

Electronic Litigation in Singapore: A Roadmap for the Implementation of Technology in the Litigation Process

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1 Background

- 1.1 Following the phased implementation of the Electronic Filing System (EFS) commencing in 2000, the Honourable the Chief Justice set up an EFS Review Committee to conduct a review of the EFS in 2003. The EFS Review Committee made certain recommendations for improvements to the EFS. In August 2003, the EFS Review Implementation Committee (the Committee) was established to implement the recommendations made by the EFS Review Committee.
- 1.2 One of the key tasks of the Committee is to devise a holistic approach to integrate the use of technology in the litigation process, harnessing the benefit of experience gained through the implementation of the EFS since 2000. The Committee adopts the view that in order for technology to be successfully integrated with the litigation process, all the stakeholders (*viz.* the lawyers, the Judiciary and the service providers) have to be keenly involved in the development of a system that would harness the full potential of information technology for the benefit of all stakeholders.
- 1.3 The first task of the Committee in that direction was to organise an Electronic Litigation Colloquium to provide a forum for discussion and brainstorming. The one-day colloquium, held on 17 April 2004, was attended by members of both the Bench and the Bar. Representatives from InfoComm Development Authority and technology vendors in the legal sector were also invited to participate in the Colloquium. The discussions during the colloquium form the substratum of this paper.

2 Introduction

- 2.1 The roadmap paper charts a course for the deployment of technology in the litigation process in Singapore. The end goal is to facilitate the disposal of cases and thereby enhance access to justice. To this end, technology will be implemented where it is efficacious.
- 2.2 The mandate of the Committee is to adopt a holistic approach to the implementation of information technology (IT) systems in the litigation process in order to better meet the needs of its various stakeholders. The Committee appreciates the inextricable link between the successful implementation of technology and work processes of the stakeholders. The Committee therefore understands that several of its recommendations and proposals in this paper will have an impact on how the law firms and the courts operate. In that spirit, this paper seeks the feedback of the stakeholders to ensure that the final roadmap is one that is beneficial and acceptable to all.
- 2.3 In order to achieve the new functionalities proposed, the Committee envisages that no one single IT system is likely to be able to provide the full range of features described in this paper. Rather, what is envisioned is a number of systems working together. For convenience, these will be referred to collectively as the 'Electronic Litigation Systems' (ELS).
- 2.4 The aim of this paper is to provide general guidelines and direction to bind future implementing committees carrying out these recommendations. Further, it is envisaged that the different stakeholders from both the private and public sectors may participate in different components of the ELS.

3 Overview

- 3.1 This paper is divided into two Parts. Part I describes the functionalities that the ELS will bring to the legal profession; Part II describes some issues corollary to the implementation of the functionalities described in Part I. The holistic approach to the technology implementation in the litigation process taken in the roadmap consists of the following areas:

3.1.1 Part I: Functionalities of the ELS

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- (a) Case management for law firms;
- (b) Case management for the courts; and
- (c) Electronic hearings.

3.1.2 Part II: Corollary considerations

- (a) Reviewing the litigation process;
- (b) Costs and business models; and
- (c) Open technical standards for integration and interoperability.

Part I: Functionalities of the Electronic Litigation System

Case Management for Law Firms

4 Introduction

4.1 The ELS should function as an effective and efficient litigation tool by providing features that litigation lawyers will utilise in their daily work. Colloquium participants identified the following key areas where the ELS can assist in the management of a litigation lawyer's case file:

- (a) Provide integrated due diligence checks with various government departments;
- (b) Function as a repository of case information;
- (c) Function as an electronic data room for case documents;
- (d) Provide a conduit for communications between law firms and the Court;
- (e) Provide a conduit for law firms *inter se*; and
- (f) Be customisable to suit different practices (in this regard, see paragraph 9 below).

5 Integrated due diligence checks

5.1 The typical workflow of a litigation lawyer involves the conduct of due diligence checks at various stages of the litigation process, for example, upon receipt of instructions to act, before filing an originating process, or before commencing execution proceedings.

- 5.2 The ELS should provide a seamless way of conducting due diligence checks with *publicly accessible* information systems operated by multiple governmental departments, for example:
- (a) The identity number¹ and address of parties with the Accounting and Corporate Regulatory Authority (ACRA) (for corporations and individuals);
 - (b) Cause book, bankruptcy and winding-up searches with the Registries of the Supreme Court and Subordinate Courts;
 - (c) Vehicle registration information from the Land Transport Authority (LTA);
 - (d) Marriage applications and marriage records searches from the Registry of Marriages (ROM);
 - (e) Property tax or valuation list information from the Inland Revenue Authority of Singapore (IRAS); and
 - (f) Land lot number searches from the Singapore Land Authority (SLA).
- 5.3 The data in the available systems should be capable of being interfaced with the ELS or future web-services. For example, at this juncture, it is proposed that lawyers should be able to verify the validity of NRIC numbers on the lawyer's front-end system. Alternatively, the automated checks can be done at the courts' back-end system. In the event that the information is incorrect, the filing can be automatically rerouted back to the lawyer to inform him that the NRIC number is incorrect.
- 5.4 The information, once retrieved, should be capable of integration with the law firm's practice management system. However, it should be noted that there may be a cost to the ELS for the transfer of the necessary data. In addition, government agencies may be concerned about issues of privacy such that some data may not be made readily available.

¹ For corporations (including registered businesses), this will be the registration number and address. For individuals, this will either be the National Registration Identification Card (NRIC) number, Foreign Identification Number (FIN) or Unique Identification Number (UIN). Certain other agencies may have to be included, examples are the Registry of Societies and the Registry of Co-operative Societies. There are confidentiality matters that have to be resolved with some of the agencies.

6 Case information repository

- 6.1 The ELS should function as a case information repository for lawyers. Information from the integrated due diligence process outlined at paragraph 5 above could be combined with other information which is typically kept in a lawyer's case file or practice management system. This would include:
- (a) Particulars and other information relating to the parties; and
 - (b) Information relating to the case which is provided by the courts (for example, suit numbers, court fees and hearing dates).
- 6.2 One key benefit of the case information repository is that case information may be used to automatically fill in forms for filing documents with the courts or for service on other law firms. Information is entered once into the repository and re-used on multiple occasions subsequently.
- 6.3 The case information repository can also function to store information received from the courts: for example, after filing a writ or summons or summons-in-chambers, the suit or summons-in-chambers number assigned by the courts can be automatically stored in the case information repository. The same can also be done for court hearing dates, where hearing dates can be shown to the lawyers *via* the ELS.
- 6.4 Another important category of information that would be kept in the case information repository would be information relating to disbursements, for example, filing fees, stamp duty, hearing fees, *etc.* Such information should be capable of being downloaded and integrated with the law firms' practice management or accounting system. In addition, fixed costs which have been ordered during proceedings could also be captured into the ELS and such information eventually provided to lawyers through the case information repository. This would greatly facilitate the preparation of bills for legal services rendered.

7 Electronic data rooms (EDRs)

7.1 Overview

7.1.1 At the Colloquium, the concept of electronic data rooms (EDRs) was mooted. Essentially, the participants at the Colloquium canvassed the idea that the ELS could function as EDRs for both lawyers and the courts, so as to facilitate online case management. The following paragraphs outline the operation of the EDR concept.

7.2 *Structure of the EDRs*

7.2.1 Essentially, the EDRs can be viewed in terms of three distinct but interconnected parts:

- (a) War Rooms;
- (b) Lawyers' Case File; and
- (c) Courts' Case File.

7.2.2 Please see Annex A for a diagrammatic representation of these three components of the EDRs. The following paragraphs give a brief outline of how the different components function conceptually.

