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Civil Section Documents - Electronic Evidence: Computer Produced Records in Court Proceedings

OUTLINE

Records generated by or stored in a computer are increasingly used in the public and private sectors. Both common law and statute provide rules for the use of documentary evidence in court. This paper examines whether the existing rules for documentary evidence apply readily to computer-produced records, or whether those rules should be changed or supplemented.

After a brief look at some very fundamental principles of evidence law and of computer records, the paper looks at the common law and the existing statutes that deal with business records. Less attention is paid to public documents, though the principles of the discussion may be relevant to them as well. It concludes that the current law is unsatisfactory in principle.

A number of statutes elsewhere do deal expressly with computer records in evidence, as does the Civil Code of Quebec. These are set out in some detail. Appendices contain a closer analysis of the provisions of Canadian and other legislation.

The Uniform Law Conference dealt with computer records when it created the Uniform Evidence Act. The paper reviews the debates at that time, including a detailed appendix on the subject. At that time the Conference elected not to impose special rules on computer-produced evidence.

Several options face the Conference now. It could do nothing, on the ground that the current law works in practice, even if uncertain in principle. It could adopt a short statement on the evidentiary status of electronic records. It could insert a list of criteria for the admissibility or weight of these records. It could revamp all the documentary evidence sections of the Uniform Evidence Act to conform with the proposed rules for computer records. It may wish to consider whether new rules should apply differently to bank, business and public records.

Electronic imaging is a related subject, and a new technology since the Uniform Evidence Act was adopted in 1981. It straddles the rules for microfilm and those for business records. Arguably its status should be clarified by statute.

It appears desirable that the law should enforce private agreements setting standards for evidence in litigation between the parties. This will give some comfort to enterprises doing business electronically under the terms of a trading partner agreement.

Any new rules should promote the admission of reliable evidence and be clear, fair and workable.

Computer-Produced Records in Court Proceedings

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Introduction

[1] As we rely more and more heavily on computers in all aspects of our life and work, the products of computers are more and more widely relevant to litigation to sort out our legal relations. This paper addresses the use of computer records as evidence in such court proceedings, both civil and criminal.

[2] Electronic records are documents, and the rules of documentary evidence apply to them, though not always easily. The paper starts with a very basic overview of the law on documentary evidence. It then discusses computer technology and how the technology challenges the application of the usual rules for documents.

[3] The law has not been completely silent on electronic records. In fact, these records are regularly admitted in both criminal and civil proceedings across Canada. The paper looks at what has happened so far, in the courts and in statutes here and abroad. The adequacy and fairness of the present law are evaluated in some detail.

[4] We then look at options for law reform in this area and the case for harmonization of a reformed legal regime across the country. What the Uniform Law Conference has already thought on this subject is obviously relevant to this part of the discussion.

[5] The paper concludes with recommendations for uniform action in the area.

some principles of documentary evidence

[6] The basic rule of evidence is that it must be the (sworn) oral account of facts of which the witness has personal knowledge. The witness is available in person in court to have his or her account tested by cross-examination.

[7] Information of which the witness does not have personal knowledge is "hearsay", that which the witness heard someone say (or which he/she learned in some other way without experiencing it first hand.) (The witness's opinions make up a distinct class of evidence, which is sometimes relevant to electronic records too.)

[8] Information in documents or other records is hearsay, since the person presenting the information as evidence in court does not have personal knowledge of that information. If the witness had the personal knowledge, it would not be necessary to use the documents to prove the facts in them.

[9] The traditional rule is that hearsay evidence may not be admitted. This general rule has been eroded substantially in recent years by a series of exceptions. An argument can even be made that there is no longer a ban on hearsay evidence. There is simply a rule that hearsay evidence must be demonstrated to be reliable and its admission necessary to the proper adjudication of the case. For the purposes of this paper, we do not need to decide whether the present admissibility of hearsay evidence is a matter of exception or a matter of rule.

[10] Two subsidiary rules of evidence apply to documentary evidence. The first is the "best evidence" rule: to prove something in court, you must use the best evidence that can be produced. "Best" means closest to direct

sworn oral evidence. This produces a hierarchy of documents judged on such criteria as when they were made, by whom they were made, their status as "original" documents or copies, and the like.

[11] The second subsidiary rule is an "exception" to the rule barring hearsay evidence. Courts have long agreed that documents should be admitted to prove the information they contain. The common law developed criteria for admissibility, such as that the documents were produced at the same time as the events they recorded; that they were produced in the ordinary course of the business of the party creating them; and that they were used and relied on by the creator in his/her/its business.

[12] These rules have been replaced or overlaid with statutory rules in the federal and provincial Evidence Acts. Many Canadian statutes classify documentary evidence depending on its origin and its form. Different rules apply to each. Government and other public documents are treated in one way, business records in another, business records that are also banking records in a third.

[13] The courts have interpreted these sections in inconsistent ways, sometimes appearing to apply "bank" standards to other documents, or "other" standards to bank documents. They have also used the common law tests of contemporaneity and the like in applying the statutory tests. This may be in part because they have not distinguished in every case when they were deciding admissibility and when they were judging the weight of the evidence.

[14] These criteria are aspects of the one of the tests for the admission of hearsay evidence: reliability. The other test is necessity. One of the main reasons admitting a document is necessary is because the oral evidence is not available. The person who has direct knowledge of what is reported in the document is not available, or the information is such a routine bit of data among much else that no one could reasonably be expected to recall learning or receiving the particular information to be proved.

[15] The "necessity" test has given rise to some confusion because the term is also used to justify using a copy of a document instead of an

original. However, this justification is an aspect of the best evidence rule, not the hearsay rule. Applied to documents, the best evidence rule means that an original document is the preferred evidence. Sometimes this too has been altered by statute. Some statutes provide that a photograph of a cheque is admissible without proving how it came to be produced or used.

[16] Additional provisions have been made for other photographic and microfilmed documents. Some of them show their origins by requiring that the original (paper) documents must be retained for a period of years as well as the microfilm. (Presumably this allows parties to test the reliability of the microfilm by looking at the originals, even though the microfilm is admissible as is.)

[17] As a result, the law is somewhat confusing in theory. Not all the contentious issues have been mentioned here. However, documentary evidence is regularly used without serious problems of principle.

electronic evidence

[18] Electronic evidence is a version of documentary evidence.[2] As a result, both of the above tests for the use of documentary evidence apply to it: best evidence rule and hearsay rule. How this is done and how it should change, if at all, is the subject of this paper.

[19] Electronic evidence is information that is recorded electronically. It may be created electronically or simply stored electronically. It may be on paper at one or more stages of its "life" and electronic at others, such as a fax (though faxes are generally treated as copies of paper records rather than as computer records).[3] It may exist in more than one place at a time - in two computers, for example. An incomplete sample of electronic records would include those in or created by single computers, computer-to-computer communications, with or without intermediaries and with or without transformation of the messages at both ends, magnetic strips on plastic cards, microcomputers on plastic cards (smart cards), electronic mail, bulletin boards and international communications networks.

[20] The different ways in which computers are used to create, store and retrieve business records involve either communications between computers and humans or computer to computer communications, the latter being merely a variety of the former with the intervention of a second computer or multiple computers. Therefore it is not necessary to describe all of the different ways in which computers are used to create, store and retrieve business records. From the point of view of the law of evidence the different applications of computer technology will not affect the type of evidentiary provisions necessary to accommodate them, if those provisions concern operations common to all computer applications.

[21] Such operations are, for example, the sources of data and information used in databases, the entry of such data and information, business reliance upon such databases, and software reliability. General or specific references to such operations placed in the business record provisions for example, would be applicable to all computer-produced business records. On the other hand, the relation between computer technology and microfilm could change evidentiary provisions because traditional microfilming has its own provisions in the Evidence Acts in Canada.

