Direction No. 8: Electronic Management of Documents (July 13, 2004), available at <http://www.ecourts.courts.qld.gov.au/eCourtroom/Practice%20Direction-sc2004_08.pdf> (visited October 21, 2006).

51. Liz Broderick, Partner and Head of Legal Technology Group at Blake Dawson Waldron, Towards Best Practice, Presentation at the Courts for the 21st Century: Information Management Brisbane Conference (November 24, 2004), available at <http://www.law.qut.edu.au/files/C21_docs/Brodrick_for_24_11_04.pdf> (visited Oct. 21, 2006).

would prevent this.

Israel – The significant technological advances anticipated through the introduction of the NGCS in communications between the parties and the court do not appear to be matched by similar developments between the parties themselves, for example, with respect to discovery. With the launch of the NGCS and the shift to digital court files, we can expect these questions to receive more attention, which may lead to formal legislation, permitting, perhaps even mandating, digital discovery in certain cases. In the meantime, case law has addressed some of the issues arising from the inevitable progress towards digital communications in litigation practices. For example, the definition of “document” has been expanded to include audio tapes, video tapes and other digital records;⁵² and the production of relevant documents now includes the obligation to generate from a database documents that previously existed only in electronic form provided they are relevant and can be generated with minimal effort and resources, and to provide disclosure in a readable format.

Singapore – As all documents are filed electronically, the parties can access documents that have been submitted through the EFS system along with the replies from the courts, and they can track the progress of the file.

Law firms are also able to serve documents on other law firms electronically, and they can request copies of the cause papers from the courts, thereby enabling them to browse and print the documents upon approval from the courts. From their offices, law firms can make online enquiries to browse the index of documents filed for a case. For more detailed e-discovery of documents, access is made available inside the Search Room located within the Courts' premises.

E-mail is increasingly being used for communications. It is strongly encouraged for online mediation of e-commerce civil disputes. Such cases include contractual matters and intellectual property rights disputes. Both the complainant and the respondent must have e-mail addresses and must agree to this method of resolution for their dispute. The case is handled by the Court-Mediator. Where necessary, parties may be asked to meet face to face, or to produce and exchange documents and exhibits.

52. See CC (TA) 29969/05 Yitzhari v. Adler (unpublished, Nov. 17, 2006); OS 487/90 Aharoni v. Menashe 53(2) P.D. 397 (unpublished, Jan. 12, 1993); SCR (TA) 3836/02 Gidron v. ECI Telecom Inc. (unpublished, Oct. 16, 2002) (Israel).

England and Wales – The Court rules require parties to provide a postal address, but they also allow for documents to be served by fax or “other means of electronic communication” where the party has consented in writing to accept electronic service. Fax service is now common but e-mail service is less so. Email communications between parties’ representatives is increasing, as is the exchange by email of pleadings and witness statements, but it has not replaced more formal hard copy correspondence between the parties.

Provisions were introduced in October 2005 for the duty to search for and preserve electronic documents. The duty was already well established but parties must now discuss early on in the litigation the issues that may arise in searching for and preserving electronic documents and they must cooperate on the format for production. The provisions are onerous in that they require parties to consider many sources of electronic documents and to specify which sources they have or have not searched, but the provisions are subject to the court’s “overriding objective” of dealing with cases justly, which includes considerations of proportionality. The rules recognize that the ease and expense of retrieval is a factor in determining which sources of electronic documents are reasonably expected to be searched.

The use of electronic databases to collate and review documents for disclosure is now commonplace. Documents originally stored electronically are exported directly into the database and hard copy documents are scanned and coded so that they can be added to the database. Making these databases available online eliminates the need to circulate updated disks. Disclosure and inspection of documents generally takes place via the exchange of portable storage media, such as CDs, DVDs, or portable hard drives in document-heavy cases. In some cases parties share a single online database with the disclosed documents accessible to all and privileged documents restricted to a particular party. A Data Exchange Protocol for Electronic Disclosure Documents has been developed by the Litigation Support Technology Group (or LiST) to set out best practice for providing copies of electronic disclosure documents, including file naming conventions and directory structure. It can be used by agreement or upon the direction by the Court.

Canada – Email communication among counsel is commonplace

and delivery of documents via email is facilitated by court rules⁵³ and generally accepted by counsel. E-discovery of documents existing in electronic form, and the creation of discovery databases incorporating electronic and imaged documents has been the focus of considerable discussion including the establishment of “best practices” guidelines for e-discovery⁵⁴ that are now being revised and adopted by the courts of British Columbia,⁵⁵ Alberta, and Ontario as compulsory practice directions.⁵⁶

c. Technology in the Courtroom

For a variety of reasons, the changes that new technologies could bring about in the way in which hearings are conducted are likely to have the greatest impact on the civil litigation process. Hearings by teleconferencing, videoconferencing, and computer simulations have the potential, for better or worse, to revolutionize the way in which we decide cases, making such changes controversial and slow to develop. It will be interesting in the years ahead to see the extent to which our adjustment to digital communications makes us more comfortable with technology in the courtroom.

It is necessary here to draw a sharp distinction between trials and other hearings. The common law trial is primarily a fact finding exercise traditionally based on oral evidence given by witnesses testifying in person. By contrast appeals and interlocutory motions typically do not involve any oral testimony; appeals are based on a written record and motions rely almost totally on written affidavit evidence. Not surprisingly teleconferencing and videoconferencing have been easily accommodated into the hearing of appeals and motions. This is much less so with trials.

53. Ontario Rules of Civil Procedure, R.R.O. 1990, Reg. 194, s. 16.05.

54. TASK FORCE ON THE DISCOVERY PROCESS IN ONTARIO, THE SUPPLEMENTAL DISCOVERY TASK FORCE REPORT (2005), <http://www.oba.org/en/pdf_newsletter/E-DiscoveryGuidelines.pdf> (Ontario).

55. See Donald I. Brenner, Chief Justice of the Supreme Court of British Columbia, Practice Direction Re: Electronic Evidence (July 1, 2006), available at <<http://www.courts.gov.bc.ca/sc/ElectronicEvidenceProject/Practice%20Direction%20-%20Electronic%20Evidence%20-%20July%201,%202006.pdf>>.

56. This initiative has been assisted by the leadership of a Canadian wing of the American Sedona Conference, an influential group of jurists focussed on electronic discovery issues: The Sedona Conference Working Group 7, The Sedona Principles: Addressing Electronic Documentation Production – Canadian Edition (Public Comment Version) (February 2007), available at <http://www.thosedonaconference.org/dltForm?did=2_13WG7Draft.pdf>.

