

WB/CS/03

Evidence-Based Governance in the Electronic Age

Case Study

Legal and Judicial Records and Information Systems in Singapore

This case study has been prepared by the International Records Management Trust and does not reflect the views of the World Bank nor the Government of Singapore.



*A World Bank/International Records Management Trust
Partnership Project*

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INTRODUCTION

- 1 *Evidence-Based Governance in the Electronic Age* is a three-year project delivered in partnership between the World Bank and the International Records Management Trust. It involves coordinating a global network of institutions and organisations to facilitate the modernisation of information and records systems.
- 2 Records, and the information they contain, are a valuable asset that must be managed and protected. Records provide the essential evidence that a particular action or transaction took place or that a particular decision was made. Records support all business functions and are critical to the assessment of policies and programmes, and to the analysis of individual and organisational performance. Without reliable records, government cannot administer justice and cannot manage the state's resources, its revenue or its civil service. It cannot deliver services such as education and health care. Without accurate and reliable records, and effective systems to manage them, governments cannot be held accountable for their decisions and actions, and the rights and obligations of citizens and corporate bodies cannot be upheld.
- 3 New technologies provide great potential to improve services and efficiency, but the evidence base upon which governments depend must continue to be protected and preserved. For initiatives such as e-government and e-commerce to be successful, governments must have access to information that possesses certain crucial characteristics: the information must be available, accurate, relevant, complete, authoritative, authentic and secure.
- 4 The aim of the *Evidence-Based Governance* project is to make records management a cornerstone of the global development agenda. The challenge is to rebuild and modernise information and records management systems in parallel with complementary measures to improve the broader environment for public sector management. The project represents a major opportunity to integrate records management into global strategies for good governance, economic development and poverty reduction.
- 5 During the first phase of the project, studies were carried out within the World Bank and in a range of countries to explore the requirements for managing personnel, financial and judicial records in a hybrid, electronic/paper environment. This report is one of thirteen case studies that illustrate the issues involved. The studies have been supplemented by findings derived by a global discussion forum involving senior officials and records and archives professionals. The knowledge gathered through these means is providing the basis for the development of assessment tools to measure the quality of records and information systems in relation to clearly defined functional requirements and benchmarks. The project will develop tools for use in the three areas of study: personnel, financial and judicial records systems. Ultimately, the information gathered will also help to define the requirements for global capacity building for managing electronic records.
- 6 The case studies have been chosen to represent differences in geographic regions, administrative structures and resource environments. The management of legal and judicial records has been examined in Argentina, Ecuador, The Gambia, Singapore

and South Africa. These countries give a broad geographical spread and represent different degrees of development in financial reform and the use of electronic records.

Terms of Reference and Methodology

- 7 This report covers a visit to Singapore by Andrew Griffin and Kelly Mannix from 22 to 26 April 2002. Charles Holloway, senior partner with the law firm Eversheds of the United Kingdom, and Haruna Jaiteh, Principal Registrar of the High Court of The Gambia, also participated in the visit.
- 8 The purpose of the visit was to examine the improvements to records and information systems that are being undertaken by the Judiciary in Singapore. A secondary purpose was to test a prototype of an assessment tool for legal and judicial records and information systems. Findings from the case study are being used to develop the assessment tool. The assessment tool will be published separately from this report.
- 9 The case study represents a snapshot in time. The observations it contains were current as of April 2002. Since then, new developments and improvements have taken place on a regular basis and therefore the case study does not represent the situation at present. It is hoped that the findings in this report will highlight issues that will continue to arise in many other situations.

Acknowledgements

- 10 We are grateful to the officials of the Singapore court system and of the National Archives of Singapore for arranging the visit and so graciously giving of their time. For a complete list of people consulted see Appendix A.

EXECUTIVE SUMMARY

- 11 With high levels of education and computer literacy, Singapore has been able to achieve what many governments and organisations around the world strive for: to use technology effectively to streamline workflow and improve service delivery.
- 12 The Singapore legal system is based on English Common Law and established rules and procedures outlined in the Constitution, the Supreme Court of Judicature Act and the Subordinate Courts Act. The main institutions are the Supreme and Subordinate Courts, the Attorney General's Chambers, the Singapore Legal Service and the Ministry of Law. The case study focused on the processes and records management practices of the Supreme and Subordinate Courts. (paras 20 to 23)
- 13 The Court Registries handle the records of civil and criminal cases, writs of summons, probate taxation, bankruptcy, bailiff functions, summonses-in-chambers, powers of attorney, practising certifications and services, and court orders. While maintaining court records is the responsibility of the Registry, there is no professional records manager working within the courts. Rather, expertise is sought as required from the National Archives of Singapore. The administrative arm of the Judiciary is also

supported by Justice's Law Clerks who perform legal research for Judges and Judicial Commissioners at the request of the Chief Justice. There is a Chief Information Officer who oversees an Information Systems Manager, who in turn provides IT support, strategy and planning. (paras 24 to 27)