[22] Businesses and their lawyers express considerable interest in EDI (electronic data interchange). This can be defined as computer to computer transmission of data in structured forms, i.e. paperless trading.[4] It does not require special treatment apart from *Evidence Act* provisions that apply to other computer-produced records. EDI's special legal issues concern contract law, not evidence law, e.g. trading partner agreements containing terms as to establishing the communications network, allocating costs and risks, determining security procedures, and procedures for verifying content, timing and authenticity of messages. They might also contain evidentiary provisions for settling disputes but they do not require intervention by an evidence statute. The validity of a private code of evidence might be addressed in a statute. More on this later in the paper.

[23] From an evidentiary point of view EDI is simply an example of a computer used to receive externally created records and data and therefore it does not provide anything unique. Any specific factors recommended for proof could apply equally to EDI systems. Those factors, particularly sources of data and information and entry and verification procedures would apply equally to proof of the handling of data and information between computers as well as between people and computers.

[24] A different example is electronic imaging. The word "imaging" is commonly used in the information and image management industry itself to mean electronic imaging[5], which is the capture of exact images or pictures of documents onto optical or magnetic disk by means of an image scanner. It is expected to replace microfilming before the next century. The electronic records so scanned become part of a computer memory. Technically they may be able to be altered once in the memory in undetectable ways, depending on how they are recorded. As a result, those interested in using imaging technology have prescribed standards for handling the information to increase the security of the information. Appendix D of this paper discusses the legal impact of imaging in greater detail. For the moment, we need only to note that it straddles the common law and statutory rules relating to microfilm records and business records. Since these two are not consistent, some new statutory rule on imaging itself is desirable.

some legal guideposts

[25] With this much by way of background, we can now look more closely at the legal issues posed by electronic evidence. Here are some of the key points on which the discussion will turn.

* Admissibility and weight: Should the electronic record be allowed into the courtroom discussion at all? If so, what factors are relevant in determining its effect? Some statutory rules provide that some features of the production of a record may not affect admissibility. Some may affect both admissibility and weight, at which point the question becomes one of clarity of legal rule: how can one manage one's records in a way to ensure

their best use in litigation, or how can one challenge the use of records produced by the other side?

* Statute and common law: The common law rules for documents were detailed and narrow. Statutes have generally been more flexible and broader. However, they have also been vague enough that courts have reverted to the common law, or created a new common law of statutory reading, to interpret them. Electronic records challenge the vagueness of the statutes even more thoroughly. Should new statutory provisions pick up some of the common law standards and apply them expressly to electronic records, or define the new rules in more detail by some other means?

* Types of document: Is the classification of rules by type of document (business, bank, government) adequate for electronic records, or does the electronic nature of the record unite the statutory classes so similar rules should apply to all?

* Criminal and civil proceedings: The current law, both common and statutory, does not distinguish between evidentiary rules in different types of proceeding, though of course the *Canada Evidence Act* applies largely to criminal actions and the provincial statutes to civil. Is there any case for deliberate variation?

* Role of consent: Is there anything in the nature of evidence that would prevent private parties from setting out by contract what criteria will be used for the admission and the weighing of evidence in litigation between themselves? Is the only concern one of equality of bargaining power in creating such a contract?

[26] Rules of law on this topic should seek to achieve three ends: accurate evidence of reliable records; fairness between proponent and opponent of the evidence; and workability in practice.

[27] Three approaches are possible in reforming and harmonizing the law in this area.

1. i) to add special subsections for computer-produced records to the existing business record provisions and for imaged records to the microfilm provisions:

* the existing provisions seem to be adequate for traditional precomputer business records and therefore do not have to be disturbed for those records. However most current records are now computer-produced so special rules may be useful for them.

2. to re-write those provisions into an single integrated set of provisions having common definitional, procedural and other support provisions (as the Uniform Law Conference, among others, proposed in the early 1980s; see discussion below under the heading, "Law Reform in Canada"):

* this would produce the same legislation for all types of business (and other) records, rather than having separate provisions for computer-produced records and imaged records. If imaging becomes widely used as expected, the two sets of provisions will often have to be used together. Therefore they should be integrated for efficiency so as to reflect that reality.

3. to do nothing and let the existing business record provisions deal with computer-produced records as best they may:

* computer-produced records are being admitted under the existing provisions without the creation of court decisions or new statutes that could inhibit their admissibility or weight.

[28] To determine the merit of each of these three approaches to legislative amendment, the current law for each of the different types of business record provisions has to be briefly analyzed.

the common law: a brief reminder

[29] The common law made an exception to the rule against hearsay for business records because of "circumstantial guarantees of reliability", in Wigmore's phrase. Those guarantees were:

- records made contemporaneously with the events recorded;

- by persons with direct personal knowledge;

- during the course of business;

- by a person under a duty to make the record;

- without any motive to misrepresent;

- who is since deceased.[6]

[30] The common law rule was restated in Canada in *Ayres v. Venner* 7 It held that hospital records made contemporaneously by someone having personal knowledge of the matters then being recorded and under a duty to make the entry or record should be received in evidence as prima facie proof of the facts stated therein. It has been stated to apply to business records in general.[8]*Pacific Railway Company v. City of Calgary*, [1971] 4 W.W.R. 241 (Alta.CA.). It clearly can still be used, even though many of its rules have been supplemented or often even made unnecessary by statute.

[31] In addition, the best evidence rule generally required the documents to be originals.

statutory rules

[32] The evidence statutes of all the jurisdictions in Canada contain some rules about documentary evidence, most of it not specifically designed to apply to computer records. (The new Civil Code of Quebec is an exception. It is discussed below in the section on legislation dealing with electronic records. See page 22.) A detailed examination of the statutory regimes appears as Appendix A.

[33] As a very general rule, we can say that most of the Canadian statutes focus on the circumstances in which the document was made and the fact that it was used in the usual and ordinary course of business. Some statutes expressly require that it was made reasonably contemporaneously with the facts it describes. Several statutes provide that the circumstances of making affect the weight of the document but not its admissibility.

[34] It should be noted that the best evidence rule will continue to apply to the documents admitted by statute, so that the original document will

have to be produced if it is available. Statutory exceptions are confined to provisions on banking documents and some microfilmed records.

[35] It is fair to say that little uniformity exists, and thus little certainty for those who carry on business across provincial or territorial lines - and little enough of the latter for those within a single jurisdiction either. The necessary evidence to be marshalled for court is uncertain, as are the standards to be applied. As a result, the common law principles have been invoked as a source of interpretation, though selectively and not in every case.

[36] Even with these rules, the treatment of electronic evidence is not clear. In particular, the present law lacks a list of specific requirements for admissibility. The following statement from *R. v. McMullen* (Ont. C.A., 1979)[9], is the closest the law has come to providing a specific test for the admissibility of computer-produced records:

I accept that the demonstration of reliability of computer evidence is a more complex process than proving the reliability of written records. I further accept that as a matter of principle a Court should carefully scrutinize the foundation put before it to support a finding of reliability, as a condition of admissibility (see *McCormick's Handbook on the Law of Evidence,* 2nd ed. (1972), p.734), and that the admission procedures in s. 30 [of the *Canada Evidence Act*] are more finetuned than that in s. 29. However, this does not mean that s. 29(2) is not adequate to the task. The four conditions precedent provided for therein, the last one being that the copy of the entry offered in evidence is a true copy of what is in the record, have to be proven to the satisfaction of the trial Judge. The nature and quality of the evidence put before the Court has to reflect the facts of the complete record-keeping process - in the case of computer records, the procedures and processes relating to the input of entries, storage of information and its retrieval and presentation: see *Transport Indemnity Co. v. Seib* (1965), 132 N.W.(2d) 871; *King v. State ex Rel Murdock Acceptance Corp.* (1969) 222 So.(2d) 393, and "Note, Evidentiary Problems and Computer Records", 5 *Rutgers J. Computer Law*(1976) p.355, et seq. If such evidence be beyond the ken of the manager, accountant or the officer responsible for the records (*R. v. McGrayne*, Ontario Court of Appeal,

March 14, 1979 [since reported 46 C.C.C.(2d) 63] then a failure to comply with s.29(2) must result and the printout evidence would be inadmissible.