7.3 *War Rooms*

7.3.1 A litigant engages a lawyer for a particular case. A War Room can be set up to facilitate communication and correspondence between that litigant and his lawyer. All documents and relevant material relating to that particular case will be stored in the War Room, for example:

- (a) Pleadings and other documents that are in various stages of preparation; and
- (b) Other documents (including documentary evidence) that have been supplied by the client and which may be used in the litigation process.²

7.3.2 If the opposing litigant and his lawyer decide to contest the matter, a separate War Room can be set up for their use. In this separate War Room, the opposing litigant and his lawyer can communicate with each other and exchange correspondence.

² Evidence which is paper-based can be converted into an electronic format and uploaded into the electronic data room by either the law firm or the client.

- 7.3.3 Access to each individual War Room will be restricted to the litigants and their respective lawyers. Opposing parties and counsel will not have access to it, for example, the plaintiff's lawyer will not have access to the War Room between the defendant and his lawyer.
- 7.3.4 The War Room can also ease the process of discovery. As a matter of course, all documents for a case can be uploaded into the War Room (if the litigant and his lawyer choose to use one). For documents that are to be discovered, the lawyer can simply grant the opposing counsel access to these discoverable documents.
- 7.3.5 The War Room concept is not limited to the individual litigant and his lawyer. The model can also apply where the litigant is a group of individuals (for example, directors of a company) and where their legal counsel is a team of lawyers. If there are other parties involved in the case (for example, third parties, co-defendants, *etc.*), they and their respective lawyers can create their respective War Rooms to work from.
- 7.3.6 If a litigant engages his lawyer for other matters, they can create other War Rooms to communicate with each other for the purposes of the other matters. In such a situation, there will be multiple War Rooms between the litigant and his lawyer.
- 7.3.7 Individual War Rooms should be able to integrate with a law firm's document management system.
- 7.3.8 The War Rooms will be operated and managed entirely by the private sector. It is the prerogative and duty of the stakeholders in the private sector to put in place precautionary measures to ensure that the parties' and lawyers' confidentiality are preserved. Any liabilities that may arise from the breach of confidentiality should be catered for (for instance, through carefully worded disclaimer clauses in the contracts between the vendors, the lawyers and their clients). This arrangement should be worked out at arms' length between the parties.

- 7.3.9 Enabling a lawyer and his client to exchange documents in their War Rooms will encourage the use of the War Rooms as a virtual meeting room for collaboration. For example, clients will be able to upload documents and other electronic evidence into the War Room, lawyers can make use of the War Room to give clients access to draft court documents and exchange notes with clients, and lawyers can grant clients access to court documents in the Lawyers' Case File (see paragraph 7.4 below) that have been filed and served.
- 7.3.10 While War Rooms are a useful feature, the Committee recognises that the use of War Rooms in the ELS should be voluntary. If lawyers do not find that the scale of a particular matter warrants the setting up of a War Room, then a War Room need not be established for that matter.

7.4 *Lawyers' Case File*

- 7.4.1 Besides the War Rooms, the EDRs will also host the Lawyers' Case File. When a lawyer files a document to the court, the document will be filed in the Courts' Case File (see paragraph 7.5 below). An exact copy of that document will be deposited into the Lawyers' Case File. Only the lawyers will have access to the Lawyers' Case File.
- 7.4.2 The Lawyers' Case File will be a repository of the following categories of material:
- (a) Pleadings and other documents that have been prepared on behalf of the client and filed with the courts; and
 - (b) Pleadings and other documents that have been served by the opposing party.
- 7.4.3 A key feature of the Lawyers' Case File is that the lawyer will be able to make annotations on the documents to aid his presentation of the case in court. These annotations will be saved separately for each lawyer and only the lawyer who made those annotations will have access to them; neither the courts nor opposing counsel will be able to see those annotations as he prepares them. (For displaying these annotations in court, see paragraph 18 below.)

7.4.4 Since the Lawyers' Case File will contain all documents relating to all matters filed and served by a lawyer for his client, the lawyer will be able to search for documents that have been filed by or served on the client. This will mean that a lawyer may not need to use the case index search function to search for documents which have been filed by or served on his client. However, a case index search will still be necessary to view documents not served on the client, for example, interlocutory applications that do not involve the client.

7.5 *Courts' Case File*

7.5.1 The Courts' Case File will contain all documents filed by the parties for a particular case. Only the courts will be able to access the documents filed in the Courts' Case File. The documents in the Courts' Case File will be an exact replica of the documents found in the Lawyers' Case File, except that the annotations saved by the lawyers are not captured in the Courts' Case File.

7.5.2 For more information on the Courts' Case File, please see paragraph 15 below.

7.6 *Use of EDRs during hearings*

7.6.1 During hearings – whether in court or chambers – a lawyer can access documents which he has filed and documents which have been served on him. He will be able to access these documents when he prepares for the hearing at his office and also in court during the conduct of the hearing. This will contribute to a 'paper-less' hearing (see paragraph 18 below for more details).

8 Communications conduit

8.1 The ELS can perform a crucial role as a conduit for communications between the courts and the law firms on one hand and amongst law firms *inter se* on the other hand.

8.2 *Template-based filing*

- 8.2.1 The concept of filing would undergo a major shift in paradigm, moving away from the filing of documents to the filing of information. Pleadings, affidavits and other documents generated in the course of litigation would be filed as textual information, possibly through a template. Documentary exhibits would be filed in any of the acceptable open file formats.
- 8.2.2 This approach would allow clients to upload all the relevant documentary exhibits into the War Room in whatever electronic format they are in. As and when required, affidavits can be prepared and the documentary exhibits would then be filed into the Courts' Case File. Concomitantly, an identical copy will be deposited in the Lawyers' Case File.
- 8.2.3 The technical benefits of the template-based approach to filing are described in greater detail at paragraph 32 below.

8.3 *Service of documents between law firms*

- 8.3.1 The service module under the current EFS has been found to be very useful. It should therefore be maintained and improved upon under the ELS. Electronic service should be competitively priced to encourage wider use.
- 8.3.2 Suggested key improvements to the service module include:
 - (a) Adding a 'one-click' file and serve feature;
 - (b) Allowing the law firm to select a date and time for deferred service; and
 - (c) Where the document was served manually, allowing the date and time of service to be recorded subsequently.
- 8.3.3 The ELS communications conduit can also aim to replace the facsimile machine to allow law firms to use e-mail as a means of communication for matters within the case. This will enable all correspondence to be stored within, and be accessible from, the ELS (in this regard, see paragraph 16 below).
- 8.3.4 With the advent of the EDRs, correspondence between the lawyer and his client can be stored in the respective War

Rooms while communication with the court can be stored in the Lawyers' Case File (with the lawyer granting access to the client to see the court-lawyer correspondence as and when the need arises).

8.4 *Court calendaring*

8.4.1 After service, the ELS' calendaring function can automatically generate a schedule of dates for the completion of key steps in the litigation process according to the courts' timelines for case disposal. For example, deadlines for pleadings, list of documents, affidavits, expected Pre-Trial Conference dates, *etc.*, can be automatically generated from the ELS. The timelines for each case can be determined by:

- (a) The Rules of Court;
- (b) The courts' disposal timelines; and
- (c) The parties themselves, where they agree to expedite the matter within a time frame shorter than that prescribed in the Rules and by the courts.

8.4.2 When a hearing date is required for an interlocutory application, the ELS' calendaring function will allow the law firm to pick the hearing date within a specified range of hearing dates pre-determined by the Courts. This will re-introduce flexibility into the process of obtaining hearing dates from the courts.

8.4.3 Since the ELS' calendar displays hearing dates and deadlines, checking the ELS calendar will become one of the standard activities for a lawyer in his office. In order to encourage greater use of the ELS' calendar by law firms, it will be useful to allow greater flexibility by providing the following views of calendaring information:

- (a) Calendar for the whole law firm;
- (b) Calendar for a pre-determined litigation workgroup within the law firm;
- (c) Calendar for an individual lawyer; and
- (d) Calendar for an individual matter.