- 14 In 1990 the new Honourable Chief Justice Yong Pung How decreed a set of reforms that would transform Singapore's legal system into an example of efficiency and the use of technology. The main impetus behind the reforms was a case backlog at all levels of courts as well as a lack of incentive to perform efficiently. Waiting times for cases to go to trial was months or years. The reforms amended and simplified criminal and civil procedures, established night courts to reduce the case backlog, improved case management, introduced on-line legal information services, established a Technology Court and launched an electronic filing system (EFS). The case study looks at the EFS and technology courts as well as at the role of the National Archives in managing records. The EFS is a web-based application, accessible to judges, court clerks, registrars, lawyers and administrative staff, which integrates case management and court records. All civil case and court records are held electronically and electronic documents held in the EFS are the official court records. By 2001, over 80% of the law firms in Singapore were EFS subscribers. (paras 28 to 38)
- 15 The EFS screen has a template for document metadata, which is entered by a law firm filing a document, and a PDF document that bears the signature and seal. Metadata fields are controlled for consistency and accuracy by defined fields from which the user must select. (paras 39 to 44)
- 16 User acceptance of the EFS is high and the system is used widely. Bandwidth capacity and system processing are inevitable concerns, and there have been occasions when documents have been caught in a processing bottleneck and had to be filed manually to meet court deadlines. However, this situation is rare and is probably only a concern when filing very large documents. (paras 45 to 50)
- 17 Criminal proceedings are conducted in two technology courts. The technology courts make use of the EFS combined with video-conferencing, audio-visual displays of evidence and full digital audio recording. They use technology to assist lawyers in presenting their cases, to support witnesses in giving evidence and to improve the delivery of justice. They have increased the efficiency of court proceedings, for example by allowing witnesses to testify from remote locations. The success of an initial prototype led to the launch of a second technology court in 2001. (paras 51 to 54)
- 18 Records that were previously held in paper form are now created and stored electronically. A team has been established, consisting of a vendor and technical and court staff, to address the issue of long term preservation of paper and electronic court records. All court records are preserved on microfilm in the National Archives. While this solution has addressed severe space limitations, it is a resource-intensive process. Furthermore, while microform output works well for static compilations of electronic documents which will not change, it is not appropriate where there is an interactive element. Standards and guidelines for the creation, use and disposition of court records are available in government administrative manuals. (paras 55 to 65)

- 19 The National Archives of Singapore delivers an extensive range of archival functions as outlined by the National Heritage Act. Computerisation has presented new challenges for the long-term preservation of and access to records. Electronic records are very vulnerable to loss through human error and technological obsolescence. Moreover, they require thorough and consistent indexing and classification over time to enable retrieval. No additional resources have been provided to the National Archives to meet these challenges and there has been no increase in staffing for fifteen years. The National Archives has responded to these challenges, but without additional resources it will be difficult to continue to provide the quality of guidance that it has given for the management of paper records. (paras 66 to 79)

JUDICIAL SYSTEM AND INSTITUTIONS

Overview of Court Jurisdictions

- 20 The Singapore legal system is based on English Common Law and power is vested in the courts by Article 93 of the Constitution. An independent Judiciary is provided by Article 98 of the Constitution. There are established rules and procedures for the operation of the Singapore's judicial system outlined in the Constitution, the Supreme Court of Judicature Act and the Subordinate Courts Act.
- 21 The main institutions that comprise Singapore's legal system are the Attorney General's Chambers, the Ministry of Law and the Singapore Legal Service. Other legal institutions include the Corrupt Practices Investigation Bureau, the Law Faculty at the National University of Singapore, the International Arbitration Centre, the Singapore Academy of Law, the Law Society of Singapore and the Ministry of Home Affairs. The study visit focused on the processes and records management practices of the Supreme and Subordinate Courts.
- 22 Singapore's Judicial system features two tiers of courts: the Supreme and Subordinate Courts. Ninety-five per cent of all cases are initiated in the Lower Courts. The Supreme Court comprises the High Court and the Court of Appeal as outlined in the Supreme Court of Judicature Act. In 1994 the right to appeal to Privy Council was abolished making the Court of Appeal the highest court in Singapore.
- 23 The Subordinate Courts Act outlines the structure and responsibilities of all lower courts. The Subordinate Courts comprise forty district courts and twenty magistrates' courts, both civil and criminal, juvenile courts, coroner's court and small claims tribunals. See Appendix C for details of the jurisdiction of the Subordinate Courts.