[37] This statement was refined in *R. v. Bell and Bruce* (Ont. C.A., 1982)[10] and the concept of "the original" was refined to be more compatible with computer-produced records:

McMullen is authority for the proposition that information stored in a computer is *capable* of being a "record kept in a financial institution", and that the computer print-out is *capable* of being a copy of that record, notwithstanding its change in form. It is not authority for the proposition that the stored information is the only record, or that a computer print-out is only a copy of that record.

Because of the rapidly changing nature of the technology, it would be impossible to lay down general rules to govern every case. It is always a question of fact whether any recorded information (in whatever form) is a "record kept in any financial institution", but I think the following general propositions have so far emerged:

1. A record may be in any, even an illegible form.

2. The form in which information is recorded may change from time to time, and the new form is equally a "record" of that kind of information.

3. A record may be a compilation or collation of other records.

4. It must have been produced for the bank's purposes as a reference source, or as part of its internal audit system and, at the relevant time must be kept for that purpose.

Before computers were used by banks, a teller's journal was the original record. The entries in that journal were posted to a ledger, and that became a second record. I have no doubt that the ledgers of all accounts in a branch were collated so as to produce a ledger for the branch, and that became a record. So it makes no difference that the original information changes form, or becomes absorbed in some larger record. The authenticity of the record as evidence is sufficiently guaranteed by compliance with s-s. (2) of s. 29.

[38] We see from these quotations that the courts want to look at foundation evidence, i.e. testimony about the records that establishes the facts on which admissibility may be based. The key question is the nature of the foundation evidence that is needed. It is significant that both these cases dealt with bank records, which have traditionally been received more readily into evidence than documents from other kinds of businesses. To the limited extent that they do set a standard, it is arguable that the standard is too liberal to apply universally.

some statutory shortcomings

[39] In short, the law as to the admissibility and weight of business records appears to be based upon three concepts, two of which are without fixed definition and the third of which needs to be revised for computer-produced records. The undefined concepts are "the usual and ordinary course of business" and "the circumstances of the making of the record." They are in most of the evidence legislation in Canada.[11] The third is the concept of "original" document.

[40] The absence of fixed definitions of usual course of business and circumstances of making of the record gives the courts complete flexibility in applying them, but leaves litigants and the business community uncertain as to what is required to prove business records as admissible and credible evidence. The courts do not have adequate principles by which to judge the "usual and ordinary course of business", and the "circumstances of the making" of computerized record-keeping.

[41] A surprising number of questions about documentary evidence remain unanswered, even by the combination of statute and common law. Consider these examples:

Whether the present statutory language requires that admissible records need only be made by a person under a "business duty' to make such records, or whether the supplier of the information recorded, as well as the maker of the record must have been acting pursuant to such "business duties".[12]

Whether it is sufficient if the making of the record was part of the ordinary routine of the business, or whether not only the making of the record but also the events being recorded must be part of the business routine.[13]

Whether contemporaneity between the making of a record and the events recorded as part of the "usual and ordinary course of business" must always be considered.[14]

Whether records are inadmissible because of the interest or bias of the maker of the records, or whether such a requirement is not to be read into the statute.[15]

[42] These "hearsay" questions could be resolved by statute to allow the business records exemption to be compatible with computer-produced business records. Whether one imports and adapts some of the common law to help make the current statutes compatible, or returns to first principles, is less important than the result.

[43] The third unsatisfactory concept in the present law is that of "the original", i.e proof of a record requires proof of the original record, an acceptable original being one made at or near the time of the events it records. This is the best evidence rule, rather than a hearsay rule as were the previous two. The best evidence rule states that the absence or alteration of the original must be adequately explained or proof will fail.[16] The concept of "the original" provides some compensation for the vagueness of the "usual and ordinary course of business" concept.

[44] However, computerized record-keeping does not produce such originals unless the computer is being used merely as a storage device for records of original entry. A computer printout is usually created at the end of the information creation and handling process and not at its beginning as is the traditional "original". Designating the printout as the "original" as was done in *Bell and Bruce* is artificial. Arguably it should not displace the need for proof of the procedures and sources of information that went into creating the record.

[45] On the contrary, the absence of a traditional "original" in computerized record-keeping should be compensated for by a more

detailed analysis of the usual and ordinary course of business and the circumstances of the making of business records. In other words, the loss of the traditional "original" evidence, being a record made at the time of or near the event recorded, in favour of a printout made at the other end of the information handling process, makes more necessary some proof of the system that went into making that printout.

[46] In short, the law should move from "original" to "system", that is, from a dependence upon proof of the integrity of the original business document to a dependence upon proof of the integrity of the record-keeping system. This means that the best evidence rule loses most or all of its application in this field, since the same factors that will be relevant to the hearsay exception will affect the use of the evidence as equivalent to an "original".

the case for legislation

[47] We have seen that the current statutes provide several different tests of admissibility and weight of computer-generated records, and the key terms are often either not defined or defined in ways that do not work well for electronic documents. For a number of reasons, it is arguable that these divergences and ambiguities will not work themselves out through the case law.

[48] The judicial process of case-by-case decision-making is a very poor process by which to develop binding, uniform principles for records management and data-processing. A statute that requires evidence on key points of computerized record-keeping would prevent a haphazard development of case law principle in the courts. The statute could elicit evidence on the main features of a computerized record-keeping system; the courts can then analyze it in detail. An individual case is a good vehicle for establishing a principle to govern a particular set of facts. But it is a poor method for establishing a major, dominant principle that is to govern many cases, **unless** that individual court case has been preceded by many court decisions that it can draw experience from in drafting that broad, dominant statement of principle. There does not exist a large volume of court decisions that have analyzed computerized record-keeping.

[49] It appears that it will take decades for Canada to develop a sufficient body of case law from its courts. For example, the present business record provisions have been in the evidence statutes for more than 25 years but they have produced very little analysis of what the courts should look for by way of the "usual and ordinary course of business", and the required "circumstances of the making of a record". The development of computer technology has greatly accelerated, and with it the pressure from the business community for legislation that makes clear how the new technology will produce admissible business records.

[50] A number of other jurisdictions have legislated on electronic evidence. We may get some guidance from those precedents for appropriate action for Canada. Amended evidence statutes could then "occupy the field" by making specific rules that would clearly pre-empt common law glosses on existing statutes. This is arguably more manageable than the present collection of unresolved issues.

[51] The issues and criteria by which they may be judged were listed previously, at paragraphs 25 and 26. The essential questions may be these:

* Should the admissibility of computer printouts into evidence requires as a condition precedent a detailed examination of the computerized record-keeping system that produced them, and if so what features should be proved?[17]

* When is a computer printout to be treated as an original record and when is it to be treated as a copy, or does this question still make sense for electronic records?[18]

a qualification

[52] Evidence that does not meet the statutory test for documentary evidence - business or other records - may nevertheless be admissible for some other reason. First, the common law rules still apply, and they may allow some material in that would not fall under the statute. Second, other exceptions to the hearsay rule may apply. The evidence may be part of the *res gestae*,or be adduced for some other reason than to prove the

truth of its contents.[19] Third, some kinds of computer-generated records may be expert opinion rather than evidence of facts, and admitted under the rules for opinion evidence.[20]

Legislation dealing with electronic records

[53] Specialized legislation for computer-produced records from other countries can help to determine whether similar provisions should be enacted here. Consider the following legislative succession. First came legislation from England whose requirements for admissibility were, as stated here in point-form:

The *Civil Evidence Act 1968*, s. 5(2) (U.K.)[21]

(a) regular use of the computer for activities regularly carried on;

(b) computer regularly supplied with information of the kind in the statement;

(c) computer operating properly, or defective operation did not affect production or accuracy;

(d) the information is derived from that supplied to the computer in the ordinary course of those activities.