8.4.4 The ELS' calendaring information should be capable of being downloaded into, or uploaded from, the law firm's practice management system. The use of information technology can be further enhanced if the information from the ELS' calendaring system can be synchronised with the lawyers' personal digital assistants (PDAs).

9 To each his own

9.1 While the preponderance of the features described above are useful for lawyers and their clients, the Committee is mindful that the ELS must also cater for situations where filing clerks need to upload documents in large numbers.

9.2 Batch filing

9.2.1 For law firms with a high volume of cases, the ELS should allow submissions to be prepared off-line (or batched) and transmitted together when there is lower flow of traffic on the information highway. As batch filing is aimed at situations where a law firm has many documents to be filed at any one time, it would be more efficient for a law firm to prepare the documents for filing in batches. The time that is presently spent on waiting for the documents to be filed can be put to better use. In this way, the various 'front-end systems' can be customised according to the law firm's internal workflows and needs.

9.2.2 Batch filing should have the following capabilities:

- (a) Off-line preparation;
- (b) Submissions cannot be limited to only one matter;
- (c) The data uploaded will be in a generic format that is open and available.

9.2.3 One concern about batch filing is that there may be a time lag between the time of filing and the time of notification that a certain document has been filed, and possibly other delays arising from filing huge volumes of documents or documents which are large in size. Such concerns will be addressed during the implementation of the ELS.

9.2.4 One possible alternative to batch filing is for the ELS to accommodate the filing of CD-ROMs with the service bureaux. This additional option would serve to retain the current practice of the service bureaux accepting CD-ROMs and at the same time, it would be in line with the principle that the ELS seeks to maximise options for all its users. There could be an administrative charge imposed for accepting CD-ROMs.

9.3 *The litigant-in-person*

9.3.1 For litigants-in-person, the ELS should allow filing of paper documents. The current service bureaux can serve the needs of the litigants-in-person (by providing services at a reasonable fee).

9.3.2 The service bureaux may even provide a filing service for smaller law firms if they do not have ELS capability.

Case Management for the Courts

10 Docket system

10.1 Overview

10.1.1 There are proposals for the use of a docket system for the management of cases in the courts. The docket system entails one judge or judicial officer dealing with the case from its commencement to its conclusion, *i.e.*, individual case management system. In line with the proposed use of the docket system, there have been suggestions that lawyers be able to bid for court-allocated slots of hearing time for certain judges or judicial officers to hear their cases.

10.1.2 The docket system instils certainty in the pattern of judicial decision making. It also saves judicial resources to the extent that it cuts down the need for a judge or judicial officer to sieve through the file afresh each time it is assigned to a new person. However, it is acknowledged that the docket system has various drawbacks. It can be a constraint on judicial resources because hearing days would be fixed, and judges and judicial officers may not be able to share the workload of their

colleagues should the need arise. In this manner, it could potentially compromise the courts' target disposal rates for the cases.

10.2 *Supreme Court*

10.2.1 A selective docket system has been suggested for the Supreme Court for complex cases. It will have the following features:

- (a) All interlocutory applications for complex cases filed after the case has been set down (about eight weeks before the first day of trial) will be fixed before the trial judge;
- (b) Complexity is measured by the length of the trial. Trials on specialist matters – for example, admiralty, intellectual property and arbitration – exceeding 10 days will be classified as complex. For other matters, only trials of 15 days or more will be considered complex; and
- (c) Cases will usually be set down about 8 weeks before trial.

10.3 *Subordinate Courts*

10.3.1 A selective docket system has been suggested for the Subordinate Courts for complex commercial cases. It will have the following features:

- (a) All interlocutory applications for such complex commercial cases filed after the Defence and before set-down will be fixed before specific Deputy Registrars who will personally manage the cases. All Registrar's Appeals arising therefrom will be heard before specific Registrar's Appeal judges;
- (b) Upon set down, all matters relating to such complex commercial cases will be fixed before specific trial judges; and
- (c) Complex commercial cases comprise of, *inter alia*, cases involving banking, corporate finance, company law, intellectual property, securities or equity and trust issues or matters.

11 **Calendaring**

11.1 Automated fixing of cases by the courts

11.1.1 Currently, EFS allows the courts' case management timelines to be set such that hearing dates can be fixed automatically (in this regard, refer to paragraph 8.4 above). However, the fixing of cases has been done manually on many occasions due to the lack of prior information on the availability of judges and judicial officers. As such, the Committee recommends that the availability of the judges and judicial officers should be automatically integrated with the courts' case management timelines under the ELS. This will in turn result in more efficient case management.

11.1.2 As to whether the fixing of hearings should be fully automated, it has been suggested that a certain degree of human intervention is still necessary. However, the system should continue to provide for the automatic fixing of hearing dates with the liberty to make amendments, or to change the fixtures when necessary.

11.1.3 For the purpose of efficient case management, information can be captured so that the system is able to automatically generate pre-trial conference (PTC) notices with administrative directions being given for parties to comply. In the event of a default or upon the happening of certain events, the system should automatically fix PTC notices for hearing. The use of this function can be restricted to certain types of cases if the courts so choose to restrict the same.

11.1.4 The automated fixing of cases will be subject to the policy consideration of the courts.

11.2 Selection of trial dates by the parties

11.2.1 Parties should generally be given the autonomy to choose the appropriate trial dates for their cases, as long as the trial dates chosen are within a prescribed time window provided by the courts for case disposal and in so far as they are practicable; for example, 12 months from issuance of writ (Supreme Court) and 1 month from the set down date (Subordinate Courts). The selection of trial dates will be on a first-come-first-serve basis

and the courts retain the final discretion to vary the system for allocation of trial dates or shift trial dates due to exigencies.

11.2.2 The Committee recommends that parties be allowed to choose their trial dates anytime before the summons for directions (SFD) are heard where trial dates are given. Once the dates are picked, the courts' timelines will be tailored to suit the selected dates.

(a) For the Supreme Court, if no dates are picked by the time SFD is heard, the court will give the trial dates.

(b) For the Subordinate Courts, if no trial dates are picked when parties set down a case, then the court will give the trial dates.

11.2.3 This proposal gives the parties greater autonomy in managing their cases and the corresponding timelines, while keeping in line with the policy framework of the courts.

11.3 Alerts

11.3.1 During the Colloquium, it was proposed that lawyers be given personal alerts as to upcoming events, for example, PTC and hearing dates, within a certain period of time. The personal alerts could be effected by way of e-mail, short message service (SMS) or their equivalent, subject to the available technology.

12 Dispensation of attendance

12.1 The Committee suggests that the attendance of the solicitors for the following matters be dispensed with, by default, in the absence of contrary directions from the court:

(a) All *ex parte* duty matters;

(b) All *inter partes* applications made with the consent of both parties, except for applications for adjournments and extension of time; and

(c) Contested *inter partes* hearings that do not exceed ten minutes; such hearings can be conducted through video conferencing or videophone at the Supreme Court.

13 Trend analysis

- 13.1 The analysis of statistical data is an important feature in any system and the ELS is no exception. The ELS should be able to collate information in an efficient manner to enable subsequent analysis to spot trends, and to better forecast and plan for the future. Since the EFS already collates statistical information, the ELS should be able to understand and process existing data from the EFS.

14 Attestation

- 14.1 The current Judicial Commissioner For Oaths (JCFO) module under EFS requires the deponent to file the document from the law firm's front-end system or the service bureaux. The deponent then has to go before the JCFO at the courts for attestation electronically. The document is then returned to the law firm's front-end system or the service bureaux for the deponent to file *via* EFS.
- 14.2 It would be faster and easier to attest to the hard copy document either before a Commissioner For Oaths (CFO) or a JCFO before scanning and filing it *via* EFS. Therefore, the Committee proposes that the current practice should be modified.
- 14.3 The Committee proposes the following modifications:
- 14.3.1 Represented parties need not file attested documents in their entirety. Such parties only need to file the text of the document attested. Lawyers are to ensure that the documents are properly attested to and the original attested document can be produced for inspection between parties where there is a dispute over attestation.
- 14.3.2 Litigants-in-person form the minority. Currently, they attend at the service bureau for filing after attestation and the service bureau scans these documents when filing *via* EFS. This practice can continue under the ELS. In any case, such litigants-in-person do not provide documents in an electronic form for filing.