Court Governance

- 24 The Chief Justice has authority over both levels of courts and delegates overall responsibility for the Subordinate Courts to the Senior District Judge. The Supreme and Subordinate courts each have a Registrar who is responsible for the registries and has custody of court records.

- 25 The Court Registries handle the records of civil and criminal cases, writs of summons, probate taxation, bankruptcy, bailiff functions, summonses-in-chambers, powers of attorney, practicing certifications and services, and court orders. The Registrar is assisted by a Deputy Registrar and Assistant Registrar who perform both administrative and judicial functions. While creation and maintenance of court records are the responsibility of the Registry, there is no professional records manager within the court registries. Rather, expertise is sought as required from the National Archives of Singapore.
- 26 The administrative arm of the Judiciary is also supported by Justice's Law Clerks who perform legal research for Judges and Judicial Commissioners at the request of the Chief Justice. There is a Chief Information Officer (CIO) who oversees an Information Systems Manager, who in turn provides IT support and contributes to strategy and planning. The CIO reports to the Senior District Judge of the Subordinate Courts. Both tiers of courts have a Corporate Services division which provides administrative support functions such as finance, human resources, research and statistics, office management, project management (including the Electronic Filing System) and corporate communications. Within the Corporate Services Division there are court clerks, stenographers and translators (who provide services in all four official languages, Chinese, Malay, Hindi and Tamil).
- 27 See Appendix C for a diagram of the structure of the top three levels of the Supreme and Subordinate Courts.

Judicial Reforms

- 28 In 1990 the new Honourable Chief Justice Yong Pung How decreed a set of reforms that would transform Singapore's legal system into a model of efficiency. The main impetus behind the reforms was a case backlog at all levels of courts as well as a lack of incentive to perform efficiently. Waiting times for cases to go to trial was months or years. The main reforms were to:
- amend and simplify criminal and civil procedures
 - establish night courts to reduce the case backlog
 - improve case management
 - introduce a legal database for information about courts and hearings
 - establish a technology court
 - launch an electronic filing system.
- 29 In addition to conquering the backlog of cases, technology became an enabler for the Judiciary to introduce new services not possible in the paper-based systems. Judges, court clerks, registry staff and lawyers experienced benefits such as removing the need to manually file court documents, faster access to court records via an extract service and faster processing times through the electronic service of documents.

ROLE OF TECHNOLOGY

- 30 Chief Justice Yong Hung Pow declared that ‘justice would be assisted not dominated by technology’. The ambitious judicial reform project harnessed technology to support the delivery of justice. The EFS is a web-based application, accessible to judges, court clerks, registrars, lawyers and administrative staff, that integrates case management and court records. Currently all civil cases and court records are held electronically. Implementing a system for criminal procedures requires further analysis in order to take account of the complexity of procedures and the needs of all stakeholders. However, criminal proceedings are currently conducted in two technology courts. The case study visit focused on the EFS and technology courts.

Case Management: The Electronic Filing System (EFS)

- 31 In March 1997, Phase 1.0 of the Electronic Filing System (EFS), an electronic case management system pilot, was launched for civil cases. The planning stages predated the World Wide Web, and thus the pilot was not web-enabled. The launch of Phase 1.2 in March 2000 expanded the system to include electronic document filing. Phase 2.0 was rolled out in July 2001 and was fully web-enabled to allow remote access for judges, lawyers, court clerks and registry staff. This system upgrade included a search engine, electronic extracts and e-service of filing. At each phase, user feedback was incorporated into the project to improve the EFS design, interface and functionality.
- 32 The EFS was developed by a vendor, Crimson Logic, at a cost of S\$29 million. Crimson Logic provided the technical expertise for the system architecture and development of the back end. The peer-to-peer system architecture uses FileNet to manage files and back end Oracle databases to manage users and court fees, and to extract information. Crimson Logic continues to provide a major role in the daily maintenance of the system and also provides both expertise and servers to enable the Judiciary to send, receive and store documents. The costs for the system will be recovered over a ten year period by charging fees for document filing and extractions.
- 33 The National Archives was not involved in drafting the functional requirements of the EFS or other technology applications supporting judicial functions. The nature of judicial records and the functions they support meet requirements for security, classification and access.
- 34 The user functions of the current EFS include electronic filing of court documents, receipt of court documents, searching for and tracking court cases and records, and processing court fees. Users can search for court documents by court case number, file reference number, type of case.
- 35 By 2001 over 80% of the law firms in Singapore (more than three hundred) were EFS subscribers. Each subscribing firm had to acquire the necessary hardware, software licensing and user IDs to participate. The Judiciary offered incentives for filing court documents electronically by offering a 15% fee discount. This incentive has now shifted to include a penalty on those firms that do not file electronically. There is a

service bureau available to provide document filling services for firms that are not subscribers, but manual filing is now penalised by higher filing and extraction fees.