United States – Videoconferencing is now being adopted in appellate courts for oral argument, but it seems doubtful that it will soon become a regular means of conducting hearings at the trial level. Video recorded testimony has been seen by some as a natural step for the current generation of those who have grown up with mass media⁵⁷ and by others as a way of making scheduling more flexible.⁵⁸ Some have imagined a future in which the jury – a fixed feature of trial adjudication in the United States – would assemble in the courthouse to view a trial consisting of a multimedia presentation of the video recorded testimony of witnesses and other demonstrative evidence.⁵⁹ Despite the lengthy debate over the merit of this innovation, it has not gained widespread acceptance; and after a decade of experience with this medium in Ohio, the Ohio Supreme Court has ruled that “videotape trials” may be conducted only with the consent of the parties.⁶⁰

As Professor Marcus points out, Professor Langbein has asserted that “a legal system will do almost anything, tolerate almost anything, before it will admit the need for reform in its system of proof and trial.”⁶¹ In the United States, the profound commitment to the use of juries in civil litigation has caused resistance to innovations in the civil litigation process that might affect the continuous oral trial and those that involve changes to the practices associated with the use of civil juries, even those as seemingly innocuous as permitting jury members

57. Some see the introduction of these techniques as a momentous development. A law professor, for example, says that “[t]he use of electronic visuals is as significant as the introduction of cross-examination in the 1870s and formal discovery in the 1930s. This will be the greatest change in advocacy in the career of anybody alive or about to be conceived.” Lisa Brennan, *Pitching the Gen-X Jur: As Jurors Get Younger, Law Schools are Thinking More Like MTV*, 26 NAT’L. L. J. 1 (2004) (quoting Prof. Stephen Lubet of Northwestern University Law School). See also Henry Gottlieb, *Plaintiffs’ Lawyers Have High-Tech Advantage in Courtroom*, THE RECORDER, Feb. 28, 2006, at 2 (reporting that plaintiff lawyers are more likely to use a “\$1,500-a-day technical director hired to spike the presentation with computer-generated graphics”).

58. William W. Schwarzer, *Reforming Jury Trials*, 132 F.R.D. 575, 588 (1991); Lucien v. McLennand, 95 F.R.D. 525, 526 n.2 (N.D. Ill. 1982); James L. McCrystal & Ann B. Maschari, *Will Electronic Technology Take the Witness Stand?*, 11. U. Tol. L. Rev. 239 (1979-1980).

59. See generally Paul D. Carrington, *Virtual Civil Litigation: A Visit to John Bunyan’s Celestial City*, 98 COLUM. L. REV. 1516 (1998).

60. *Fantozzi v. Sandusky Cement Prod. Co.*, 597 N.E.2d 474, 480 (Ohio S. Ct. 1992).

61. John H. Langbein, *Torture and Plea Bargaining*, 46 U. CHI. L. REV. 3, 19 (1978).

to take notes or to ask questions.⁶² This is because the tradition of the civil jury serves a larger purpose than reliable fact finding in the American legal tradition. As Professor Marcus explained, it “affords the community a critical voice in dispensing civil justice.”

In this regard, the presentation of pre-recorded deposition testimony and as evidence at trial may seem to be consistent with the ideals underlying the use of civil juries, but when implemented in one court it resulted in elaborately produced documentary quality presentations.⁶³ This tended to undermine the ordinary expectation of immediacy, spontaneity, and the opportunity for follow-up in real time as a means of testing the evidence. In addition, it raised concerns about the impact of unequal resources of the parties on the persuasiveness of the evidence presented. However, it is not clear that the practice was entirely unhelpful. Studies have shown that “demeanor is as likely to mislead as to enlighten,”⁶⁴ and that the presentation of the testimony in a logical sequence that could be played back by the jurors as needed, was potentially a net benefit in longer and more complex trials.

Turning from pre-recorded testimony to that presented via videoconference, the outlook seems less problematic from the perspective of fact finding. There is evidence to suggest that juries respond the same to witnesses seen in this way as those seen live,⁶⁵ and in the context of a trial where the logistics make in person attendance of some witnesses difficult, it could be of considerable practical advantage. Nevertheless, where the witnesses testifying have a reason to want to tell their stories to the decision-maker, perhaps because they are complainants or otherwise affected by the

62. R.L. MARCUS & E.F. SHERMAN, *COMPLEX LITIGATION: CASES AND MATERIALS ON ADVANCED CIVIL PROCEDURE* 745-46 (4th ed. 2004); Steven I. Friedland, *The Competency and Responsibility of Jurors in Deciding Cases*, 85 Nw. U. L. Rev. 190 (1990); Jack B. Weinstein, *The Power and Duty of Federal Judges to Marshall and Comment on the Evidence in Jury Trials and Some Suggestions on Charging Juries*, 118 F.R.D. 161, 168 (1988); Larry Heuer & Steven Penrod, *Juror Notetaking and Question Asking During Trials*, 18 LAW & HUM. BEHAV. 121 (1994).

63. See generally C.M. Buxton and M. Glover, *Managing a Big Case Down to Size*, 15 LITIGATION 22, 22-23 (Summer 1989); A.M. Lagomarsino, *Strategic Use of Video Depositions*, 11 NEV. LAWYER 8 (2005).

64. Olin Guy Wellborn III, *Demeanor*, 76 CORNELL L. REV. 1075, 1075 (1991).

65. Frederic Lederer, *The Road to the Virtual Courtroom? A Consideration of Today's - and Tomorrow's - High-Technology Courtrooms*, 50 S. CAR. L. REV. 799, 819 (1999) (reporting that four experiments have indicated that jurors perceive remote witnesses just as they perceive in-court witnesses).

events giving rise to the claim or the outcome of the litigation, these alternatives are less likely to be satisfactory.⁶⁶

A different set of considerations arises in respect of technologies that would permit remote participation by jurors. The idea that jurors would be observing the evidence in a setting that was not supervised by the judge and not in the presence of one another appears to violate fundamental assumptions about the requirements of fact finding.⁶⁷

Australia – It is becoming more common for the litigation of large commercial matters to be conducted in electronic courtrooms with litigation support, document management and evidence display systems. Courts can authorize the use of specific technologies in preparing and presenting the case to ensure that hearings proceed efficiently.⁶⁸ Although less used in civil matters than in criminal matters, most courtrooms are equipped for computer simulations, computer-generated summaries, graphics, charts and PowerPoint. It is becoming more common for evidence to be presented remotely by telephone, and videoconferencing facilities are used in hearings and in managing pre-trial and directions hearings.⁶⁹ It has been observed⁷⁰ that recordings of the sound and image of a person testifying are capable of capturing nuances in the testimony that could enable an appellate court to review assessments of credibility *de novo*.

Real-time transcript is now available. It is prepared under the supervision of an operator and stored digitally to produce a record that can be searched, analyzed, indexed and privately annotated. This technology improves the immediacy and accessibility of the record in that it is made available to the parties on a secure site,⁷¹ or

66. See E. ALLAN, LIND ET AL., *THE PERCEPTION OF JUSTICE: TORT LITIGANTS' VIEWS OF TRIAL, COURT-ANNEXED ARBITRATION, AND JUDICIAL SETTLEMENT CONFERENCES* (1989); Annie Bowen Poulin, *Criminal Justice and Videoconferencing: The Remote Defendant*, 78 *TULANE L. REV.* 1089, 1111 (2004).

67. *Stine v. Marathon Oil Co.*, 976 F.2d 254 (5th Cir. 1992).

68. See Practice Notes, *supra* note 51. See e.g., *Idoport Pty. Ltd. v. National Australia Bank Ltd.*, (2000) 49 N.S.W.L.R 51, 54 (Australia).