[54] Next, in 1972 the *South Australia Evidence Act* added a specialized computer printout provision whose admissibility requirements were, in point form:

(a) computer correctly programmed and regularly used to produce output of the kind tendered in evidence;

(b) computer output produced from data prepared from information, "that would normally be acceptable in a court of law as evidence of the statements ... in the output";

(c) no reasonable cause to suspect departure from the system or error in the preparation of the data;

(d) from input to output, the computer was not subject to a malfunction affecting accuracy;

(e) no alterations to mechanisms or processes of the computer that might affect accuracy;

(f) records have been kept by a responsible person of alterations to the mechanisms and processes of the computer;

(g) accuracy or validity of output not adversely affected by improper procedure or inadequate safeguards.

[55] Both of the above lists establish an important safeguard or guarantee of accuracy in requiring that the data or information upon which the tendered printout is based be such as is regularly fed to the computer as part of the regular activities of the organization. This requirement is comparable to the business document requirement of records "made in the usual and ordinary course of business." The desired result is records or printouts prepared according to established procedures and pursuant to established business duties. The *Civil Evidence Act 1968* is more direct and therefore clearer in establishing this "business as usual" requirement.

[56] The importance of such a requirement would be given further emphasis if another of its underlying reasons were expressly stated - reliance upon such records in business decision-making. The South Australian criteria are superior because they direct attention to the computer program used. But both direct too much attention to the mechanical fitness of the computer. Such concern is more appropriate to the conditions of admissibility of the evidence produced by breathalyzer machines and radar devices. Since these provisions were enacted, it has become clear that intentional falsification and negligence by human operators is almost the totality of the threat to computer printout accuracy, and that computer mechanical fitness is a minuscule source of inaccuracy. The admissibility criteria laid down by the courts or the legislatures should be designed accordingly.

[57] For similar reasons a contemporary law journal draft provision[22] placed emphasis in the required proof upon: input procedures; reliance upon the database in business decision-making; and upon the computer program. These criteria focus more closely upon the human parts of a computerized record-keeping system, where the errors and falsehoods

are likely to occur, instead of upon the mechanical and electronic parts of the system where they rarely occur. They give much more guidance to a court, to a lawyer preparing a case, and to a records manager attempting to determine what the law requires of records keepers, than do such vague phrases as, "the usual and ordinary course of business", and, "the circumstances of the making of the record."

[58] Next came the South African *Computer Evidence Act 1983*. It provides for an authenticating affidavit from someone knowledgeable about the computer system and the record to be adduced, certifying to the proper operation of the computer.

[59] The effect of such a legislative approach to the foundation evidence of computer printout admissibility is to place upon the adducing party an onus to demonstrate the reliability of the record-keeping system, instead of placing an onus upon the opposing party to disprove reliability once the adducing party has adduced some evidence of records made in the "usual and ordinary course of business." Such systems can be too complicated to justify casting upon an opposing party a burden to disprove reliability. The sources of evidence for proving reliability are within the custody of the adducing party, therefore it is with that party that the burden of making out proof should lie.

[60] The witness need not necessarily have personal knowledge of the basic data as entered into the system, nor personal knowledge of the actual physical operation of the data processing equipment, so long as he or she is generally familiar with and accountable for the methods employed by the company in processing the business records. Indeed, the courts seem to be reluctant to require the proponent of computer evidence to call more than one foundational witness.

[61] The purpose in setting out such lists of points is this: specifying detailed criteria greatly increases the probability that the witness used to introduce computer records will be a person with detailed knowledge of the records system as a whole, i.e. detailed criteria make necessary the use of witnesses having supervisory responsibility over the record-keeping system that produced the records that are to become the evidence.

[62] By thus making more necessary the use of witnesses who are held accountable for the record-keeping system, the business record provisions of the evidence statutes that apply to computers can more closely approximate rules requiring expert evidence. Experts, like computer printouts, represent information systems. They are allowed to give opinion evidence and base that evidence upon hearsay because of the integrity of information systems they use. It is not sufficient that the expert witness testify that he obtained the evidence he gives in the "usual and ordinary course" of his business. He puts forth his professional responsibility and opinion in certifying the accuracy of the evidence he gives.[23]*R. v. George*,(1993), 14 Alta.L.R.(3d) 106 (Prov. Ct.). (The same would be true of paper documents; those created with the litigation in mind would not be admissible under the documentary evidence rules.)

[63] The dominant test in Canada as to the admissibility of computer printouts is still the *McMullen* rule: "the nature and quality of the evidence put before the Court has to reflect the facts of the complete record-keeping process."[24] In order to argue which "facts" and how "complete" the foundation evidence for admissibility must be, guidance can be gained from legislation such as the South African and the U.K. Acts because they use that kind of detail in their legislative language.

[64] A more detailed description was contained in the *Police and Criminal Evidence Act, 1984* (U.K.) Section 69 of that Act provides for certificate evidence on the operation of the computer, the contents being spelled out by rules where necessary. It is an offence to make a false statement in such a certificate. The section also contains a discussion of the weight attached to the evidence.

[65] There have been a number of decisions in relation to s. 69 but none provides commentary that would be helpful here, such as commentary on the need for legislative reform or as to the type of generalized or specialized provision desired.[25]*R. v. Minors*, [1989] 1 W.L.R. 441, [1989] 2 All E.R. 208 (C.A.); *R.v. Neville*, [1991] Crim. L.R. 288 (C.A.); *R. v. Spiby* (1990), 91 Cr.App.R. 86 (CA.); *R. v. Burke*,[1990] Crim.L.R. 401 (H.C.); *R. v. Mather*, [1991] Crim.L.R. 285 (C.A.C.D.); *R. v. Robson, Mitchell and Richards*, [1991] Crim.L.R. 362 (H.C.).

The same can be said of the case law in relation to the other computer provisions referred to above. Case law has not been very helpful in the development of the principles of admissibility and weight applicable to computer printouts in particular and business records in general.

[66] The above pieces of legislation appear to accomplish the following effects:

1. They shift the onus of demonstrating the reliability of the record-keeping system which produced the computer printouts sought to be adduced onto the proponent of their admissibility, thus preventing an onus of adducing evidence of unreliability being placed upon the opponent of admissibility merely because the proponent has presented some superficial evidence that the printouts were created in the usual and ordinary course of business, as is the case under our present evidence statutes.

2. They establish criteria that are compatible with computerized record-keeping and replace those of the pre-existing statutory and common law business record exceptions to the hearsay rule that were not.

3. They establish the criteria of admissibility for computer printouts in an authoritative document so as to "occupy the field", thus preventing the caselaw from developing conflicting admissibility criteria or developing criteria only slowly and in a fragmented fashion.

4. They force a meaningful accountability into the foundation evidence, i.e. they have the effect of requiring that the person who supervises the record-keeping or data-processing system that produced the printout that is taken to court, be the witness who supplies the testimony or swears the affidavit that is to be used to gain admissibility and credibility for that printout.

[67] In the United States the Federal Rules of Evidence came into force on July 1, 1975. Their provisions are spelled out in Appendix B. Most states have adopted the Federal Rules or the very similar Uniform Rules of Evidence of 1973. They are not specialized computer provisions although

they do make specific reference to computer-produced records by means of phrases such as "data compilation" and "electronic recording".