- 36 System users are permitted access via the web interface after entering their unique user ID and confidential password. The system is role-based, limiting user access to cases and court records as prescribed by their permissions or privileges. The system is purely electronic, and users can access court documents via the web in PDF format. Documents that do not originate in electronic form are scanned at the time of filing by the filing party (lawyer or service bureau). Court documents can be accessed online during proceedings.
- 37 Electronic documents held in the EFS are the official court records. Wills are a notable exception: back-up copies are kept in paper form. Documents submitted as exhibits are scanned so that they can be accessed during proceedings. The originals are also kept independently of the EFS according to the Singapore Laws of Evidence.
- 38 Day-to-day EFS administration and user support is provided by the IT staff within the Corporate Services Directorate and by Crimson Logic. The applications are still under warranty with Crimson Logic, and thus the vendor continues to provide a crucial role for ongoing user support and system back-ups. There are multiple servers, both within the courts and with Crimson Logic, that speed up processing time and act as back ups. In-house servers are maintained by the National Computer System. Court records and documents are backed up daily and weekly.

Workflow for Filing of Court Documents

- 39 Documents (eg writs of summons) can be prepared in draft form and then entered in the EFS, where the user can check fees. Once entered, the document can be viewed in PDF format and checked. If the document is in paper format, it is scanned and stored as a PDF format. A user password is needed to file the document. The document's 'status' is indicated to show that it has been received by the court.
- 40 Searches can be made for individual documents by case number, document number, file reference number (lawyer's reference number) and by the names of judge, plaintiff, defendant and lawyers.
- 41 When a document is filed in court, a check is made to ensure that it is in order before the courts accepts it. Fees are then paid electronically. An acknowledgement is sent within five minutes of filing. Upon filing, the document is automatically issued a unique identifier, which is cross referenced with an automatically generated case file (if a file does not exist) and to the law firm's ID.
- 42 The EFS screen has a template for document metadata (content, context and format) on the left hand side and a PDF document on the right. Metadata on the left is entered by the law firm filing the document. Each document must have a document control number, the time of filing, the date and the case number. The case number is unique. Once entered, the court cannot amend the metadata. Metadata fields are controlled for consistency and accuracy by defined fields. For example the categories of filed documents must be selected via a drop down menu listing types of documents.

- 43 The PDF document bears the signature and seal. Annotations can be shown in blue, and all filed documents are time and date stamped. In addition, fields display a history to track filing and retrieval.
- 44 It is the intention to keep all court records and cases online for the duration of their active lifecycle. In the case of civil records, with the exception of wills, this period is for seven years past the judgement date. Court documents are retained in PDF format and stored in a jukebox that can store large volumes of digital records and keep them readily accessible. A committee is assessing policies and procedures relating to inactive electronic records.

Users and Training

- 45 User acceptance and promotion of the EFS began at the system design and development stage. A three-fold methodology was used to introduce the system, involving training, consultation and awareness raising. It was required for all judicial staff as well as external users in law firms. It was offered in three ways:
- one-on-one training with internal users such as judges, registry staff and court clerks.
 - seminar training for court staff, spread over a number of weeks
 - hands-on training of legal professionals. Almost one third of Singapore's legal profession participated in this training.
- 46 While the reforms were initiated from the top down, there was consultation with key user groups whose feedback was incorporated into the project and system design. This was considered crucial to the overall success of the EFS project. For example there were contributions from the Law Society's EFS Sub-Committee.
- 47 Interviews were conducted at the law firm of Khattar Wong, and there were few complaints about the system. The lawyers are encouraged to use the new system and the firm benefits because it can file documents on a twenty four hour basis. Documents are captured automatically in the system at the point of receipt and acceptance.
- 48 While the system claims to be 100% reliable, bandwidth capacity and system processing are inevitable concerns. There have been occasions when documents have been caught in a processing bottleneck and have had to be filed manually to meet court deadlines. However, this situation is very rare and is probably only a concern when filing very large documents. There have been instances where there have been difficulties with logging on to the system, but most of the time the system works smoothly.
- 49 The introduction of electronic filing has not necessarily reduced the amount of paper used by the law firms, nor has it demonstrated significant cost savings. E-mailing costs are S\$1 per page, and thus they can represent a large expense for firms regularly

filing large documents. As a result, in some cases it remains cheaper to pay the 15% surcharge and file the documents manually at the Service Bureau. Moreover, many staff working in law firms are still more comfortable with paper, and some lawyers feel that working with a paper document on the desk is preferable to scrolling through documents on a computer monitor. It will take time for users to adjust to the electronic environment.