69. See list at <<http://www.aija.org.au/info/techn/videoconf.htm>> (visited Oct. 13, 2006). For example, the *Evidence (Audio and Audio-Visual Links) Act 1998* (N.S.W.) facilitates interstate and overseas audio and video links and provides criteria for the court to use in making a direction for the use of audio and audio-visual links.

70. Anne Wallace, *New Technologies and the Civil Litigation Process: Report from Australia*, <<http://research.osgoode.yorku.ca/iapl2007>>.

71. Vicky Harris, *Overview of Computerised Transcript*, TECHNOLOGY FOR

posted on a public site for widespread dissemination.⁷² However, it is expensive and so is generally used in long or complex trials. In other matters, unsupervised audio recordings are created to serve as the record of the proceedings. In at least one court, the recording is an audio-visual recording.⁷³ However, the official record still consists not in the audio or visual recording but in the transcript prepared from it.

Israel – Videoconferencing technology is available in civil proceedings in Israel, but it is not widely used because courts have viewed this tool with suspicion and have limited its use to cases where parties requested videoconferencing in good faith, the testimony was relevant to the contested issues, and the circumstances preventing the witness from traveling to Israel were substantial.⁷⁴ A somewhat more expansive approach to videoconferencing has emerged in the criminal law setting for security reasons. In 2007, the law was amended to permit videoconferencing with a suspect in a pre-trial detention proceeding in light of several breakouts by suspects and convicted felons.⁷⁵

Singapore – Videoconferencing technology is used daily and the benefits in reduced travel time and cost are tangible. Every morning, cases involving accused persons in the Remand Prison are heard via video link. Cases are heard swiftly as the accused are not physically transported to the Courts thus saving logistic, security and manpower cost. In the Technology Courts, videoconferencing is used for overseas witness and cases involving vulnerable witnesses, who are

JUSTICE CONFERENCE PRESENTATIONS, Australian Institute of Judicial Administration (CD-ROM) (1998), also available at <<http://www.ajia.org.au/conference98/papers/vharris/VHARRIS.html>> (visited Sept. 20, 2007). See also Victorian Parliamentary Law Reform Committee, *Technology and the Law* Report (May 1999), at 10.52, available at <<http://www.parliament.vic.gov.au/lawreform>> (visited Sept. 20, 2007).

72. This was done in Justice Tim Smith & Ian Chivers, *The Estate Mortgage Court System*, TECHNOLOGY FOR JUSTICE CONFERENCE PRESENTATIONS, Australian Institute of Judicial Administration (CD-ROM) (1998), and The Royal Commission into the Metropolitan Ambulance Service in Victoria.

73. One of the most recent innovations has been in the Supreme Court of Tasmania, which now records all its matters in digital audio-visual format. All courts can be monitored externally (allowing security monitoring and outside broadcast. Storage is on DVD: see Supreme Court of Tasmania website at <http://www.supremecourt.tas.gov.au/about_us/courtroom_technology> (visited Oct. 18, 2006).

74. See CA 7516/02 Fisher v. Yochman (unpublished, Nov. 4, 2005).

75. Criminal Procedure Law (Enforcement Authorities – Arrests) (Video Conferencing – Temporary Order), 2007, S.H. 2079.30 (Isr.).

seated in an adjacent room, away from the courtroom and the accused. The cross-examination is done via video conferencing.

Computer generated evidence is increasingly used, especially where visual presentation enhances the understanding of the case. As of August 2007, the technology courts have wireless internet for counsel. Most courtrooms are equipped for digital audio recording, enabling the judges to concentrate on their cases instead of taking down handwritten transcripts. Where audiorecording or transcripts are needed, the parties can contract the services of a transcriber.

Chamber hearings and pre-trial conferences are also done through desktop videoconferencing. This practice is gaining momentum as law firms equip themselves with inexpensive webcams, microphone and speakers. With the increased sophistication of the legal profession in the use of technology and reductions in the price of hardware, these technologies are coming to be adopted widely.

England and Wales – Telephone hearings are becoming more widespread with procedures implemented in April 2007 to create a presumption in their favour for certain types of hearings (*e.g.*, procedural hearings and interim applications of less than one hour) unless the court orders otherwise. These procedures apply in county courts and district registries of the High Court (*i.e.*, other than the High Court in London) where facilities are available, and elsewhere at the request of the parties or by order of the court on urgent applications, such as for injunctions.

Subject to leave from the court, videoconferencing is available in most courts (including the High Court in London and the Court of Appeal) to facilitate participation of those in remote locations. More litigants are using it as a means of containing costs. A protocol based on that of the Federal Court of Australia provides guidance for the use of videoconferencing in civil proceedings. The protocol emphasizes the need to consider not only the costs saved but also whether videoconferencing will promote the efficient, fair and economic disposal of the litigation, bearing in mind that it prevents the court from observing the witness firsthand.

Parties may agree to use information technology in the preparation, management and presentation of the case, subject to the views of the court. PowerPoint and/or computer simulations are not widely used in case presentation, except in specialized areas such as patent disputes where they may enhance the presentation of technical information. The main focus remains on more traditional forms of written and oral submissions.

While judges in some larger cases expect the trial bundles to be delivered electronically, there is some way to go before traditional paper files of documents referred to at the hearing are replaced by electronic files. Still, technological advances, such as computer forensics, have changed the kinds of evidence used at trial, particularly in determining the authenticity of documents.

Court stenographers have generally been replaced by audiorecordings, but the hard copy transcript of the recording remains the official record of the proceedings. Real time transcription services are widely used for larger court cases, where it is available almost instantly to the judge, to counsel and, via the internet, to others not present in court, such as client representatives. Sections of transcript can be flagged and annotated using the software, and messages can also be sent electronically between a party's legal advisers during the proceedings.

Canada – Little formal attention has been paid to the development of standards for or promotion of electronic court records for hearings and appeals. This is no doubt a function of the slow progress towards the electronic filing of documents. Courts and counsel have collaborated on a largely experimental basis to create electronic records for trials or hearings. There has been some organized progress in the creation of appeal records in some provinces.⁷⁶

The main impact of technology on the argument of a case has been through counsel using it to marshal the facts and law for the purposes of oral and written argument. Some counsel have moved from using physical demonstrative visual aids to their electronic equivalents, including presentation graphics and computer simulation. Court reporters are still required for trials and real-time or daily transcripts are generally the exception rather than the rule, and only available, if at all, on request and at the expense of the parties.

d. Court Administration

Here we cover a range of somewhat disparate matters – e-filing

76. Some appeal courts have mandated the submission of facts, and in some cases, authorities, in electronic form. See for example, Alberta: <<http://www.albertacourts.ab.ca/ca/practicenotes/k.htm>> (visited Sept. 20, 2007) (applies only to appeals where the trial was longer than 10 days). The filing of an electronic appeal record is permitted, but not mandated: <<https://www.albertacourts.ca/ca/efiling>> (visited Sept. 20, 2007).