[68] The case law has produced very little analysis that is helpful here.[26] It produces a repetition of the requirements of Rule 803(6), reproduced in the Appendix. An overview of the main themes is found in the same Appendix. That Rule refers to the trustworthiness of records in relation to "source of information" and the "method or circumstances of preparation", but without specifying what particular methods or circumstances a court should be considering, and without assigning an onus of proof. In brief, it shares some problems with its Canadian counterparts.

[69] Regardless of the requirements, commentators have found U.S. courts to be liberal in granting admissibility:

[70] It is important to note that the determination of whether, in all circumstances, the records have sufficient reliability to warrant their receipt into evidence is left to the sound discretion of the trial judge. Manycourts take a generous view of Rule 803(6) and construe it to favour admission of a document into evidence rather than exclusion if the document has any probative value at all. The trier of fact can usually identify self-serving or untrustworthy records and discount the weight of the evidence accordingly. [27]

[71] Under the Rules, a trial court rarely excludes an offer of computerized business records or reports not specially prepared for trial. Moreover, courts of appeal almost always uphold a lower court's finding of proper foundation for computerized business records, even when the lower court's finding is questionable. Appellate court opinions offer two rationales for their rubber stamps of approval. First, they grant trial judges broad discretion in admitting evidence. Thus, the party opposing admission must carry the formidable burden of persuading an appellate court that the trial court judge abused her discretion. Second, federal judges define objections to admissibility as arguments about probative value. In practical terms, this means that the opponent is left with a Sisyphean task - arguing that the judge erred in granting any probative

value to the business records and thus that she should not have permitted the jury to consider them at all. Given the context of trial court discretion, the probability of carrying that burden approaches zero.[28]

[72] The shift of the disagreement between the circuits to the domain of probative value can be described as a pragmatic movement to resolve the dilemma raised by the doctrinal confrontation of necessity and reliability - as a reconciliation between the two pre-Rules lines of cases that reflect that dilemma. In particular, the need for computerized business records is served by their easy admissibility, while the issue of system reliability can be joined before the jury under the rubric of probative value. Certainly the trial process calls for pragmatic solutions.[29]

[73] The main criticism of the U.S. caselaw and Rule 803(6) offered by law journal commentary is that admissibility is made too easy for the proponent of the records adduced and objecting is made too difficult for the opponent. In compensation it has been suggested[30] that proof of the reliability of the data processing techniques and equipment used be required under Rule 901(b)(9). Federal rule 901 states in part:

Rule 901. Requirement of Authentication or Identification

(a) General provision. The requirement of authentication or identification as a condition precedent to admissibility is satisfied by evidence sufficient to support a finding that the matter in question is what its proponent claims.

(b) Illustrations. By way of illustration only, and not by way of limitation, the following are examples of authentication or identification conforming with the requirements of this rule: ...

(9) Process or system. Evidence describing a process or system used to produce a result and showing that the process or system produces an accurate result.

[74] The Civil Code of Quebec deals with computerized records of juridical acts, i.e. documents intended to have a legal effect on their makers, such as contacts (Articles 2837 - 2839). The full text is in Appendix B. It allows these records in evidence if they are intelligible and their reliability

guaranteed. It contains a mix of traditional common law rules and rules specific to computers. For example, it refers to the circumstances under which the data were entered, which echoes other Canadian statutes.

[75] It then says that the reliability of the entry of data is presumed to be sufficiently guaranteed "where it is carried out systematically and without gaps and the computerized data are protected against alterations." In other words, evidence on the operation of the computer system is needed. The Code expressly states that a document producing these data may be contested on any grounds, so the opposing party may try any line of attack on the reliability of the electronic record.

[76] On the other hand, it also states that the reliability of documents "drawn up in the ordinary course of business of an enterprise ... is, in particular, presumed to be sufficiently guaranteed". Electronic business records that are not "juridical acts" may well be admitted under this provision, which is part of the rules on hearsay (Article 2870). The weight of any evidence is always left for the trier of fact (Article 2845).

[77] A somewhat different approach to law reform is being taken by the United Nations Commission on International Trade Law (UNCITRAL). Its draft model law on electronic records (mainly focussing on EDI) simply provides that the electronic form of a record shall not affect its admissibility in litigation. It suggests a couple of factors that might go to weight, namely the reliability of the manner in which the record was created, stored or communicated and also the manner in which it was authenticated, if this is relevant. The current draft text is in Appendix B.

[78] In addition, the UNICTRAL draft model law deals with the concept of "original". It supplants the strict concept with a "functional equivalent", i.e. with criteria that a record must fulfil to perform the same functions as does a paper original. The main function is to ensure the integrity of the record.

options for harmonized rules

[79] The main discussion in this section will relate to business records, with some overflow to banking records. Public records will occupy a

smaller section. Rules for microfilm and imaging are also discussed separately.

[80] Four options seem to encompass the main points of discussion: do nothing; make a small gesture to acceptance of electronic formats; create a list of special rules for electronic records; integrate all the provisions of the statutes into a thematically consistent treatment of all documentary evidence. We should consider whether any new rules adopted should affect admissibility or only weight of the record once it is admitted.

1. Do nothing

[81]**In favour:**

* The current rule, basically one of showing actual business reliance on the record, is right. If the creator of the record trusts it, why should courts not trust it, at least to the point of admitting it for consideration?

* Neither judges nor litigators are asking for change in the present law, under which electronic records are normally admitted.

* Businesses, especially financial institutions, have come to expect the open standard of reliance and would be unhappy to have more rules to satisfy to get their records in.

* Listing specific factors to consider may risk impeding changes to technology and thus to business efficiency.

[82]**Against**

* The current rule has several areas of uncertainty that the case-by-case development of the law will not resolve for years.

* Many solicitors have difficulty advising their clients about the proper conduct of their businesses because of uncertainty about the use of electronic records in litigation.

* A very liberal use of electronic evidence may be unfair to someone wishing to attack the reliability of the evidence; the onus of proof of reliability should be on the proponent of evidence not on its opponent.

* Current rules are based on inconsistent statutes and thus create a diversity of law across Canada. Case law is not capable of resolving this in the short run.

* National and industry standards for the proper use of computer technology are widely accepted and do not inspire fear of unduly limiting the technology or systems to which they apply.

2. Adopt a limited, facilitating rule for electronic evidence

description

[83] Such a rule would reflect the UNCITRAL model law mentioned earlier, the full text of whose relevant provisions is in Appendix B. In addition, it should allow parties to contracts to choose their own rules for admissibility and weight in litigation between themselves, subject to contractual defences.

[84]**In favour**

* A limited permissive rule is all that is needed to end a lot of uncertainty about the use of electronic records in court.

* A limited rule is less likely to limit technology than more precise requirements.

* A limited rule will not require detailed proof of the operation of computer systems even when electronic evidence is not seriously disputed.

* The limited rule appears to be the latest international legal standard, that of the United Nations.

[85]**Against**

* The basic fact of admissibility of computer records in general is not in doubt. As a result, an UNICTRAL-type rule adds little or nothing of use to our current law (except the ability of the parties to consent to an evidence rule).

* The limited rule does not resolve many areas of uncertainty discussed earlier in this paper.

3. Add a special list of factors touching electronic evidence

description

[86] These factors would concern practices that should be considered in judging the organization's usual and ordinary course of business and of the circumstances of the making of the records in question. A description of the sources of information for the database would be required. Transactions should be recorded contemporaneously before memory fades. The information going into the database should be routine business information. The reliability of the resulting database could be shown by evidence of business reliance upon it in making business decisions. And there should be some evidence of the reliability of the software used and of the security procedures protecting the organization's record-keeping system. By keeping the list of factors short and basic it will be applicable to small and simple systems as well as large and complex ones. The court and parties could choose to use other factors in addition to those expressly listed if an open ended and permissively inclusive wording were used.