- 50 There is a high level of security built into the EFS, including unique user IDs, passwords and documents transmittal through secure channels using VPN (Virtual Private Network) technology. There have been no complaints regarding the security and accessibility of court documents. No instances of lost documents have been reported. Overall the lawyers interviewed were satisfied with the EFS.

Technology Courts

- 51 First launched as a prototype in the Supreme Court in 1995, the technology courts harness the functionality of the EFS combined with video-conferencing, audio-visual displays of evidence and full digital audio recording. The intent was to utilise technology to assist lawyers in presenting their cases and to improve the delivery of justice. The technology courts are regarded as revolutionary. They have increased the efficiency of court proceedings, for example by allowing witnesses to testify from remote locations. The success of the prototype led to the launch of a second technology court in 2001.
- 52 Each desk in the court room has a power outlet and a monitor, with access to the EFS and to other Internet sites to allow counsels to access files on their laptops or in their offices during presentations. Each technology court has large video screens that project images from individual monitors to the entire court room. This makes it possible to display court documents held in the EFS or to project images as evidence. In addition, the technology courts provide a video 'visualiser', which is used to display paper documents on large screens to the entire courtroom. This system enables video marking, which is used by judges and lawyers to highlight specific sections of the document for attention.
- 53 Video conferencing capability allows witnesses to supply testimony from remote locations. This function has proved to be of great value in cases involving overseas parties, as well as for sensitive matters where the witness may not wish to face the defendant in person.
- 54 All court proceedings are recorded via a digital video recording system. The sessions can be recorded continuously for up to eight and half hours. This serves as the official record of court proceedings and is invaluable to the judge and presiding counsel if they need to consult the court record.

MANAGEMENT OF COURT RECORDS

- 55 By 1994, with over a million case files in storage, some dating as far back as 1946, the volume of paper exceeded the capacity of the storage spaces at Havelock Square Complex (683 square metres) and in a former ministry building (620 square metres).
- 56 In 1995 a joint committee, comprised of the Supreme and Subordinate Courts and the National Archives, was established to investigate the management of court case records. Administrative records were beyond the scope of the project. The terms of reference of the committee were to:
- determine the current legal position with respect to the disposition of court records
 - report on the present system of managing court records for the Supreme and Subordinate Courts
 - make recommendations to improve records management in the courts, specifically in relation to retention, storage and legislative requirements.
- 57 The joint committee reported that while the Judiciary is a public body, its records contain may contain sensitive content and hence they are not considered 'public' in the same sense as other government records. However, records can be accessed by the public, with relevant permission. Court records are covered by the National Heritage Act and thus cannot be destroyed without the assent of the National Archives. Original court records, such as wills and powers of attorney, should be retained permanently, while all case records that are inactive and more than ten years old should be converted to microfilm for permanent retention and storage.

Long-Term Preservation of Records

- 58 The Joint Committee defined three methods of long-term storage and retention: the original paper form, digital form and microfilming. The most appropriate mode of storage was to be assessed against factors such as evidence requirements, speed of retrieval, security of the medium and costs. Microfilm is favoured due to its stability, its low cost storage requirements and the fact that it does not require migration. It is a tried and tested medium that has been proven to have very long-term durability if stored in appropriate conditions.
- 59 In July 1997, a microfilming project was introduced with the aim of converting all case files up to 1995 to microfilm. When the project was completed in March 2000, forty-nine million pages had been microfilmed on 18,490 rolls of microfilm that are now housed in fifteen storage cabinets. The Judiciary Microfilm Library, located in a secure area of the courts, spans over twenty square metres.
- 60 Paper court records up to 1988 have already been destroyed. Later records will be kept for twelve years from the last order or judgement in the case.

- 61 The current policy is that all case file records that are more than ten years old will be converted to microfilm, at which point the paper records will be destroyed. Some documents, such as wills, will be retained in original paper form. Records awaiting microfilming are stored off site until their disposition is authorised by the National Archives under the terms of the National Heritage Act.
- 62 A committee within the Subordinate Courts is investigating 'permanent' storage for digital records. In the interim, documents are stored in PDF format.

Standards, Policies and Procedures

- 63 All court records are subject to the National Heritage Act, and disposal of any government records without the approval of the National Archives is a criminal offence. Standards and guidelines for the creation, use and disposition of court records are available in government administrative manuals.
- 64 Singapore has benefited from an established information technology infrastructure, including policies, procedures, standards, guidelines and user training. The government information technology infrastructure is united under one common desktop environment. Interoperability and common data interchange allow systems and users to communicate with each other.
- 65 The EFS imposes procedures by requiring that metadata be entered in the system. The document details are entered by the user, and there are mandatory field requirements such as the type of document. Each document has a unique system-generated reference number that is cross referenced to a case number. The name of the law firm, the time and date filed are all automatically generated by the system. The system tracks the version, the document control number and its status (for example 'accepted'). The metadata appears on the left hand side of the screen while the document appears on the right. All documents pertaining to a case file are electronically available to those with access privileges.