(again), case management, the use of court websites to disseminate everything from court decisions to rules of court, and the use of email by the court to communicate with lawyers and vice versa. The NGCS in Israel appears to be the most advanced innovation in court administration of any of the countries surveyed. However, this program is still in its pilot stage and has yet to be fully implemented. Elsewhere, this is an area of the civil litigation process that seems to be awaiting the integration of developments in other areas of the process.

United States – From the courts' perspectives, e-filing offers the promise of saving space on storage, greatly reducing the likelihood of losing court files and, to a limited extent, protecting against more permanent destruction of court files where backup services are available to reconstruct files in the event of a catastrophe.⁷⁷ In addition, court calendars can increasingly be accessed online, and online access to court filings has increased.

Australia – Australia has long been a pioneer in the area of court websites. The model of the renowned Australian Legal Information Institute or "AustLII" has since been adopted in several other jurisdictions.⁷⁸ On the websites of Australian courts can be found their rules, practice directions, hearing lists and other information that make the sites a major vehicle for communication between the court and the public. The web-publication of information has obviated the need for many routine telephone enquiries and provided better and quicker information to lawyers and the public,⁷⁹ as it becomes the primary tool for communication between the court and many users. Furthermore, the prompt availability of decisions has facilitated legal research, and the posting of High Court transcripts has further enhanced the understanding of the decisions reached. In addition, the Federal Court has begun to stream "live" judgment summaries on its site in major cases.⁸⁰

77. See, e.g., Lippman, *supra* note 4, at 8 ("For the courts, e-filing benefits include storage savings, reduced processing time, and the opportunity to protect court files from loss or destruction.").

78. Australasian Legal Information Institute, at <<http://www.austlii.edu.au>> (visited Sept. 20, 2007).

79. Stuart Morris, *Where is technology taking the courts and tribunals?*, 15 J. JUD. ADMIN. 17, 20 (2005) (Austral.), available at <[http://www.vcat.vic.gov.au/CA256902000FE154/Lookup/Media/\\$file/speech_technology_and_the_courts_and_tribunals.pdf](http://www.vcat.vic.gov.au/CA256902000FE154/Lookup/Media/$file/speech_technology_and_the_courts_and_tribunals.pdf)>.

80. Federal Court of Australia, Judgments, Video Archives of Judgment

The trend towards greater case management in Australia has naturally entailed the development of databases and associated software packages for entering the details of matters to be tracked, permitting notices to be generated, managing court listings, and storing documents. This has further enabled courts to undertake more complex case management, such as setting timetables and assigning cases to various dispute resolution options or litigation tracks.⁸¹

E-filing will facilitate electronic case files and electronic case management systems and access by judges in chambers, the parties in court and others anywhere in the world,⁸² but this is a long way off. These databases will certainly facilitate research under protocols set by the courts to ensure the privacy concerns are addressed.⁸³

Israel – Under the NGCS, the judge's workspace displays all outstanding matters that require attention as links that access the file. The workspace provides access to the files assigned to the judge and to various legal databases containing statutes, case law and academic commentary. The work station connects between different types of documents, allowing the judge to search for a key term or a person (party, witness, etc. . .) simultaneously in pleadings, protocols, affidavits, exhibits etc. . . This can be done during a hearing, allowing the judge to compare the testimony given with that witness's affidavit. The judge can add private comments, invisible to the parties, on the documents stored in the digital file, preserving the judge's real time

Summaries, <[http://www.fedcourt.gov.au/judgments/ video_jdg.html](http://www.fedcourt.gov.au/judgments/video_jdg.html)> (visited Oct. 11, 2006). See D. Stepniak, *Court TV: coming to an Internet browser near you (update, developments and current issues)*, 15 J. JUD. ADMIN. 218 (2006) (Austl.).

81. Australian Law Reform Commission, *Technology – What It Means For Federal Dispute Resolution* 2.27, 3.5-3.6 (Issues Paper No. 23, 1998), available at <[http://www.austlii.edu.au/ au/other/alrc/publications/issues/23/ALRCIP23.html](http://www.austlii.edu.au/au/other/alrc/publications/issues/23/ALRCIP23.html)>.

82. See James McMillan, *Court Technology in 2007* (Presented at Fifth National Court Technology Conference, Sept. 9-12, 1997), available at <[http://www.ncsconline.org/ D_Tech/ctc/showarticle.asp?id=104](http://www.ncsconline.org/D_Tech/ctc/showarticle.asp?id=104)> (visited Sept. 20, 2007); Honorable Trevor Olsson and Steven Taylor, *E-Filing and its Significance for the Courts and the Profession* (Paper Presented at Australian Institute of Judicial Administration, Technology for Justice Conference, Oct. 21, 2002), available at <<http://www.ajia.org.au/tech3/program/presentations/AIJATECH1.doc>> (visited May 20, 2003).

83. For an overview of access and privacy issues in relation to court files in Australia, see generally A. Wallace, *Overview of Public Access and Privacy Issues* (Nov. 6, 2003) (Paper Presented to a Conference on Courts for the 21st Century: Public Access, Privacy and Security, organized by the Queensland Supreme Court and Queensland University of Technology in Brisbane) (Austl.).

impressions in an accessible format. The judge can also make public comments or changes, for example, by amending the protocol where necessary (correcting errors, noting a change in representation).

In addition, the system allows the judge to organize work assignments and schedule matters without engaging in cumbersome hearings for this purpose. Proceedings are categorized and each step in each proceeding is labeled as a “task” that is automatically assigned to the person responsible so as to automate the administration of the case by alerting the appropriate person to take action. Therefore, presumably, no tasks will fall between the cracks, assignments are handled more quickly and proceedings in general move forward more efficiently. This also generates a reliable record of the way in which the various tasks are performed across cases so as to enable the system to be adjusted over time to maximize efficiency. All this is linked to the judge’s calendar so as to streamline the scheduling process for all concerned.

Singapore – Court administration has improved tremendously with the EFS, which has fostered a paperless environment, eliminating the ever-growing demand for physical file storage and the risk of misfiling, and enabling speedy retrieval of documents.

The Courts’ website was re-developed in December 2006. The improvements include more user-friendly features and information organized for the range of users – lawyers, self-represented litigants, members of the public, and the media. Simplified pictorial flowcharts are published on the website to enable non-lawyers to understand the workings of the various processes and procedures. Practice Directions are up-to-date and they serve to inform the legal community of the latest directions and procedures. Weekly hearing dates are published for interested parties to attend court sessions.

As Singapore is very concerned to prevent a backlog in cases, the IT systems are built with features to monitor timelines and produce statistics on the number and type of cases disposed of in any given year. These are invaluable in forecasting trends and pro-actively alerting the courts to potential problems. For example, a steady increase in the number of divorce cases would prompt the court to allocate more judges, support staff and resources to family courts and to develop more community programs to encourage family cohesion.

England and Wales – The Court of Appeal and the main divisions of the High Court have had a computer-based case management system since the introduction of the Civil Procedure Rules in 1999. This includes a record of steps taken and documents

filed that is cross-referenced to the hard copy file, and it is used to generate reminders for steps to be taken in an action. Since April 2006, documents filed in the Commercial Court have been scanned and stored electronically, but this has not replaced the hard copy file.