15 Courts' Case File

- 15.1 Under the ELS, the Courts' Case File forms part of the EDRs. (See paragraph 6.4 above on EDRs.)
- 15.2 The question of storage of documents relates broadly to three areas:
- (a) Exhibits in Affidavits;
 - (b) Bundle of Documents filed upon setting down; and
 - (c) Bundle of Authorities.
- 15.3 The Committee recommends that the following guiding principles be adhered to when building the Courts' Case File:
- (a) Repeated filing of exhibits in affidavits should be avoided;
 - (b) Exhibits in affidavits should be easily cross-referenced with the main body of the text;
 - (c) However, the cross-referencing of the documents should not be achieved with disproportionate effort (*i.e.* too much time and effort should not be spent hyperlinking the documents – the process should be as seamless as possible to the user); and
 - (d) The case file should contain all documents that are presented before the court.
- 15.4 *Integration of exhibits with the text of affidavits of evidence-in-chief*
- 15.4.1 Since the exhibits in affidavits will most likely be documents that have been stored in the War Rooms, these exhibits need not be re-filed. Those documents that need to be referred to in the affidavits should be properly hyperlinked to the body of the affidavit (which is filed) in such a way that a user can easily navigate between the exhibit and the affidavit seamlessly.
- 15.4.2 However, under this model, it would be less convenient for the judges or judicial officers to obtain a hard copy of the complete affidavit. They would then have to download the relevant exhibits and print them out separately. This inconvenience is very real given that the general feedback from the judges and judicial officers (during the EFS Review) has been that reading voluminous documents off the computer screens can be a strain on the eyes. In that light, the ELS should provide a

feature which allows the judges and judicial officers to download all the exhibits easily and be able to print them out, if the need arises. Further, it is envisaged that the solution, or at least an acceptable solution, to the problem would have to lie in technological advances, *i.e.* the availability of large sized high-resolution screens.

15.4.3 It has been proposed that the exhibits to the affidavits need not be filed in court so as to reduce storage space. The Committee takes the view that this approach would be impractical. Depending on how the affidavit has been drafted, it can end up rather meaningless without its exhibits. For example, the affidavit may refer to various clauses in the contract without spelling them out in full. A user would not understand the affidavit without reference to the relevant exhibit. The Committee's view is that court records should be complete. Anyone who inspects a court file should know exactly what evidence was presented before the court. This goes towards the transparency of the court proceedings.

15.5 *Bundle of documents: Setting Down and Trial Bundles*

15.5.1 As for the bundle of documents filed upon setting down (under Order 34, rule 3 of the Rules of Court), these usually comprise documents already available in the War Rooms. The ELS should ease the preparation of the set-down bundle and allow the seamless filing of the bundle from the War Rooms into the Court's Case File.

15.5.2 While the ultimate intention is to do away with printing of the trial bundle (filed before trial under Order 34, rule 3A of the Rules of Court), it is recognised that there are lawyers who may find it inefficient to conduct the trial in an entirely paperless manner. In such instances, the Committee recommends that hard copies may be filed and only where all parties concerned in a trial are comfortable with a fully electronic hearing should the court order that no hard copies be filed. The electronic trial bundle can be filed *via* the EDRs while the hard copy can be filed for easy reference during trial and disposed of after the appeal.

15.6 *Bundle of Authorities*

- 15.6.1 While most law reports and statutes are available online, the nature of the Internet is such that the uniform resource locator can and does change from time to time. This means that any link to the documents could be temporal. If any reference needs to be made to them, the ELS should cater for:
- (a) An Index of Authorities to be filed electronically; and
 - (b) The law reports of the cases and the text of the statutes to be filed electronically.

16 Communication between the courts and lawyers

- 16.1 Currently, all correspondence to the courts on EFS-related matters must be sent through the EFS fax server or filed through the EFS. To facilitate communication between the courts and lawyers, the system should be able to accept correspondence sent through e-mail and index the same onto the case file under the ELS. Although an e-mail is used for such correspondence, the correspondence has to remain formal. As such, the Committee proposes that Practice Directions should be published by the courts to set out the necessary guidelines for the format and tone of these e-mails.
- 16.2 Another issue for consideration is the viability of allowing direct correspondence between lawyers and a judge or judicial officer who has been assigned to hear a case or application. Under the current EFS, the registries route lawyers' correspondence to the judge's or judicial officer's in-tray. However, this may not be the most expeditious method of informing the judge or judicial officer of sudden and new developments in a case, especially if the judge or judicial officer fails to notice the routed correspondence in the in-tray.
- 16.3 This is a pertinent consideration for cases with last-minute changes in status or in the parties' positions *etc.* For example, if a settlement is successfully concluded just before the hearing of the case, the lawyers should ideally be able to apprise the judge or judicial officer of such developments. With prior notice of the latest developments in the case, the judge or judicial officer will not expend unnecessary time and effort in perusing the case file before the hearing. The promptness of the notice given to the judge or judicial officer through direct correspondence will surely be more efficacious than through notice by a third party *i.e.* the registry staff.

- 16.4 At the same time, there is a need to prevent judges and judicial officers from being deluged with irrelevant correspondence from lawyers. The extent to which direct correspondence is to be allowed, if at all, is a decision that can only be made with great circumspection. It is imperative that a balance be struck between prompt notification of events and the additional time spent by a judge or judicial officer in sifting through correspondence.

Electronic Hearings

17 Hearings

- 17.1 The implementation of technology in the court room should be carried out with the following objectives in mind:

17.1.1 The court room is not merely a place where a lawyer presents his prepared case, but is also a place where he is constantly refining his case as the hearing proceeds. As such, technology should equip the lawyer with the necessary tools for the refinement of his case in court.

17.1.2 As the court room plays host to lawyers with differing approaches to the conduct of their cases, the technology implemented in the court room should cater to the individual preferences and styles of the lawyers. Technology should assist lawyers in the conduct of their cases and not hinder them.

17.1.3 Technology should also assist judges and judicial officers in the decision-making process. This will facilitate the more efficient hearing of cases, which will in turn benefit the lawyers in the presentation of their case before the court.

18 The court room as the stage for presentations

- 18.1 The Committee recognises that an important aspect of a lawyer's work is the presentation of his client's case in court, both at the trial and on appeal. It follows that a lawyer has to make the necessary preparations in order to be effective in court. As his preparation for the case will invariably be carried out in different places, for example, in his office or at his home, all the relevant materials that he has

worked on for the preparation of the case should be made available to him in court. At the same time, the system should allow him the flexibility of refining the preparation for his case as the hearing progresses in court.

- 18.2 The Committee also recognises that a lawyer needs to be comfortable with the technological tools which he uses to prepare and present his case in court. After all, a lawyer's preparation in his office or at home will become futile if he is unfamiliar with the tools used to present his case in court.
- 18.3 In this regard, the particular advocacy style of a lawyer may influence his choice of presentation tools. On one hand, a lawyer who is more adept in the use of technology may prefer presentation tools with more sophisticated features. A set of specialised litigation support tools may be utilised where voluminous documents are required in a particular case.
- 18.4 On the other hand, another lawyer may prefer the use of more rudimentary presentation tools or software while placing greater emphasis on his advocacy skills.
- 18.5 These points give rise to the following implications for implementation of technology in the court room:
 - 18.5.1 First, the IT infrastructure in the court room should be open, in that any equipment or software which a lawyer decides to use in the court room should be easily connected to the court's equipment. This will afford lawyers a wider choice in selecting the tools with which to practice their craft.
 - 18.5.2 Second, the court room should be connected to the Internet. During the hearing, the lawyer will then be able to access his preparation and the tools which are available on his firm's corporate intranet or on any other similar portal. Seen in the context of the EDRs discussed above, this also means that a lawyer will be able to access the relevant War Rooms and the Lawyers' Case File whilst in court.