[87] How should such listed factors be left to the courts to be applied? One would not want them applied in the same way to a small office having a single personal computer as to a large mainframe computer installation, or in the same way to proof of a single business letter as to proof of a large complex database. Therefore the applicability of each factor has to be left to the court in regard to each record adduced. The application of each factor would be flexible but would have to be considered in each case. (The list is an adaptation of one in the national standard for electronic imaging, reproduced in Appendix D.)

Records produced by computers may be accepted as original records. In determining the admissibility and weight of records produced by computers regard shall be had to the circumstances of the making of the records including the following factors:

- **Sources of Data and Information --** The sources of data and information recorded in the databases upon which the record is based.

- **Contemporaneous Recording --** Whether the data and information in those databases was recorded in some fashion contemporaneously with, or within a reasonable time after, the events to which such data and information relates (but contemporaneous recording within those databases themselves is not required).

- **Routine Business Data and Information --** Whether the data and information upon which the record is based is of a type that is regularly supplied to the computer during the regular activities of the organization from which the record comes.

- **Data Entry --** Whether the entries into the databases were made in the regular course of business.

- **Business Reliance --** Whether there has been reliance upon those databases in making business decisions within a reasonably short time before or after producing the records sought to be admitted into evidence.

- **Software Reliability --** Whether the computer programs used to produce the output, accurately process the data and information in the databases involved.

- **Security** -- The security features used to guarantee the integrity of the total information or record-keeping system upon which the output is based.

[88] The evidence that these points will produce will vary with each information management or record keeping system. However, a single supervising officer of any well-run information or record-keeping facility should be a sufficient witness. An additional witness might be required for software that is unique to the system if that supervisor cannot testify to its history of reliability. If not, the programmer who wrote it should be available to certify its reliability until it does have a history of reliability.

[89]**In favour**

* The list would allow the court to require the proponent of the records to prove their reliability rather than transferring the onus of proof to the

opponent just because the proponent has provided some superficial evidence as to the records having been made in the usual and ordinary course of business;

* It would permit an analysis of system integrity instead of paper originals;

* It would provide a mechanism for achieving some uniformity in the court decisions as to the factors affecting admissibility and weight;

* It would provide a framework for conducting voir dires as to admissibility;

* It would provide guidance to the parties to proceedings as to the necessary evidence to be marshalled to prove the admissibility and weight of computer-produced records.

* It would provide guidance to business on the proper development and maintenance of electronic record keeping systems and on electronic transactions.

* It would not limit the development of technology or the kind of record keeping used, because the rules apply to information handling, not to the computer systems that handle the information. They do not require specific practices or levels of performance.

[90]**Against**

* Proponents of electronic records might have to submit extensive foundation evidence even when the records were not seriously contested.

* In any event litigation would become more time-consuming and costly to introduce evidence now routinely introduced without these foundations [but is the present easy-to-introduce regime fair to those who want to dispute the evidence?]

* The only real rule needed is that the proponent actually relies on electronic records of the class to be admitted - without demonstrating an actual incident of reliance on the particular records at issue in the litigation.

* An acceptable supplementary rule may be that the records were made for routine business purposes, though not necessarily that they record only routine business events - rather than being prepared with a view to the current litigation, for example.

4. Rewrite all the documentary evidence rules on principles consistent withthe rules for electronic records

description

[91] The statutory rules for all types of documents would be revised on common principles, and rewritten rules on microfilm and imaging would be integrated into them. This possibility was extensively debated in the Uniform Law Conference and law reform bodies in the late 1970s and early 1980s. The essence of these debates and the results at the time are set out in Appendix C.

[92] Differences among traditional business records, computer-produced records, microfilm records, electronically imaged records, and banking records can be dealt with in definitions and special subsections where needed rather than having completely separate provisions for different types of records as at present. Separate provisions have worked so far because creating business or banking records and later microfilming them have been separate distinct functions.

[93] Now, computer technology has integrated the creation of business records and banking records with the use of microfilm and other storage media. If as expected, electronic imaging becomes widely used for both current and archived records, then two sets of separate provisions will frequently have to be used--the imaging/microfilm provisions for the imaging operations, and the business record provisions for the computer operations. Instead, imaged records could be part of the definition of an "original" record in an integrated set of provisions.

[94]**In favour**

* Unified rules would deal comprehensively with all business records and not just computer-produced records;

* Such rules would separate and make clear the three traditional classes of evidentiary issues concerning business

records - best evidence rule, authentication, and hearsay rule issues - and provide detailed provisions concerning them;

* They provide uniform supporting procedural provisions such as notice, necessary witnesses, cross-examination, and production;

* In particular, records involving microfilm and electronic imaging will often involve computer functions that will invoke the computer provisions of the business record provisions. More often than not, both the business record and the imaging/microfilm provisions would be relevant. Therefore a single set of integrated provisions would be helpful.

* The other business record provisions should be uniform across Canada, for similar reasons as the electronic record provisions. Provisions unified in principle would best serve that purpose.

* They are the product of an extensive consultation and law reform process, although not recent.

[95]**Against**

* Unifying the whole field will take too much time and effort, as can be seen from the debates when we tried it last time.

* The rules on paper documents are working well, despite gaps in principle, and they do not need revision.

* If what is needed for electronic records is no rule or a simple permissive rule, then there is no need to revisit all the other provisions to solve this narrow problem or set of problems.

RECOMMENDATION:
(Option 3): THE UNIFORM LAW CONFERENCE SHOULD ADOPT SPECIAL RULES ON ELECTRONIC EVIDENCE.

[96]These special rules can be written in terms consistent with the United Nations work, i.e. show people how to meet the criteria set out in the draft model law. They should so far as possible be the same for banking, other business and public documents. They should also contain provisions on microfilm and imaging of the kind described below. Finally, they should expressly allow private agreements on evidentiary rules to apply to the parties to the agreement.

Supplementary discussion

banking documents

[97] Traditionally, banking documents (in the statutes, the records of financial institutions) have been given easier admission than other business records. Two main reasons appear: first, banks are considered particularly meticulous is keeping their records, as they have to watch other people's money. Second, banking records are often used in litigation to which the bank is not a party. As a result, banks face the risk of having many of their staff or original records tied up in lawsuits that do not involve them. Therefore, both the common law (in some jurisdictions) and statutes (in most jurisdictions) made special rules to allow records and copies or records to be admissible.

[98] Do the same considerations apply to electronic records? Should the bank's computer systems operators have to testify in all sorts of lawsuits to which the bank is not a party, to demonstrate the reliability of the records? Or should the apparently broad ruling in *Bell and Bruce* be allowed to stand untouched, at least for financial institutions, if not for all business records, namely that the creator's own reliance was a sufficient guarantee of reliability of the record to allow its admission?

public documents

[99] Public documents have had favourable treatment in the courts for similar reasons as bank documents, plus a general presumption of regularity of public acts. Records are routinely prepared by public bodies for official purposes, and this has been widely recognized. In addition, copies of public documents are easily admitted; the "best evidence" rule

that requires originals where possible does not apply to public documents at all.[31]

[100] It is arguable that public computers may be subject to the same weaknesses as private computers. While common law relics of the business records test like the duty to prepare the record may not be relevant, other tests of reliability might be applicable. On the other hand, perhaps admissibility should be more easily granted to such records, leaving their weight to be attacked once they are admitted.

microfilm rules

[101] The microfilm provisions in evidence statutes are traditionally referred to as photographic document provisions.[32] They should be amended to include electronic imaging[33] and other computer processes applied to both microfilm and electronic imaging.

[102] Second, all retention periods for original records should be removed, such as the six year retention period that is in most of the photographic document provisions in the provincial Evidence Acts.[34] They specify the time for which paper original records are to be kept before destruction. (These rules do not apply to public documents.[35])

[103] Third, these provisions should be made applicable to all business and government organizations. For example, the definitions of "government" and "corporation" in the uniform statute, as reflected at present in s. 31 of the *Canada Evidence Act* for example, which limit the operation of that section to federal and provincial governments and a select group of business organizations, should be replaced with a comprehensive definition of "business" as in s. 30, the business record provision, so that s. 31 is available to all business and government organizations.