Canada – Most courts have moved to computerized filing and docketing systems, but they vary in scope and sophistication. These technologies increase the efficiency of case management, and the ability of courts to engage in case management. More and more judges use computers themselves for communications, research, note-taking and judgment drafting, thereby reducing their reliance on the limited administrative support available to them.

ii. Emerging technologies

Despite the rapid advance of technology in many of the countries surveyed, there remain many significant developments on the horizon. In each case, the particular developments that have been slow to emerge or to be accepted are a telling reflection of the civil litigation culture in the country.

United States – The most significant of the emerging technologies appear to be those relating to the presentation of evidence, including videoconferencing, pre-recorded video testimony and simulations and re-creations that represent the digital versions of demonstrative evidence. With the continuing significance of the use of civil juries and, hence, the importance of the continuous oral trial, there has been considerable incentive to use new technologies to make the presentation of evidence in this setting more effective and persuasive. As new developments are introduced, concerns are being raised and addressed as to the way in which new media and presentation methods can distort the perceptions of jurors of the evidence presented.

Australia – Still on the horizon is the integration of electronic filing with case management and document management technology to produce a truly electronic court record. No court system in Australia has yet introduced sufficiently robust case management infrastructures and open architecture to enable seamless integration across court networks and the Internet. Law firms are moving towards the use of intranet systems enabling clients to track the progress of their litigation within the firm⁸⁴ and this may in time be

84. See Broderick *supra* note 51; Kelly Mills, *Portal Opens Window on Law*, THE

integrated with the court systems. The Federal Court of Australia has mooted the 'My Files' concept.⁸⁵ In time, courts may use SMS messaging to remind practitioners of court appointments or deliver court circulars and general reminders. Courts may also introduce on-line dispute resolution⁸⁶ and systems may be introduced to guide members of the public through their legal problems and the use of the court process.⁸⁷

Israel – The NGCS has just been introduced. Until it is fully implemented, it remains the most significant emerging technology in Israel.

Singapore – With the rapid technological advances, the Courts are constantly on the lookout for new technologies that can transform judicial administration. The Courts have established a laboratory for experimenting with leading-edge technologies for the judicial process and court systems. The iCourtLab⁸⁸ was launched in July 2006 and the Courts have since linked it with the IT industry to test out their products and solutions. The Courts have also assessed the practical use of these initiatives and their impact on the current way of working. An initiative that has been launched is the web-based desktop video conferencing with the mobile phone. With 3G phones, lawyers can discuss administrative matters with the Duty Registrar from anywhere.

Another initiative that has since been implemented is the use of PDA. With new vocabulary emerging especially in the medical and technology areas, the Court interpreters download their translated terminologies in Mandarin and Malay into the PDAs thus enabling them to 'learn on the go'.

With the establishment of the iCourtLab and the strong partnership with the IT industry and the iCourtLab Advisory Council

AUSTRALIAN, November 15, 2005.

85. Jamie Wood, Federal Court of Australia, eFiling Integration Project (Oct. 20, 2004) (Presented at the Court Technology: Updates and Developments Conference, Melbourne, available at <<http://www.aija.org.au/CTC/JamieWood%20-%20Developing%20eServices%20in%20Courts.pdf>> (visited Oct. 18, 2006).

86. Tony Sutherland, The Internet and Beyond: A New Order for Justice? (Oct. 9, 2000) (Paper Presented at the AIJA Technology for Justice Conference, Melbourne, available at <<http://www.aija.org.au/tech2/present.htm#sutherland>> (visited Sept. 20, 2007).

87. Victorian Parliamentary Law Reform Committee, *supra* note 71, at 12.22.

88. For more details, see Accenture Government Executive Series Report, Leadership in Customer Service: Delivering on the Promise, at 73, <http://nstore.accenture.com/acn_com/PDF/2007LCSDelivPromiseFinal.pdf>.

to showcase their products or solutions in the judicial environment, the foundation is set for further technological advances.

England and Wales – The courts have yet to move from the paper file to an “electronic case file,” and the feasibility of implementing an Electronic Filing and Document Management system is still under review. However, e-discovery is likely to see improvement with the use of “concept searching” software to locate potentially relevant documents electronically, rather than relying on narrower key word searching which is currently the standard. Even more promising is “concept mapping” technology that sorts documents according to concepts, which are themselves automatically selected on the basis of the contents of the documents loaded into the system, and shows the links between the different concepts. Similarly promising is the development of more advanced and reliable systems for searching and retrieving audio evidence, such as voicemail messages, and for the automatic transcription of such evidence. Finally, electronic court bundling is likely to see significant progress in the years ahead.

Canada – The newest technologies include: the electronic filing of documents and issuing notices from the court in the Federal Court and in Prince Edward Island; mandatory e-discovery protocols as part of the rules of court being implemented in British Columbia, Alberta and Ontario; instances of court and counsel collaborating to create electronic records and manage hearings; and direct judicial use of computer technology.

B. How New Technologies Are Changing the Core Values of Civil Litigation

New technologies have the capacity to change the core values of civil litigation by making litigation more efficient and effective, by making the civil justice system more accessible, and by changing the way we determine the facts and decide the case. In this part of the report, we consider the ways in which each of these changes has been experienced in the countries surveyed.

i. Making Litigation More Efficient and Effective

There is no question that technology in the area of civil litigation aims, as it does in every area of human endeavor, to make the process more effective and more efficient. The innovations that have been accepted and implemented in each country appear to be having that

effect. The interesting features of these developments are the ways in which the legal systems are handling the unanticipated consequences.

United States – As with the other legal systems surveyed, the gradual move from a paper-intensive process to a digitized one promises to increase efficiency, even as it encourages reliance on a larger volume of documents. The striking feature of the developments in the United States, however, are those discussed above in connection with the use of new technologies to enhance the presentation of evidence.

Australia – Electronically searchable document production is a growth area that has spawned specialist consultancies.⁸⁹ With the increase in the volume of production possible questions have been raised as to whether the costs of imaging and indexing documents for electronic discovery is properly recoverable as a reasonable cost of the litigation.⁹⁰ This prompted a practice direction in 2002 on the use of technology in civil matters, which sought to clarify that funds properly expended on the use of technology to increase efficiency and reduce costs “will be treated as ‘necessary and proper for the attainment of justice or for enforcing the rights of a party’”⁹¹ within the meaning of the costs rules. Apart from this concern, use of technology in the pre-trial preparation phase and in the courtroom appears likely to produce substantial savings in costs and time generally, but empirical research has yet to confirm this. The potential has prompted discussion about whether the courts should invest in the necessary infrastructure to make the use of technology in the courtroom available to litigants who otherwise must supply their own equipment.

Court administrators would point to the success of case management systems (the procedural changes coupled with the technology necessary to implement them) in reducing delays and backlogs in many jurisdictions and encouraging earlier settlement of cases. These systems have made possible the more accurate gathering

89. See, e.g., elaw Australia, <<http://www.elaw.net.au/discovery.htm>> (visited Oct. 18, 2006).

90. Kennedy Taylor Pty Ltd v. Grocon [2002] V.S. Ct. 32, BC 200200604, available at <<http://www.austlii.edu.au/au/cases/vic/VSC/2002/32.html>> (visited Oct. 21, 2006) (B.C.).