NATIONAL ARCHIVES OF SINGAPORE

- 66 The National Archives of Singapore is part of the National Heritage Board and is headed by a director and fifty-two staff. There are three core divisions, each headed by Assistant and Senior Directors. These are: Archives Services; Records Management; Exhibitions and Audio-Visual. The staff are organised along departmental lines. Some of the staff have professional qualifications, while others have received training through the Civil Service College. Managers also receive policy training.
- 67 The National Archives has staff that liaise with government organisations to provide records expertise. These Departmental Records Officers have frequent contact with most government bodies, although contact with the Judiciary is less frequent than with some others.

- 68 The National Archives government intranet website was launched in 1999 and redesigned in 2000. It provides government departments with information on records management policies and guidelines. It is possible to download instruction manuals for paper registries; forms; guidance on classification, indexing and numbering; and retention schedules for 'housekeeping files'.
- 69 Government departments use an Archives and Records Management System (ARMS) to submit details of records not covered by retention schedules that require review by the National Archives. This system has been operational since 1999 and is used primarily for paper records. It is likely that the system will be integrated with existing retention schedules. ARMS can be searched by users at the file level, and when the records are microfilmed, reference numbers are added to facilitate retrieval.
- 70 Due to its low storage costs, durability and ease of access, microfilm is regarded as the best medium for permanent storage. The microfilming unit at the National Archives has the capacity to migrate standard as well as oversize documents, such as maps and architectural drawings, to microfilm. It is estimated that 10% of all government records are selected for permanent preservation, a larger proportion than in some countries such as the United States and United Kingdom.
- 71 Access to government records is strictly controlled and files remain closed for 25 years.

Electronic Records Programme

- 72 Electronic records are accepted as official records of government activities, judgements and transactions and can thus be retained in their original electronic form. There are policies and procedures that govern the creation, maintenance and transfer of electronic records from the creating department to the National Archives (NAS). There is separate guidance for the preservation and disposal of electronic records known as GERRS (General Electronic Records Retention Schedule). The GERRS is 'owned' by the Ministry of Finance.
- 73 The National Archives makes available an Electronic Registry System (ERS) known as KRIS. The ERS was developed co-operatively between three partners: SQL View, a Singapore Application Service Provider (ASP); Kodak Inc; and the National Archives. ERS allows government agencies and offices to capture and manage electronic records. The system requires a Windows NT 4.0 or 2000 platform and operates using Microsoft SQL Server 7.0 or SQL Server 2000. It is based on open architecture, XML and can read and retrieve documents in formats such as word, PDF and PowerPoint. Documents and files are transferred securely by PKI (Public Key Infrastructure), a standard encryption method.
- 74 KRIS has four modules: Archives Policy, Archives Transfer, Archives Reference and Archives Preservation.

- The Archives Policy Module (APM) allows a registry to submit files to the NAS for appraisal. There are three main processes in this module: firstly, extracting files for NAS appraisal; secondly running the appraisal policy; and finally updating the agency's electronic registry.
- The Archives Transfer Module (ATM) is used to deliver files at the end of their retention period to the NAS. The transfer module uses XML and PKI technologies to ensure that the integrity and security of the files are not compromised. Each file is transferred with metadata to describe the agency, the ID, author, date of creation, history log and security setting. The main processes of the ATM are to obtain a batch ID from the NAS, to extract a summary on the records awaiting transfer, to select from a list of records which are to be transferred and to select the medium to which the records should be transferred. Text records are captured in PDF format and graphic images as TIFFs.
- The Archives Reference Module (ARM) is used to retrieve the records transferred via the ATM. Each transferred file is converted from XML back to its original format, accompanied by all metadata collected in the ATM module. This module employs Digital Signature (PKI) to ensure the ongoing integrity and authenticity of documents.
- The Archives Preservation Module (APM) is integrated with Kodak's Document Archive Writer to generate microfilm. Files are selected from the Electronic Registry and converted to TIFFs to become microfilm. Microfilm files are indexed by location.

75 The National Archives has the expertise to continue to develop policies, procedures and strategies regarding the management and preservation of electronic records. The main obstacle to achieving this goal is limited resources. Currently there are five records management staff in the archives who provide services and expertise throughout the entire government of Singapore.