[104] Fourth, a copy from the resulting microfilm or computer record should be stated to have the same legal status as the original paper record. Therefore, the original paper record should be destroyed so as give its imaged replacement an equal authority.

[105] As to electronic imaging, three states, Missouri, Louisiana and Virginia, have recently amended their microfilm laws to include, "electronic transfer to other material using electronic processes", and "electronic digitizing process capable of reproducing an unalterable image of the original source document", and "copies from optical disks."

[106] The following provision is suggested to replace the operative parts of the existing provisions:

Where a record of any business or government organization is photographed, microphotographed, or transferred to other material using photographic, optical or electronic processes,

(a) in the course of an established practice in order to keep a permanent record thereof; and

(b) the process accurately reproduces and perpetuates the original record in sufficient detail and clarity; and

(c) the original record is destroyed by or in the presence of such person or of one or more employees or delivered to another person in the ordinary course of business, or lost;

a copy of the resulting record is as admissible and has the same probative value as the original record.

In determining whether the process sufficiently reproduces and perpetuates the original record in sufficient detail and clarity regard may be had to national standards prepared by Canadian General Standards Board and approved by the Standards Council of Canada applicable to microfilm and electronic images.

civil and criminal evidence

[107] The rules proposed here are intended to apply equally to civil and criminal litigation. Two main distinctions appear between these types of action, and neither is relevant to the admissibility or weight of electronic evidence. First, in civil actions the parties may have consented in advance to the admissibility of certain kinds of evidence, including hearsay, or to the use of certain kinds of foundation evidence. Second, in criminal

actions the records sought to be adduced are often records created by the opposing side, as when the Crown wants to use records of an accused business on a fraud charge. The accused is not personally compellable to account for the electronic records, though a systems operator for the accused would be.

APPENDIX A - Current Canadian statutes

The Business Record Provisions in the Evidence Acts

[108] The federal business record provision, s. 30 of the *Canada Evidence Act*, R.S.C. 1985, c. C-5, uses the common "usual and ordinary course of business" test for admissibility as follows:

30. (1) Where oral evidence in respect of a matter would be admissible in a legal proceeding, a record made in the usual and ordinary course of business that contains information in respect of that matter is admissible in evidence under this section in the legal proceeding upon production of the record.

[109] That test appears to have been purposefully left undefined so as to be capable of a subjective interpretation to suit each business organization to which it is applied. As to the word "matter" it is still undecided whether it would include statements of opinion.[36]

[110] The other commonly used test in the Evidence Acts, "the circumstances of the making of the record", is made applicable to both admissibility and weight in s. 30 by subsection 30(6)[37], but the desired or undesired circumstances are also not defined:

(6) For the purpose of determining whether any provision of this section applies, or for the purpose of determining the probative value, if any, to be given to information contained in any record received in evidence under this section, the court may, upon production of any record, examine the record, receive any evidence in respect thereof given orally or by affidavit including evidence as to the circumstances in which the information contained in the record was written, recorded, stored or

reproduced, and draw any reasonable inference from the form or content of the record.

[111] This provision is capable of the interpretation that any particular "circumstance" could justify exclusion of the records adduced. It is worded so that the "circumstances of the making of the record" can be considered in relation to whether any part of s. 30 applies including the admissibility provisions of subsection 30(1). It is however arguable that the particular circumstances to be considered should be listed. That is why the imaging standard suggests a list of points by which to prepare to prove the admissibility and weight of computer-produced records.[38] Such a listing of factors should be within the business record provision such as s. 30 itself.

[112] Subsection 30(6) is the dominant or overriding provision of s. 30. It is backed up by an unusual provision in s. 30(9) that allows examination or cross-examination by either party:

(9) Subject to section 4 [competency and compellability of accused and spouse as witnesses], any person who has or may reasonably be expected to have knowledge of the making or contents of any record produced or received in evidence under this section may, with leave of the court, be examined or cross-examined thereon by any party to the legal proceeding.

[113] These provisions do not expressly assign the onus of proof of such circumstances to the proponent of admissibility. Because of the complexity and variety of computerized record-keeping, the onus of proving such "circumstances of the making" of computer-produced records should fall upon the proponent of admissibility. That should mean that the usual simplistic testimony as to records made in the "usual and ordinary course of business", without a detailed description of how they are in fact made and kept, should not be enough to gain admissibility. But in practice, it is. Therefore, any added or amended provision for computer-produced records should expressly require proof of specific factors in relation to their making and keeping.

[114] The nature of a s. 30 type provision is to let the court determine what is an adequate record-keeping system and to choose its own tests for making that determination in relation to admissibility and weight. By laying down only the very general tests in subsections 30(1) and 30(6), s. 30 gives the court complete flexibility in determining admissibility and weight. The disadvantages of such a provision are the uncertainty the litigant faces as to how s. 30 will be applied, meaning uncertainty as to what evidence to marshall for court, inconsistent court decisions, and court decisions that bring back the old common law requirements it replaced.

[115] In contrast, the government and public document provisions are merely best evidence rule provisions, i.e. the purpose is to make admissible copies of government records. The method of making and keeping the records is left to the government department involved. It is not examined by the court beyond receiving some evidence that the records were made in "usual and ordinary course of business." This rule could be maintained for public documents only on the principle that public computers are inherently reliable, or presumed to be reliable enough that the onus of showing the contrary should lie on the person asserting it.

[116] For the business records provisions, it would be better to list the factors of record-keeping the court is to consider in its determinations of admissibility and weight. That would put litigants on notice as to the evidence to be marshalled, make the determination of admissibility and weight more efficient, and give authoritative guidance to the business community as to what the law of evidence considers to be the most important functions of making and keeping computer-produced records.[39] That is to say, in relation to computer-produced records the business record provision would require evidence on such specific factors as the sources of information in the database that produced the business records in question, the entry procedures for that information, the compatibility of that information with the business's usual and ordinary course of business, and business reliance upon the database in making business decisions.

[117] The British Columbia, Manitoba, Nova Scotia, Ontario and Saskatchewan Evidence Acts use a double "usual and ordinary course of business" test. For example, the Ontario Evidence Act, R.S.O. 1990 c.E.23, states:

35. (2) Any writing or record made of any act, transaction, occurrence or event is admissible as evidence of such act, transaction, occurrence or event if made in the usual and ordinary course of any business and if it was in the usual and ordinary course of such business to make such writing or record at the time of such act, transaction, occurrence or event or within a reasonable time thereafter.

[118] Opinions could not be included in such business records.[40] (Section 30 of the Canada Evidence Act might allow opinions in admissible business records.) The courts seem to have interpreted the double phrase as giving the same result as though it were a single phrase.[41] The original intention of the double phrase was to require not only the making of the record but also the type of record made to be within the usual and ordinary course of the originator's business.[42]

[19] The *Prince Edward Island Evidence Act*, R.S.P.E.I. 1988, c.E-11, like the federal provision, uses a single phrase:

32. (2) Any writing or record made of any act, transaction, occurrence or event is admissible as evidence of that act, transaction, occurrence or event if made in the usual and ordinary course of any business.

[120] It does not require contemporaneity of recording, as do the British Columbia, Manitoba, Nova Scotia, Ontario and Saskatchewan provisions, "at the time of such act, transaction, occurrence or event or within a reasonable time thereafter." Nor is there such an express contemporaneity requirement in the federal provision. However one could be introduced as part of the required "usual and ordinary course of business."