91. Supreme Court of Victoria, Guidelines for the Use of Technology in Litigation in Any Civil Matter, Practice Note No. 1 of 2002, 5 VR 107 (2002), <[http://www.supremecourt.vic.gov.au/CA256902000FE154/Lookup/PN/\\$file/PN-1-2002%20-%20IT.pdf](http://www.supremecourt.vic.gov.au/CA256902000FE154/Lookup/PN/$file/PN-1-2002%20-%20IT.pdf)> (visited Oct. 19, 2006).

and reporting of statistics on case processing times, hearing rates and disposal rates. The general trend of those statistics shows a substantial improvement in the time taken to deal with civil litigation in many jurisdictions in Australia over recent years.⁹²

While courts argue that case management can contribute to curbing litigation costs, by promoting efficient management of court business, some lawyers have been critical of the cost of case management. They argue that the complexity, deadlines and other demands of some case management systems place unwarranted additional costs on lawyers and their clients.⁹³ However, these factors are not necessarily related to the technological aspects of the systems; the technology merely provides the means to regulate and monitor the procedural changes more efficiently. One jurisdiction where the introduction of technology has been greeted with some enthusiasm by the profession is the Land and Environment Court in New South Wales. The court's eCourt system has proved very popular with lawyers as it considerably reduces the amount of time they have to spend attending court and traveling to court to deal with directions hearings and pre-trial matters.⁹⁴

Despite the claims made for its efficacy,⁹⁵ electronic filing does not yet seem to have made a great impact as yet in terms of saving cost or increasing efficiency as a result of the slow take-up rate. The full benefits of electronic filing will probably not be realized until full integration of electronically filed documents into court case management and document management systems is possible (the electronic court record.)⁹⁶ However, certainly for those users filing in

92. See, e.g., Australian Productivity Commission, Government Service Provision, Courts Administration, <<http://www.pc.gov.au/gsp/reports/rogs/index.html>> (visited Oct. 21, 2006); Australian Law Reform Commission, *Review of the Adversarial System*, Issues Paper 22, 1997, available at <<http://www.austlii.edu.au/au/other/alrc/publications/issues/22/ALRCIP22.html>> (visited Sept. 20, 2007).

93. Jeremy Badgery-Parker and J. Harrison, "A Short Way Down the Track: Differential Case Management in the Supreme Court," 33 (5) *Law Society Journal* 34 (1995) (N.S.W., Australia), cited in Australia Law Reform Commission, *supra* note 92, at 8.29.

94. Greenwood, *supra* note 17.

95. See, e.g., P. Washington, e-filing: Virtually Reality (Oct. 20, 2004) (Presentation at the Conference on Court Technology: Updates and Developments, Melbourne, available at <<http://www.aija.org.au/CTC/Peter%20Washington%20%20efiling%20%20Fighting%20the%20Naysayers.pdf>> (visited Oct. 19, 2006).

96. See, e.g., Sarah Lethlean & Diana Elliott, E-filing: Fighting the Nay-sayers (Oct. 20, 2004) (Presentation at the Conference on Court Technology: Updates and Developments, Melbourne, available at <<http://www.aija.org.au/CTC/>

bulk, there are already some significant advantages in terms of time and cost, and institutional users seem to be among those at the forefront of the adoption of e-filing.

Israel – Efficiency is promoted by digital technologies on many levels. The e-filing of complaints and motions and online service of process reduces the costs of transmitting and storing documents. The need to commit to a timeline for actions (a feature of the NGCS) makes court proceedings more efficient. Accessing files from the office and from home serves to shorten proceedings. And the judges' ability to view all materials digitally during the trial and add private comments shortens the time needed for writing a decision by enabling the judge to record contemporaneous impressions of the evidence. Advances in digital technologies still need to be matched with changes to the rules of evidence that were designed for a print era, such as the best evidence rule, which requires the retention of paper "originals." Similarly, advances in digital technologies, such as videoconferencing, need to gain the confidence of courts as appropriate means of presenting evidence so as to be used more widely. Without such changes, the potential for added efficiency through technology will not be fully realized.

Singapore – Civil litigation using the EFS has brought about tremendous improvements in efficiency for the Courts and the legal community. The EFS functions as the repository of court documents and it has enabled electronic hearings with little reliance on hardcopy documents. The EFS facilitates the searching of court records and their retrieval. There are plans to link the EFS to legal research databases in the near future.

The system also monitors timelines from the commencement of cases to their disposal and the intermediate steps in between. To maintain the commitment to avoiding a backlog, statistics and reports are produced for monitoring key performance indicators.

Pre-trial conferences through video links are another step in improving efficiency and ensuring the effective use of time.

England and Wales – Collating and reviewing documents in electronic form for disclosure is far more efficient, and it permits

Diana%20Elliot%20&%20Sarah%20Lethlean%20-%20efiling%20.pdf>; Maria Diamond, E-filing in the Federal Court (Oct. 20, 2004) (Presentation at the Conference on Court Technology: Updates and Developments, Melbourne), available at <<http://www.aija.org.au/CTC/Maria%20Diamond%20%20efiling%20%20Fighting%20the%20Naysayers.pdf>>.

them to be searched electronically to prioritize their review by members of the team at different levels of seniority. This also reduces the need for costly time-consuming manual processes, such as pagination and copy checking. With the development of “concept searching” and “concept mapping” technologies, the benefits of these systems will further increase. These efficiencies, however, have tended to encourage the production of larger volumes of documents, and keyword searching, though more efficient, can miss important documents, and so it needs further development to ensure reliability. In addition, the organization and manipulation of electronic documents can separate them from their natural context, requiring careful attention to the manner in which the database is structured.

Telephone hearings and videoconferencing have increased efficiency but they can pose challenges for assessing evidence or submissions delivered in this way rather than seen and heard face-to-face. The publication of judgments online has increased access to legal precedents and, hence, improved the effectiveness of the litigation process, but it has increased the time and cost of legal research. Where issues of fraud arise, computer forensics have greatly improved the accuracy of determining the authenticity of documents.

Canada – Communications technologies, primarily email, have reduced the time and cost of correspondence and document delivery between counsel and, where accepted, between the courts and counsel. The decreasing costs of document imaging and database software, of computer hardware, and particularly of digital storage have made electronic assembly and management of documents for discovery faster and less expensive for document intensive matters.

ii. Making the civil justice system more accessible

The consensus in this area appears to be that anxiety over the digital divide is overstated and that the move to digital records and communications is coming to have a positive benefit not only for the majority of participants in the civil litigation process but also for those who were once thought likely to be marginalized even further by it.

United States – Online access does not afford access to everyone, but it seems a specious objection to new technologies to complain that some members of society do not have easy access to the Internet. The relatively small proportion of persons who do not have access are otherwise likely to be excluded from the larger society, and they may, in fact, have greater access to court activities than they did before online access became possible.