19 The physical IT landscape in the court room

19.1 While the concept of a paperless court room is a forward-looking step in the use of technology, it must be recognised that this concept may be more fiction than reality, at least in the medium term. As such, the concept of a 'paper-less' (as in the use of less paper) court room is probably more realistic. In the 'paper-less' court room, the use of paper will be kept to a minimum as the use of technology becomes more widespread. The physical landscape will therefore be one where paper and technology co-exist for the benefit of the trial or appellate process. Where it is more efficient to do so, paper will continue to be used. Where it is more convenient to do so, technology will be adopted. The objective is to harness technology to facilitate the forensic process, with the emphasis on facilitation and not technology. Accordingly, this roadmap envisages that the physical IT landscape under the ELS will be such that files, bundles, computers and electronic presentation tools co-exist symbiotically; until such time as technology reaches the stage where the process can truly be paperless, and users are comfortable doing so.

20 During the hearing

20.1 When the hearing is being conducted, three sets of processes are going on:

20.1.1 First, the lawyer needs to present his case, and in doing so, he needs to retrieve documents to which he needs to refer. These documents include those which he has prepared, as well as the documents which may be unexpectedly needed during the hearing. The technology that is to be implemented will have to accommodate the need for the retrieval of documents in both scenarios.

20.1.2 Second, during the hearing, the lawyer and his assistants may need to communicate with one another, and possibly with their colleagues back in the office. They may also require access to the firm's corporate intranet or other paid resources available from the Internet. Instead of passing written notes to one another, it may be beneficial to set in place an instant messaging system. This will enable the lawyer and his assistants to communicate during the hearing, and to

communicate with their colleagues back in the office. The lawyer's assistants will then be able to locate a document that has suddenly become relevant or conduct research on the spot, in order to supplement the arguments made at the hearing. This underlines the fact that advocacy is a fluid and dynamic process.

- 20.1.3 Third, the judge or judicial officer needs to make notes of the evidence (quite apart from the official recording of the proceedings). There will thus be a need for a hearing tool which will allow him to make references to electronic evidence and to make notes. He will need to associate the notes to the evidence where necessary. This tool should continue to be available as he reviews the evidence at the end of each day or at the end of the trial. The judge's or judicial officer's tool should therefore be capable of pulling together transcripts of evidence, electronic evidence, the judge's or judicial officer's personal notes, and case materials like pleadings and submissions.
- 20.1.4 Much of the current lack of speed in the trial process is due to the need for the judge to make a written record of witnesses' testimonies, which becomes the official record of the proceedings. The widespread availability of audio recording should be tapped upon, so as to ease this burden of manually recording the proceedings. This paper envisages the future official record of the proceedings to be by way of an audio recording, with a transcript made available upon payment of a fee where circumstances require; for example, when an appeal is filed. The provision of real-time transcription should also be available to parties who make such requests and who are prepared to bear the additional costs. Otherwise, transcripts can be prepared with a time lag of a few hours to a few days, depending on the urgency and costs.
- 20.1.5 Annotations made by witnesses on both physical and electronic documents should be captured and stored electronically as part of the court record. If the document was electronic to begin with, the annotations can be made electronically and thereafter stored in the Courts' Case File. Where the document is in hardcopy, the courts should have

the equipment to capture an electronic facsimile and to store that in the Courts' Case File.

20.2 *Chamber hearings*

20.2.1 The Committee recommends that the current use of video-conferencing for routine chamber applications should be encouraged. The Committee proposes that there should be a continual search for better technology with improved video and audio quality.

Part II: Corollary Considerations

Reviewing the Litigation Process

21 Overview

21.1 The aim of reviewing the rules governing the litigation process is two-fold:

21.1.1 In Part I of this Paper, the desired functionalities in the ELS were described with a view to implement technology in a manner that will benefit all stakeholders. In order to achieve these functionalities, it may be necessary to review the rules governing the litigation process. For example, recommendations relating to calendaring functionalities in paragraph 11 above may require a review of the rules governing how lawyers get dates for summonses-in-chambers and how pre-trial conferences are conducted.

21.1.2 In most sectors, the successful implementation of IT systems has typically been preceded by an exercise in re-engineering the affected work processes. This allows the work processes to be rationalised and re-designed, if necessary, to harness the benefits of IT more fully. The Committee is of the view that a similar exercise relating to the rules governing the litigation process may be necessary in order to realise efficiencies in the litigation process. For example, with the introduction of template-based filing, some documents such as the Memoranda of Appearance and Service, may be wholly replaced by electronic templates; in the process, the number and types of forms may need to be streamlined. Further, the modes of commencement may similarly be rationalised.

21.2 The review of the rules governing the litigation process has to take place in the following areas:

- (a) The Rules of Court;
- (b) Practice Directions; and
- (c) Practices at the registries of the Supreme Court and the Subordinate Courts.

22 Reviewing the Rules of Court and Practice Directions

22.1 Template-based filing

22.1.1 The Committee recommends one fundamental change in approach under the ELS. There should be a paradigm shift from the filing of documents to the filing of information instead.

22.1.2 In the ELS, it is envisaged that text-based information will be typed into an electronic template (or form) and the information will be transmitted electronically over the Internet to the courts. The template will, as far as possible, resemble the paper-based form that lawyers are familiar with. The information will then be stored electronically with the courts and this will form the official record. When required, a paper document can be produced by the ELS. For example, personal service will entail a set of paper documents. The paper document thus produced will resemble the traditional court form.

22.1.3 It is further envisaged that pleadings and documents produced and relied upon by lawyers during the course of litigation will be prepared, filed and stored in this manner. Documentary exhibits provided by clients and witnesses will be converted into an electronic form and submitted as separate electronic files.

22.1.4 To cater for this radical change, the Rules of Court will have to be reviewed to ensure that it is sufficiently technology-neutral.

22.2 Some steps in the litigation process may no longer be necessary

22.2.1 In order to support the recommendations described in this paper, it may be necessary to identify those steps in the litigation process that may be consequently affected. To this

end, the relevant Rules and Practice Directions may have to be amended.

22.2.2 In order to derive further benefits from the template-based filing, unnecessary information (or documents) that is not required for interlocutory hearings or at trial, should be done away with. Information that concerns matters between the lawyers need not be filed; for example, lists of documents, interrogatories and notices to produce. They need be filed only if a dispute arises and a hearing of the dispute is required.

23 Homogenising the practices of the registries of the Supreme Court and the Subordinate Courts

23.1 Apart from the review of the Rules and Practice Directions, there is also a call for the streamlining of practices between the registries of the Supreme Court and the Subordinate Courts. In particular, the filing practices of the courts should be streamlined as far as possible so that lawyers or their court clerks will not be confused when they attempt to file documents in either court.

23.2 However, the Committee finds that the divergent administrative practices of the registries in respect of *hearings* do not need to be homogenised. The Committee recognises that the divergent practices in this respect are practical measures undertaken by the registries to deal with the differing caseloads faced by the two courts.

Costs and Business Models

24 Overview

24.1 The determination of project costs cannot be done in isolation as a mathematical exercise for the following three reasons:

24.1.1 First, costs are a necessary function of the business model that will be eventually adopted for the ELS. This will in turn determine the costs to be borne by the stakeholders.

24.1.2 Second, costs will be intertwined with the technology architecture employed.

24.1.3 Third, the issue of costs can only be meaningfully discussed in the context of the value added to all stakeholders with the advent of the ELS.