RECORDS AND INFORMATION MANAGEMENT: KEY ISSUES

76 With the advent of the EFS system, records that were previously held in paper form are created and stored electronically. A team has been established comprising Crimson Logic and technical and court staff to address the issue of long term preservation of electronic court records. While storage space can be readily expanded in an electronic environment, over time it can become quite expensive. There is a danger that retention policies may result in the storage of large volumes of electronic documents that no longer serve business requirements. It may be more cost effective and efficient to impose stricter retention guidelines with appropriate checks and balances embedded in the work flow to ensure that documents are deleted as soon as they cease to have value, and that only those that require long term storage are retained in an online or offline environment.

- 77 All court records are preserved on microfilm in the National Archives. While this solution has addressed the severe space constraints in Singapore, it is a resource intensive process.
- 78 The National Archives of Singapore has developed an extensive programme to meet its functions as outlined by the National Heritage Act. However, the advent of computerisation has presented new issues for the long-term preservation and access to records. When held in electronic form, records are highly vulnerable to loss through human error and technological obsolescence. Moreover, the sheer volume of electronic records requires thorough and consistent indexing and classification to enable retrieval over time.
- 79 No additional resources have been provided to the National Archives to meet these challenges and there has been no increase in staffing in fifteen years. The fact that training in electronic records management is available at the Singapore Institute for Public Administration and Management is helping to enhance the level of control of electronic information. However, without additional resources it will be difficult for the National Archives to continue to provide the quality of guidance that it has given in the case of paper records.

LIST OF PEOPLE CONSULTED

Supreme Court

Mr Chiam Boom Keng, Registrar
Mr Phua Wee Chuan, State Counsel
Ms Thian Yee Sze, Assistant Registrar

Subordinate Courts

Ms Elyana Ishak, Senior Deputy Head, Public Affairs
Mr Dennis Chan, Senior Deputy Head, Technical Services
Mr Glenfield de Souza, Director, Legal Division
Mr Lee Chun Yip, Senior Director, Corporate Services
Mr Krishnan Nadarajan, Assistant Director, Civil Justice Division
Mr Richard Lau, Principal Director, Corporate Services and CIO
Ms Seeto Wei Peng, Senior Deputy Head, Research and Statistics

National Archives of Singapore (NAS)

Mrs Kwek-Chew Kim Gek
Phang Lai Tee, PhD, Assistant Director, Electronic Records Programme & Administration Services
Mr Pitt Kuan Wah, Director NAS
Ms Lian San
Mr Henry

Khattar Wong and Associates

Deboral Barker, Senior Counsel, Partner
K Anparasan, Partner
Abdul Rashid Gani, Managing Partner

SQL View

Stephen Lim, CEO/Managing Director

THE JURISDICTION OF THE COURTS

This describes the main functions and responsibilities of each of the Supreme, Subordinate and Specialised Courts.*

Type of Court	Functions and Responsibilities
<i>Supreme Courts</i>	
Court of Appeal	Consists of Chief Justice and two Judges of Appeal. Singapore's final court of appeal. Hears appeals from the High Court in both civil and criminal matters as well as can also decide any point of law reserved for decision by the High Court in exercise of its original jurisdiction or in matters of public interest.
High Court	Consists of Chief Justice and Judges and Judicial Commissioners. Hears both Criminal and Civil cases as a court of first instance and also hears appeals from the lower courts. Hears civil matters in cases which exceed S\$250,000 and where Criminal offences are punishable by more than ten years imprisonment.
<i>Subordinate Courts</i>	
District Court	Civil: Handles claims not exceeding S\$250,000 and probate matters of estate value less than S\$3 million.
	Criminal: Handles offenses punishable by fine not exceeding S\$10,000 or not exceeding 10 years imprisonment. May also hear family related cases.
Magistrate's Court	Civil: Hears claims up to S\$60,000
	Criminal: Handles offenses punishable by fine only or imprisonment for less than three years.