Australia – Web publication of court judgments and information has improved access to precedents and assisted lawyers with procedural information. Some courts are now trying to direct their systems better to the needs of non-lawyers.⁹⁷ This will require reconsidering how information is delivered to members of the general public, including how it can be structured from their viewpoint⁹⁸ to take into account users' varied levels of knowledge and the way they access and use information.⁹⁹

Videoconferencing has helped considerably to overcome the 'tyranny of distance', particularly in jurisdictions with widely distributed population centres that necessitate lengthy journeys for all involved to attend court. It has proved as welcome a development in Australia as it has been in the United States, particularly in appeals, despite the loss of personal interactions.¹⁰⁰ In trials, however, the approach has been more conservative where there is likely to be an issue involving the credibility of a witness, and the use of videoconferencing has usually been limited to situations where the parties consent. The assessment has tended to be affected by the quality of the technology. Guidelines and practice directions have been developed to address issues affecting the recording of the evidence, such as the presence of third parties, provisions for confidential communications between an accused and his legal representative, and even control of camera viewpoint and audio links.¹⁰¹

97. Victorian Parliamentary Law Reform Committee, *supra* note 71, at 12.19; *See also* Family Court of Australia, <www.familycourt.gov.au> (visited Oct. 20 2006).

98. *Id.*; Cheryl Rae Nyberg, Best Practices in Delivering Court Information to the Public (Sept. 14-16, 1999) (Paper Presented to the Sixth Court Technology Conference sponsored by the National Center for State Courts, Los Angeles), available at <http://lib.law.washington.edu/_cheryl/ctc6pre.html> (visited Apr. 23, 2002).

99. Still, there has been some tendency to become lax in discerning the relevant authorities, and thereby to overcite authorities. Justice Michael Kirby, Appellate Advocacy - New Challenges, The Dame Ann Ebsworth Memorial Lecture (Feb. 21, 2006), available at <http://www.highcourt.gov.au/speeches/kirbyj/kirbyj_21feb06.pdf> (visited Oct. 20, 2006).

100. M. DUNN & R. NORWICK, REPORT OF A SURVEY OF VIDEOCONFERENCING IN THE COURTS OF APPEALS, FEDERAL JUDICIAL CENTER, 19 (2006), available at <[http://www.fjc.gov/public/pdf.nsf/lookup/vidconca.pdf/\\$file/vidconca.pdf](http://www.fjc.gov/public/pdf.nsf/lookup/vidconca.pdf/$file/vidconca.pdf)>.

101. *See, e.g.*, Supreme Court of Tasmania, Video Conferencing Guidelines, <http://www.supremecourt.tas.gov.au/about_us/courtroom_technology/video_conferencing_guidelines> (visited Oct. 20, 2006); County Court of Victoria, Procedural Requirements for Video-link Applications, <[http://www.countycourt.vic.gov.au/CA2570A600220F82/Lookup/Video_Conferencing/\\$file/vc_procedural_requirements](http://www.countycourt.vic.gov.au/CA2570A600220F82/Lookup/Video_Conferencing/$file/vc_procedural_requirements)>

Israel – Access to courts by litigants is expected to be increased by the added efficiency afforded by the NCGS, once the system is fully operational. The digital divide is addressed by making participation voluntary for attorneys and *pro se* litigants, enabling access without a smart card for proceedings in which parties are typically unrepresented, and providing access through clinics and community centers. All in all, the NCGS represents a step in the right direction in an era in which the right of access to courts has received constitutional status in Israel.¹⁰² The benefits of these technological advances will increase as courts gain sufficient confidence with digital technologies to dispense with rules requiring the retention of paper documents and limiting the use of videoconferencing.

Singapore – Litigants who do not have access to computers can go to the EFS service bureaus and seek assistance there. The courts have always been concerned with promoting access to justice. The EFS also promotes the efficiency and the effectiveness of litigation generally. For example, videoconferencing saves travel time for lawyers. The revamped Subordinate Courts' website, which includes the Civil Justice Division's website, was launched in December 2006. The new website includes user-friendly features that group information neatly for lawyers, litigants, members of public and the media. This enhances informational access to justice for anyone who wishes to learn more about the civil justice system or to commence a proceeding. The new website includes an enhanced electronic Alternative Dispute Resolution (e@dr) page for commencement of online mediation. Currently, there is already an avenue for such online mediation. Going forward, the designated e@dr webpage will be given more prominence, so that potential litigants with a civil dispute will be made aware of such a platform and can save time and litigation costs by first seeking to resolve their dispute through mediation. Further, the Small Claims Tribunals (SCT), which is part of the civil justice system, will launch online filing in 2007. Claimants can lodge a SCT claim via the Internet, without having to travel to the Court.

.pdf > (visited Oct. 20, 2006) (assessing the effect of remote communication tools on the capacity of 'virtual participants' to fully participate in the hearing process and the quality of their experience is being developed by a team headed by University of Canberra researcher, Dr David Tait).

102. See CA 733/95 Arpel Aluminum v. Klil Industries LTD [1997] IsrSC 51(3) 577; Kozlovski, *The Computer and the Legal Proceedings – Electronic Evidence and Court Procedure* (Israeli Bar Association, 2000) (Hebrew) 179-185 (2001).

England and Wales – Online claims services have the potential to make the civil justice system more affordable and accessible to the general public. According to the courts service website, MCOL is now issuing more claims than any local county court,¹⁰³ but the types of claims that can be dealt with are limited and it remains to be seen whether this type of ‘Cyber-Court’ model can be expanded. Telephone hearings and videoconferencing also seem likely to increase the accessibility of the civil justice system for individuals and small businesses where the time and cost of travelling to hearings might be significant. The availability of judgments and court rules online can improve access to the civil justice system, including for unrepresented litigants, provided that they are able to navigate the law and the procedure.

Canada – Parties and potential parties without access to new technologies are at a disadvantage in accessing and participating in litigation. While the more advanced technologies are relatively accessible to sophisticated counsel and parties, their impact on participants with less access is often considered only as an afterthought.

iii. Changing the way we determine the facts and decide the case

The way we determine the facts and decide the case is probably the single most significant area of change that we will experience with the introduction of new technologies. It is likely therefore to bring with it the greatest controversy. It is also the area in which the relative emphasis placed on the continuous oral trial is likely to distinguish the experience with new means of presenting evidence in one country from another.

United States – The use of legal databases such as Westlaw and LexisNexis for searching relevant precedents is so well established in the United States that it would hardly occur to include it in a report on new technologies, even though it has transformed legal research, and with it, the ease and confidence with which precedents are used in deciding cases. As a result, it probably is fair to say that the greatest changes underway are those discussed above concerning the presentation of evidence and the potential this has to affect the way in which the facts are determined.

103. 55,000 in years 2004 to 2005. See Her Majesty’s Court Service, <<http://www.hmcourts-service.gov.uk/cms/1046.htm>> (visited Aug. 31, 2007).