25 Business models

25.1 The key factors differentiating the various business models are:

- (a) Who finances the capital outlay;
- (b) Who finances the operational costs; and
- (c) Who fronts the entire ELS project (fronting strategy).

25.2 *Capital outlay financing*

25.2.1 The capital amount required for the ELS can be financed in the following ways:

- (a) Entirely by the Government;
- (b) Entirely by the private service provider; or
- (c) Jointly by the Government and the private entity

25.3 *Complete Government financing*

25.3.1 Since documents for civil matters will have to be filed through the ELS on a *mandatory basis* (as is the current practice for the EFS), it can be argued that the ELS will be an essential part of the infrastructure that enables any civil litigant's access to justice in the courts. Given that access to justice is a public good, the Committee recognises the compelling argument that the capital outlay for developing a system to facilitate that access should be borne by the Government while the operating costs should be recovered from litigants who bring their matters to court.

25.3.2 However, for reasons canvassed at paragraph 25.5 below, the Committee acknowledges that, though ideal, complete Government financing may not be realistic.

25.4 *Complete private sector financing*

25.4.1 It is possible that the private sector may fund the entire project capital to develop the ELS if it is able to forecast sufficient

returns from the project. In fact, there have been such precedents overseas³. It is conceivable that even for such a business model, the Government may nevertheless retain a controlling stake in the project in order to regulate the costs to the front-end users.

25.4.2 While this may be a possible option, such a model may be difficult to operate due to the competing interests between the Government in regulating costs and the need for its private sector partners to maximise returns on their investments. Another reason that militates against complete private sector financing is that the mandatory nature of electronic filing will tend towards creating a private sector monopoly in this function, which may not be desirable.

25.5 *Joint financing*

25.5.1 The present business model (where the capital amount for the present EFS has been jointly financed by the Government and a private sector service provider) has been operational for the past 5 years. This attests to the fact that joint capital investment by both the private sector and the Government can serve as a suitable and feasible arrangement for funding the ELS' business model.

25.5.2 By the time the ELS is commissioned and comes into operation in 2007-2008, the current EFS project would have been operational for nearly 7 years. Further, the ELS will not be a completely new system but it will probably be an enhanced version of the current EFS. It may then be difficult to justify complete Government investment in an area where private participation has worked successfully in the past, and hence, would not be found wanting in future. At the same time, it would be beneficial if the ELS is bundled as a project together with LawNet as a one-stop shop for all e-services for litigation lawyers. The bundling of LawNet and the ELS together will also make the package more commercially viable for the private sector.

³ See for example, HK ESDLife at www.esd.gov.hk which is a portal for the provision of both public and personal services in Hong Kong *via* an on-line electronic platform. ESD stands for 'Electronic

25.5.3 Taking into account the aforementioned considerations, the Committee recommends a hybrid arrangement, whereby the Government will fund the back-end system for the courts and a basic front-end system for the lawyers – necessary for mandatory electronic filing – to be operated by LawNet, while allowing a private sector service provider to provide a more sophisticated front-end system with case management features.

26 Operational costs financing

26.1 The proposal envisages a basic front-end system for the lawyers operated by LawNet and possibly other more sophisticated front-end systems operated by private sector service providers. As far as the front-end systems operated by the private sector are concerned, the service providers will have to find their own viable business model. With regards to the basic front-end system operated by LawNet, the following financing options exist:

- (a) The Government pays LawNet a fixed amount regardless of transaction volume plus a variable amount per transaction;
- (b) LawNet receives only a variable amount per transaction; or
- (c) A more radical system where fees are collected at stages of the litigation process and not based upon transaction.

26.2 Given that filing is mandatory under the current EFS, it is natural that the transaction volume of EFS filings over the past 2 years has increased. Meanwhile, the number of EFS-ready firms continues to grow. In light of this situation, the Committee recommends the adoption of Option (b). After all, it is not unreasonable for users to pay for the operational costs of the ELS, as in the case of the Mass Rapid Transit (MRT) System.

26.3 The Committee is of the view that the more forward-looking approach in option (c) merits serious consideration. A case-based charging system could conceivably include a package of features in the initial fee, for example, the use of War Rooms leading up to a certain stage in the litigation process. Thereafter, additional fees will be levied as the matter progresses into more advanced stages of the litigation life-

Service Delivery' Scheme. The vendor recoups its capital outlay from advertisements and other

cycle. This approach may afford greater flexibility to package features that are useful at different stages of the litigation process. It would be a marked departure from the traditional transaction and volume-based charging model.

27 Fronting strategy

27.1 The ELS can either be positioned as a Government project or as a private initiative. Since the target market for subscription to the ELS will essentially be the law firms, the focus of the fronting exercise should be the value added service component of the ELS. In the current EFS, the private service provider positions and markets the services without Government intervention. The Committee recommends that this arrangement remain in place for two reasons: first, it provides the Government with the flexibility to replace one service provider with another if the former's service quality is found wanting; and second, it affords the Government the flexibility to engage multiple service providers if it becomes necessary to do so.

28 More than one private sector service provider

28.1 The Committee recognises that one of the best arbiters of costs is competition. In this regard, whether the market is capable of sustaining two private sector providers for the ELS is not a decision for the Government to make but should be market-tested. Nevertheless, it will be ideal if the Government creates an environment that is conducive for competition, while at the same time, ensuring that users' service standards are adequately met through service level agreements.

29 Costs and value

29.1 The challenge facing all executives today is to deliver business value amidst an environment of constrained resources. As such, the key focus when considering the issue of costs should not be seen purely in monetary terms, but should also be about the various stakeholders receiving value commensurate to the price they pay for the ELS.

value-added revenue-generating services.

- 29.2 The ELS must move beyond the segmented processes of filing, storage and viewing, to a seamless system, which enhances the entire litigation process such that all stakeholders, be it the Bench, the Bar, the public or the service provider, derive maximum value. Value can also be added by bundling it together with the other LawNet services like litigation searches and online legal research. It is only then that the various costs attributed to the ELS can be justified.

Open Technical Standards for Integration and Interoperability

30 The need for open technical standards

- 30.1 The need for integration and interoperability was a common refrain during discussions at the Colloquium and throughout this Paper. The concepts of integration and interoperability may be understood in the following manner:

30.1.1 The ELS is envisaged to be made up of various component IT systems, for example the EDRs, communications conduit, hearing module, *etc.* These component systems need to be *integrated* in order for the ELS to function seamlessly.

30.1.2 There is also an equally important need for *interoperability*, *viz.* the ability to exchange and use information. The need for interoperability arises in two aspects, namely, between:

- (a) the ELS and the IT systems of other Government departments to enable exchange of information, for example, during consolidated due diligence checks; and
- (b) the ELS and the IT systems of law firms, for example, exchanging information in the case information repository with law firms' corporate practice management systems.

31 Open technical standards

- 31.1 In order to enable the level of integration and interoperability described above, it is necessary that open technical standards be

adopted from the outset. Openness in technical standards, in this regard, has two facets:

31.1.1 *The ELS should adopt open technical standards where possible.* Hence, multiple file formats for text (for example, RTF, PDF, XML) and graphics (for example, TIFF, JPEG, PNG) should be used for documents; where databases are open for access, similar open standards should be adopted (for example, ODBC). A similar approach should also be taken for transmission protocols (for example, TCP/IP, SSL, HTTPS).

31.1.2 *Apart from adopting open standards, it is also desirable that the details of the adopted technical standards be published.* This would allow law firms to customise their internal systems to interoperate with the ELS. For example, practice management and document management systems may be customised to exchange information with the ELS' case information repository, calendar and EDRs.

31.2 The adoption and publication of open technical standards will also enable IT vendors to design solutions that can interoperate with the ELS. It will be desirable if the private sector can thus produce solutions that benefit the legal profession.