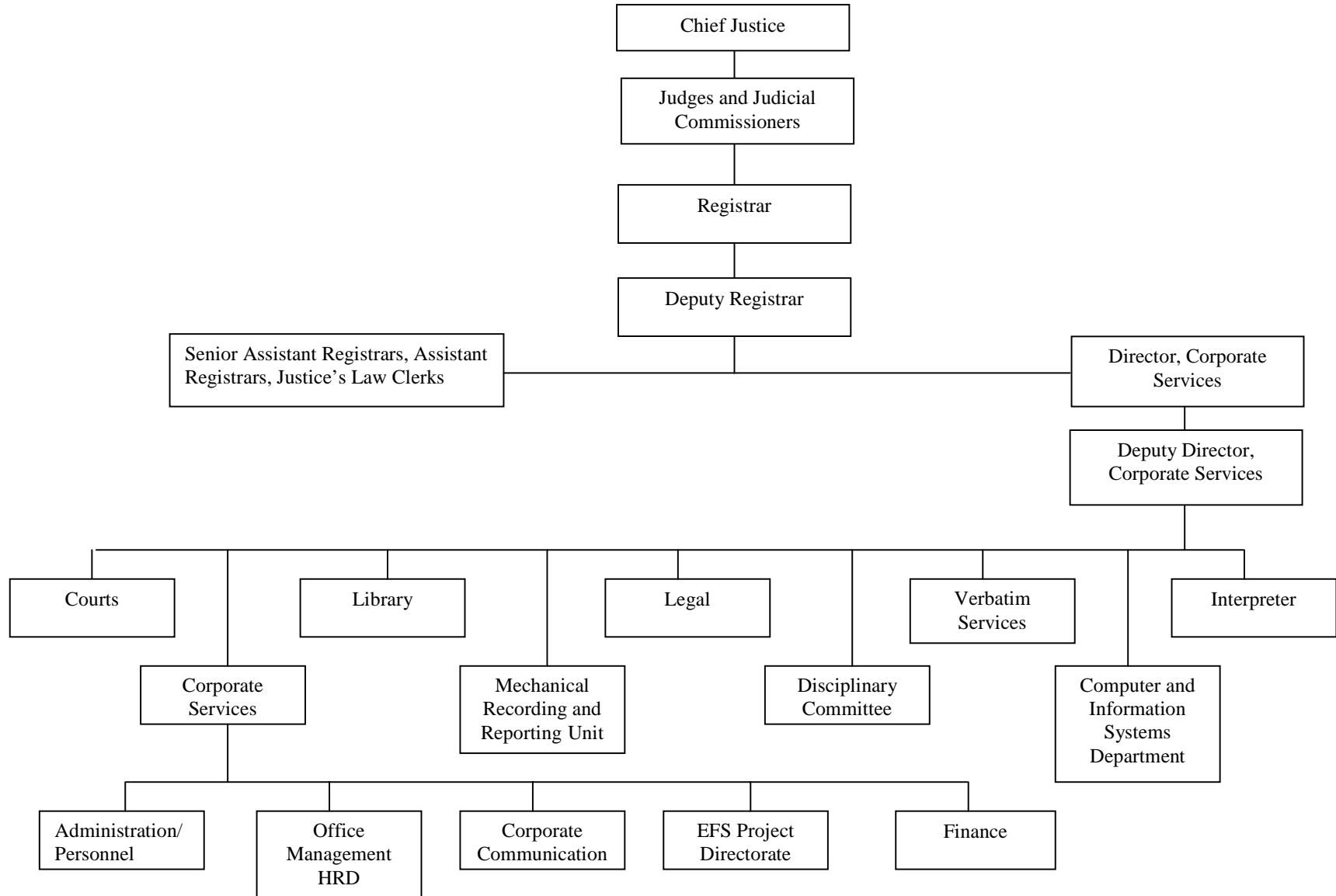
* Sources: *Justice in the 21st Century: The Supreme Court, Singapore, Annual Report 2001*
Justice, Building the Block: Subordinate Courts Annual Report 2001.

Type of Court	Functions and Responsibilities
Coroner's Courts	Handles inquiries regarding sudden death or any other death which requires state investigation.
Juvenile Court	Deals with offenses committed by children (under 14) or adolescents aged 14-16, may also deal with matters of child protection.
Small Claims Tribunal	Hears all disputes from contracts for the provision of good and services, this includes property damage, tourist complaints. All disputes must deal claims valued less than S\$10,000, however if both parties agree in writing, claims up to S\$20,000 may be heard by the tribunal.
<i>Specialised Courts and Centres</i>	
Family Court	Hears matter relating to divorce, custody, maintenance, the division of matrimonial property, the adoption and guardianship of infants.
Traffic Court	Hears and tries traffic offenses.
Criminal Mentions Court	Court for bail applications and sentencing for defendants who plead guilty. Judges can also transfer cases for pre-trial conference.
Night Courts	Handles summons issued by various government departments, for example the Housing and Development Board or Inland Revenue Authority.
Primary Dispute Resolution Centre	Court based alternative dispute resolution centre through mediation and settlement rather than trial. Hears matters pertaining to civil, family, juvenile, small claims and criminal.
Multi-door Courthouse	Provides services to the public including: Assistance in pairing disputes within the subordinate courts, court services and operation.

**SUPREME AND SUBORDINATE COURTS
ORGANISATIONAL CHARTS***

* These are partial organisational charts to illustrate the governance structure of the courts.

Supreme Court Organisational Chart



Subordinate Courts Organisational Chart