Australia – On considering the possibility that the physical courtroom may eventually be replaced by the virtual courtrooms, one senior Australian jurist noted the need to think through the implications of dispensing with the important symbolic and practical purposes the court room serves in terms of ritual, the promotion of dialogue between parties, and collegiality.¹⁰⁴ In fact, by and large, the use of new technologies in civil trials in Australia has yet to make any significant impact on the fundamental nature of the adversarial process. There is still a strong preference for the continuous oral trial and real-time in person involvement of participants. Courts have been cautious in their adoption of new evidence presentation techniques; although increasing comfort with the use of new technologies may lead to changes down the road, and help in overcoming the ways in which the differential impact of unfamiliar presentation methods can distort the trial process.¹⁰⁵ The Australian Court of the Future network is undertaking a research project on this question.

On the question of how new technologies are changing the way we decide cases, in the transition to online research, the legal profession has yet to master the challenges of managing the proliferation of available case law so as to cite only relevant authorities.

Israel – The impact of new technologies on fact finding is complex. Enabling judges to search through relevant materials and add private comments into the file in real time seems to be an effective way of promoting accurate recollection by the judge at the time of writing the judgment. Also, relaxation of the rules of evidence and the increased variety in presentation media can create a fuller picture. However, this fuller picture may be subject to unanticipated forms of manipulation. Changes to the Best Evidence Rule and the Rule Against Hearsay will bring the law into line with the current informal practices of many judges and the necessary routine of litigation in the digital era.¹⁰⁶ The impact of new

104. Kirby, *supra* note 99.

105. J. Clough, *The Role of Judges in Assisting Juror Comprehension*, 14 J. JUD. ADMIN. 16, 21 (2004).

106. Orna Rabinovich-Einy, *Balancing the Scales: The Ford-Firestone Case, The Internet, and the Future Dispute Resolution Landscape*, 6 YALE J.L. & TECH. 1, 3 (2003-04); The Proposed Bill to Amend the Evidence Ordinance [New Version] (15 amendment) (Original and Copy as Evidence), 2006, 232 HH 248 (Isr.); Kozlovski, *The Computer and the Legal Proceedings – Electronic Evidence and Court*

technologies on fact finding will also be tested as videoconferencing comes to be more widely used. The judges' ability to search through relevant materials and add private comments into the protocol in real time seems to be an effective way of promoting accurate recollection by the judge at the time of writing the judgment.

Singapore – With videoconferencing, Singapore judges are able to conduct co-mediation with judges from other jurisdictions in settlement conferences known as Court Dispute Resolution International (“CDRI”) so that additional judicial perspectives and views can be brought to bear on disputes before the court for settlement. This is particularly welcomed by multinational businesses participating in litigation in Singapore.

The use of technology to present evidence in the form of computer simulations, digital photographs, videos or just PowerPoint illustration serves only to enhance the understanding of the case and hence improve the adjudication. The subscription to legal databases, such as LexisNexis and LawNet which searches databases for precedent cases, enhances the reasoning in judgments.

England and Wales – The use of technology has not yet produced any fundamental change in the way the facts of the case are determined and the way the case is decided. Despite the increase in judicial case management, assisted to some extent by increased use of technology, the system remains adversarial. Further, although the use of written evidence and submissions has increased greatly over the years, and telephone hearings and videoconferencing are becoming more widely used in appropriate cases, there remains a strong focus on both oral advocacy and physical presence in the courtroom.

However, in cases where computer forensics are used, this technology may alter the process of establishing the facts and the basis on which the facts are determined. In addition, where the subject matter of a case is highly technical, the use of computer simulations to present complex technical matters to the court may have an effect on the way the judge understands the information presented, and perhaps also the willingness to accept that information, thereby having an impact on the result of a case.

Canada – At this stage, the ad hoc use of technology by judges in the hearing of cases makes any generalization about its impact on the

way in which the facts of the case are determined and the way in which the case is decided very difficult. The extent to which there is a difference for judges who make extensive use of technology in the manner in which they hear and decide cases remains to be seen.

C. Whether These Changes Are for the Better

Surprisingly, this question seems to be the one on which there is the greatest consensus. Frustrations experienced with the pace of implementing new technologies and controversies arising over the challenges of developing new practices and protocol to enable them to be integrated into the civil litigation process do not appear to have affected the overall view that these changes are for the better.

United States – The experience in the United States suggests that the new technologies are improving efficiency and accessibility. The increased availability of court records is posing fresh challenges for striking the balance between ensuring that court proceedings are open to the public and that the legitimate privacy concerns of litigants are protected; and new issues are emerging over the costs associated with e-discovery and discovery of electronic communications. In addition, new technologies are proving controversial where they appear to have the potential to alter the balance and the practices associated with the use of civil juries, and thereby to affect the core values of the civil litigation process. It remains to be seen whether some of the changes in the way evidence is presented on the horizon will gain greater acceptance and our approach to the reception of information is transformed as we move further into the digital era.

Australia – The recent developments have generally all been positive in terms of improving access to, and information about, the civil justice system and improving its efficiency and effectiveness. The challenges they create, such as managing the increased volume of material in litigation, are likely to be addressed by further technological development. Still, the former Chief Justice of Australia, Sir Gerard Brennan, once described technology as ‘but a tool for the well-trained legal mind,’¹⁰⁷ which underscores the need to manage technological development carefully to ensure that emerging technologies bring with them the possibility of achieving the objectives of fair, efficient and affordable justice.

107. Sir Gerard Brennan, Opening Address: Technology for Justice Conference, TECHNOLOGY FOR JUSTICE CONFERENCE PRESENTATIONS, Australian Institute of Judicial Administration (1998) (CD-ROM) (Melbourne, Austrl.).

Israel – Court proceedings, like other social institutions, are undergoing dramatic changes through the introduction of new technologies, the effects of which are far from settled. In addition to enhancing efficiency and access, the NGCS has the potential to increase accountability and therefore the respect for the administration of justice in civil disputes; and it has the potential to improve access to justice by obviating the need for restrictive rules of jurisdiction and venue that were developed to deal with the challenges of traveling to deliver documents and attend hearings. Increased documentation and transparency through the NCGS has the potential to enhance fairness and equality by curbing discretion, documenting decision-making and uncovering inaction, inappropriate conduct, and systematic problems. This documentation, coupled with systematic review of performance, could drive the judicial system to improve continuously.

Singapore – Technology is a great leveler. Its increased efficiency ensures that justice is more easily accessible to the public. New technologies administered in a timely and expeditious manner have enhanced public trust and confidence in the judicial system. Furthermore, technology has been used in conjunction with the increased use of mediation for civil and family law disputes to improve the civil justice system. As technology advances, it is important to engage the range of constituents, such as lawyers in the planning stages so that it will continue to be useful and cost effective for all.

England and Wales – The impact of new technologies has largely been positive, but in some cases these developments create the need for further developments, such as when e-discovery enables the production of more documents and this generates the need for better technologies to manage them. All this signals caution in considering whether the kind of litigation facilitated by the technologies available in any given situation remains proportionate to the matter in dispute.

Canada – The effect of technological advancements on civil litigation has generally been positive, but since Canada's main court system is administered province-by-province, the improvements have not progressed at a uniform pace and, even in the more advanced courts, the pace has generally been slowed by the inability to take advantage of the economies of scale that would be available to a centrally administered federal court system.