32 Filing of information

32.1 One of the recommendations of the EFS Review Committee was the shift in paradigm from the filing of documents to the filing of information. The Committee endorses such an approach.

32.2 The adoption of template-based filing in the front-end will permit the filing of pleadings and affidavits as text-based information. These pleadings and affidavits can then be logically associated (or linked) to exhibits. The exhibits can be filed as graphic images or as text-based documents where they are available in that format. The corollary of this *vis-à-vis* the EDRs is that text and exhibits will be stored separately. With this, it will be possible for subsequent documents to refer to exhibits or documents that have already been filed. For example, where an exhibit has already been filed and is subsequently referred to, it will be possible for the subsequent affidavit to merely point (or link) to the exhibit already sitting in the EDRs.

- 32.3 Reusing information in this manner will also bring about other benefits. Since documents that have already been filed can be referred to in subsequent documents, this will mean that the documents referred to need not be filed again, thereby reducing transmission traffic and costs. In the same vein, where the same exhibit is referred to in different documents during the course of the litigation, only one copy needs to be stored in the Courts' Case File (as opposed to multiple copies equivalent to the number of times the document is referred to). This reduces the storage space required by the courts.
- 32.4 Another benefit of this paradigm shift is that where lists and bundles of documents need to be compiled, this can be done electronically by composing an electronic document pointing (or linking) to all the documents that have already been filed.

33 Authentication and security

- 33.1 From the experience of implementing the EFS since 2000, it has become apparent that there is some divergence in the security technology in place (based on PKI infrastructure) and the existing practices in law firms: smartcards are frequently shared within the law firm. It may be desirable to revisit this issue of authentication in the ELS with the following considerations in mind:
- 33.1.1 There is a requirement for non-repudiation. This means that the courts need to know that when a document is purportedly received from a particular law firm, there is no means for the law firm to assert that it had not been filed with the court. The same requirement of non-repudiation is also needed for the service of documents by one law firm on another.
- 33.1.2 There is a requirement for authentication. This means that the recipient of a document needs to be assured that the contents of the document have not changed during the course of transmission, *viz.* that the document received is identical to the document sent.
- 33.1.3 The concept of issuing smartcards to individual lawyers that underpins the current EFS PKI infrastructure has not been borne out in practice. The preponderance of law firms hold a few smartcards that are shared and used in common for all documents filed by the firm. In designing the authentication

system of the ELS, it may be necessary to re-examine the current approach.

33.1.4 The facility for encryption of documents that is currently available in the EFS is under-utilised and feedback from users indicates that this facility may not be an important feature.

33.2 With the proposals for EDRs, the security requirements of the ELS will have to be sufficiently robust to ensure the privacy and integrity of the various EDRs. To this end:

- (a) Only clients and their solicitors should have access to their respective War Rooms;
- (b) While lawyers involved in the case have access to the Lawyers' Case File, the annotations that each may have prepared for hearings should be private and accessible only to the lawyers concerned; and
- (c) The Courts' Case File should be secure and the lawyers and their clients should not be privy to this.

33.3 *Single sign-on*

33.3.1 Another important consideration is the need to interoperate with multiple systems operated by other Government departments. There should be some kind of access rights management mechanism (for example, single sign-on) in order to help law firm users manage the various access codes required.

34 Standards setting

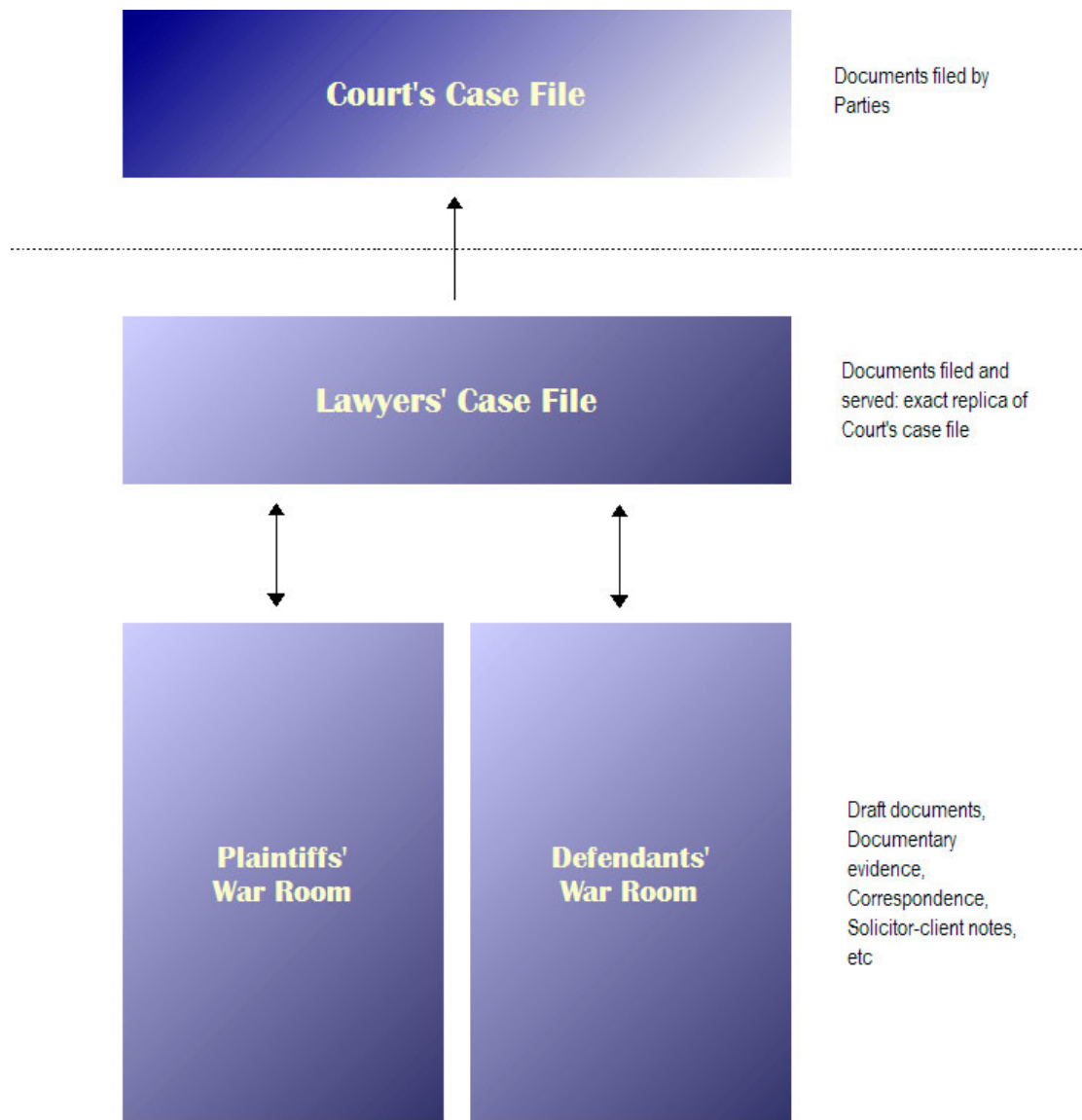
34.1 From the foregoing, it will be necessary to establish a body to oversee the technical standards adopted in the ELS. This body can be represented by members from the Bench, the Bar and the legal technology vendors. This body will provide a platform to discuss and set the technical standards that are necessary for the integration and interoperability envisaged in this paper. The LawNet Management Committee, with representations from the Judiciary, Attorney-General's Chambers, Law Society, Infocomm Development Authority of Singapore and Singapore Corporate Counsel Association, is well placed to perform this role.

35 Concluding remarks

- 35.1 This Roadmap Paper seeks to chart the course ahead for the implementation of technology in the litigation process in Singapore. It is envisioned that a process of public consultation will follow thereafter. Responses from the public consultation will be reviewed and adopted where appropriate.
- 35.2 The Committee hopes that the various stakeholders will come together and make a concerted effort to implement the ideas encapsulated in this Roadmap Paper. The Committee acknowledges that the implementation will require a gradual and cascading, rather than a 'waterfall', approach. This will reduce the resistance by users who may be less inclined towards the adoption of new technology. Consequently, it will ensure maximum buy-in by all the stakeholders.
- 35.3 This Roadmap Paper is but another step in the continuing process of evaluation and implementation of technology to enhance the litigation process in Singapore. It is the Committee's vision that the ideas excogitated in this Roadmap Paper will be realised as Singapore continues in her relentless pursuit to reinvent herself in today's information age so as to retain her competitive edge as a forerunner in the field of electronic litigation.

The EFS Review Implementation Committee
January 2005

Annex A: Electronic Data Rooms



**Appendix 1:
Members of the EFS Review
Implementation Committee &
Working Groups**

EFS Review Implementation Committee

Chairman

The Honourable Second Solicitor-General Lee Seiu Kin

Members

Mrs Koh Juat Jong, Registrar, Supreme Court

Richard Magnus, Senior District Judge

Ms Serene Wee, Director, Singapore Academy of Law

Foo Chee Hock, Deputy Registrar, Supreme Court

Lau Wing Yum, Registrar, Subordinate Courts

Toh Han Li, Senior Assistant Registrar, Supreme Court

Ms Cornie Ng Teng Teng, Deputy Registrar, Subordinate Courts

Yeong Zee Kin, Assistant Registrar, Supreme Court & Assistant Director,
Singapore Academy of Law

Jim Lim Kheng Huat, Partner, Shook Lin & Bok

Lim Seng Siew, Partner, Ong Tay & Partners

Andrew Chan Chee Yin, Partner, Allen & Gledhill

Thio Shen Yi, Executive Director, TSMP Law Corporation

David Lee Yeow Wee, Assistant Registrar, Supreme Court

Ms Ang Ching Pin, Justices' Law Clerk, Supreme Court

Working Group I

Terms of reference

Implementation of EFS fees reduction and preparation of the public report of the EFS review.

Chairman

Ms Serene Wee, Director, Singapore Academy of Law

Members

Foo Chee Hock, Acting Registrar, Supreme Court

Lau Wing Yum, Registrar Subordinate Courts

Toh Han Li, Senior Assistant Registrar, Supreme Court

James Leong, Deputy Registrar, Subordinate Courts

Vinod Coomaraswamy, Partner, Shook Lin & Bok

David Lee Yeow Wee, Justices' Law Clerk & Honorary Secretary, Singapore Academy of Law

Working Group I has been dissolved upon completion of its terms of reference.

Working Group II

Terms of reference

Implementation of immediate and medium-term process and technology solutions, and oversight of internal technical audits.

Chairman

Yeong Zee Kin, Assistant Registrar, Supreme Court & Assistant Director, Singapore Academy of Law

Members

Ms Cornie Ng Teng Teng, District Judge, Subordinate Courts

Ms Sharon Lim, District Judge, Subordinate Courts (member until 1 November 2004)

Andrew Chan Chee Yin, Partner, Messrs Allen & Gledhill

Rama Tiwari, Assistant Vice-President, DBS Bank Ltd

Goh Seow Hiong, Director Software Policy (Asia), Business Software Alliance

Ms Gladys Tay, Senior Executive IT Manager, Supreme Court (member until 1 April 2004)

Chee Chean Hwee, Senior Executive IT Manager, Supreme Court (member from 1 April 2004)

Ms Karen Wong, Information System Manager, Subordinate Courts

Lee Kah Moon, Vice-President Legal, CrimsonLogic Pte Ltd

Jason Chan Tai-Hui, Justices' Law Clerk & Honorary Secretary, Singapore Academy of Law (member until 1 January 2004)

Working Group III: Electronic Litigation

Terms of Reference

Preparation of primer for, organisation and conduct of the Electronic Litigation Colloquium;

Preparation of Electronic Litigation Roadmap Paper; and

Conduct of public consultation and formulation of final recommendations to the Honourable the Chief Justice.

Chairman

Foo Chee Hock, Deputy Registrar, Supreme Court

Members

Toh Han Li, Senior Assistant Registrar, Supreme Court

Lau Wing Yum, Registrar, Subordinate Courts

Ms Cornie Ng, Deputy Registrar, Subordinate Courts

Ms Chong Chin Chin, State Counsel, Attorney-General's Chambers

Ms Sharon Lim, District Judge, Subordinate Courts (member until 1 November 2004)

Yeong Zee Kin, Assistant Registrar, Supreme Court & Assistant Director, Singapore Academy of Law

David Lee, Assistant Registrar, Supreme Court & Honorary Secretary, Singapore Academy of Law

Ms Ang Ching Pin, Justices' Law Clerk, Supreme Court & Honorary Secretary, Singapore Academy of Law

Electronic Litigation Roadmap Paper

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**Appendix 2:
Participants of the
Electronic Litigation Colloquium**

No	Name of Participant	Organisation
1	Mr Michael Toh	Acepio Pte Ltd
2	Mr L Kuppanchetti	Alban Tay Mahtani & De Silva
3	Mr Tan Wee Meng	Allen & Gledhill
4	The Honourable Second Solicitor- General Lee Seiu Kin	Attorney-General's Chambers
5	Mr Charles Lim	Attorney-General's Chambers
6	Mr Tan Ken Hwee	Attorney-General's Chambers
7	Ms Chong Chin Chin	Attorney-General's Chambers
8	Ms Corrina Lim	Bizibody Technology Pte Ltd
9	Mr George Tan	Chan Tan LLC
10	Mr Roy Yeo	Chia Yeo Partnership
11	Mr Lee Kah Moon	CrimsonLogic Pte Ltd
12	Mr Damien Adams	Diskcovery
13	Mr Hri Kumar	Drew & Napier
14	Mr Rama Tiwari	Drew & Napier
15	Mr Tan Kwang Han	Ecquaria
16	Ms Wu Choy Peng	InfoComm Development Authority

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No	Name of Participant	Organisation
17	Mr Tan Eng Pheng	InfoComm Development Authority
18	Dr Chong Yoke Sin	National Computer Systems Pte Ltd
19	Mr Lim Seng Siew	Ong Tay & Partners
20	Mr Bryan Tan	Rajah & Tann
21	Mr Goh Seow Hiong	Rajah & Tann
22	Ms Roslina Baba	Ramdass & Wong
23	Ms Juthika Ramanathan	Registry of Companies & Businesses
24	Mr Jim Lim Kheng Huat	Shook Lin & Bok
25	Mr Vinodh Coomaraswamy	Shook Lin & Bok
26	Ms Serene Wee	Singapore Academy of Law
27	Mr Yeong Zee Kin	Singapore Academy of Law
28	Mr Lau Wing Yum	Subordinate Courts
29	Ms Cornie Ng Teng Teng	Subordinate Courts
30	Ms Daphne Hong	Subordinate Courts
31	Ms Sharon Lim	Subordinate Courts
32	Ms Karen Wong	Subordinate Courts
33	The Honourable Judicial Commissioner V K Rajah (as he then was)	Supreme Court
34	Mrs Koh Juat Jong	Supreme Court
35	Mr Foo Chee Hock	Supreme Court
36	Mr Toh Han Li	Supreme Court
37	Mr David Lee	Supreme Court

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No	Name of Participant	Organisation
38	Ms Ang Ching Pin	Supreme Court
39	Mr Santhanam	Supreme Court
40	Mr Chee Chean Wee	Supreme Court
41	Mr Thio Shen Yi	TSMP Law Corporation
42	Mr George Lim	Wee Tay & Lim
43	Mr Adrian Peh	Yeo-Leong & Peh LLC