[121] But should it? If that phrase is to be given meaning by the usual and ordinary course of business of the business organization from which the records come, then contemporaneous recording of transactions will be

required only if that was in fact the usual practice. But if the test is objective, then a fixed contemporaneity requirement could be read into "the usual and ordinary course of business." However, the theory of the test suggests that the meaning should be subjective. That is, businesses will make accurate records in accordance with their usual practices in order to maximize profit, such that the interest of the business is compatible with purposes of the law in obtaining accurate evidence. Therefore contemporaneity is not necessarily part of the "usual and ordinary course of business" test of admissibility.

[122] In short, some business record provisions require contemporaneity of recording between transactions and the making of records and some do not, or leave to the court as a matter of interpretation whether to read such a requirement into the provision.

[123] All six of these Evidence Acts limit the "circumstances of the making of the record" to weight by expressly preventing them from affecting admissibility. For example, the *Ontario Evidence Act* states:

35. (4) The circumstances of the making of such a writing or record, including lack of personal knowledge by the maker, may be shown to affect its weight, but such circumstances do not affect its admissibility.

[124] This same provision is in the Prince Edward Island statute, meaning that contemporaneity of recording can apply only to weight, whereas in other provinces it applies to admissibility.

[125] Subsection 30(6) of the Canada Evidence Act allows such "circumstances" to be applied to admissibility. Therefore "the circumstances of the making of the record" test can have a different meaning and apply to different issues from one jurisdiction to the next.

[126] The *New Brunswick Evidence Act*, R.S.N.B. 1973, c. E-11, uses a different test for admissibility:

49. A record or entry of an act, condition or event made in the regular course of a business is, in so far as relevant, admissible as evidence of the matters stated therein if the court is satisfied as to its identity and that it was made at or near the time of the act, condition or event.

[127] Thus the "circumstances of the making of the record" would play no part as to admissibility other than the requirement for contemporaneous making in the regular course of a business. And like the other provincial provisions, it contains no words that would allow opinions to be in admissible business records, unlike the word "matter" that is in s. 30(1) of the federal provision.

[128] The new Civil Code of Quebec makes specific reference to computer-produced records. As a result, its provisions are set out in Appendix B among the other statutes that deal expressly with this issue. It does however contain a brief general statement on business records as an exception to the hearsay rule. Article 2870 speaks of documents "drawn up in the ordinary course of business of an enterprise", whose reliability is "presumed to be sufficiently guaranteed."

[129] The Northwest Territories, R.S.N.W.T. 1988 c. E-8, s47; and Yukon, R.S.Y. 1986, c.57, s. 37, use the same business records provision, which imposes a more detailed and onerous test of admissibility than is found in the provincial legislation:

47. (1) In this section "business" includes every kind of business, occupation or calling, whether carried on for profit or not.

(2) A record in any business of an act, condition or event is, in so far as relevant, admissible in evidence if

(a) the custodian of the record or other qualified person testifies to its identity and the mode of its preparation, and to its having been made in the usual and ordinary course of business, at or near the time of the act, condition or event, and

(b) in the opinion of the Court, the sources of information, method and time of preparation were such as to justify its admission.

[130] Thus in addition to "the usual and ordinary course of business", certain "circumstances of the making of the record" are expressly linked to admissibility. And the onus of proving such circumstances is cast upon the proponent of admissibility because the court must be satisfied as to their adequacy. Such circumstances are contemporaneity, the sources of

information, and the method and time of preparation. The required standard for the last three is left to the opinion of the court, i.e. the provision does not specify the sources of information, the method of preparation, or the time of preparation. That would allow flexibility so that different record-keeping systems and different groups of proffered records can be subjected to requirements that vary with their importance and complexity.

[131] We see that Canadian business record provisions present a collection of diverse wordings and issues.

banking record provisions

[132] There have been provisions for bank records in evidence statutes for several decades because bank records are used in so many proceedings in which banks are not one of the parties. Section 29 of the *Canada Evidence Act* is typical. Its admissibility provisions state:

29. (1) Subject to this section, a copy of any entry in any book or record kept in any financial institution shall in all legal proceedings be admitted in evidence as proof, in the absence of evidence to the contrary, of the entry and of the matters, transactions and accounts therein recorded.

(2) A copy of an entry in the book or record described in subsection (1) shall not be admitted in evidence under this section unless it is first proved that the book or record was, at the time of the making of the entry, one of the ordinary books or records of the financial institution, that the entry was made in the usual and ordinary course of business, that the book or record is in the custody or control of the financial institution and that the copy is a true copy thereof, and such proof may be given orally or by the manager or accountant of the financial institution and may be given orally or by affidavit sworn before any commissioner or other person authorized to take affidavits.

[133] This provision expressly makes a copy admissible. Where it is intended to allow a copy to be used instead of the original record it is necessary to so state because of the best evidence rule's general demand for an original. An acceptable original is one made at or near the time of

the events it records. The best evidence rule states that proof of a record must be made by means of the unaltered original record unless the absence or alteration of that original is adequately explained.

microfilm provisions

[134] The Ontario provision is typical of the provincial provisions. Its admissibility subsections state:

34. (2) Where a bill of exchange , promissory note, cheque, receipt, instrument, document, plan or a record or book or entry therein kept or held by a person,

(a) is photographed in the course of an established practice of such person of photographing objects of the same or a similar class in order to keep a permanent record thereof; and

(b) is destroyed by or in the presence of such person or of one or more of the person's employees or delivered to another person in the ordinary course of business or lost,

a print from the photographic film is admissible in evidence in all cases and for all purposes for which the object photographed would have been admissible.

(3) Where a bill of exchange, promissory note, cheque, receipt, instrument, agreement or other executed or signed document was so destroyed before the expiration of six years from,

(a) the date when in the ordinary course of business either the object or the matter to which it related ceased to be treated as current by the person having custody or control of the object; or

(b) the date of receipt by the person having custody or control of the object of notice in writing of a claim in respect of the object of notice in writing of a claim in respect of the object or matter prior to the destruction of the object,

whichever is the later date, the court may refuse to admit in evidence under the section a print from a photographic film of the object.

[135]The federal provision is s. 31 of the *Canada Evidence Act*:

31. (2) A print, whether enlarged or not, from any photographic film of

(a) an entry in any book or record kept by any government or corporation and destroyed, lost or delivered to a customer after the film was taken,

(b) any bill of exchange, promissory note, cheque, receipt, instrument or document held by any government or corporation and destroyed, lost or delivered to a customer after the film was taken, or

(c) any record, document, plan, book or paper belonging to or deposited with any government or corporation,

is admissibile in evidence in all cases in which and for all purposes for which the object photographed would have been admitted on proof that

(d) while the book, record, bill of exchange, promissory note, cheque, receipt, instrument or document, plan, book or paper was in the custody or control of the government or corporation, the photographic film was taken thereof in order to keep a permanent record thereof, and

(e) the object photographed was subsequently destroyed by or in the presence of one or more of the employees of the government or corporation, or was lost or was delivered to a customer.

[136] The new Civil Code of Quebec states:

2840 Proof of a document a reproduction of which is in the possession of the State or of a legal person established in the public interest or for a private interest and which has been reproduced in order to keep permanent proof thereof may be made by the filing of a copy of the reproduction or an extract that is sufficient to identify it, together with a declaration attesting that the reproduction complies with the rules prescribed in this section.

A certified true copy or extract of the declaration may be received in evidence with the same force as the original.

2841 In order for a reproduction to make the same proof of the content of a document as the original, it is necessary that it accurately reproduce the

original, be an indelible picture of it and allow the place and date of reproduction to be determined.

It is also necessary that the reproduction of the original have been carried out by a person specially authorized by the legal person or by the Keeper of the Archives nationales du Québec.

APPENDIX B - Statutes on Electronic Records

[137]The Civil Evidence Act, 1968 (U.K. 1968 c.64)

Section 5. Admissibility of statements produced by computers

(1) In any civil proceedings a statement contained in a document produced by a computer shall, subject to rules of court, be admissible as evidence of any fact stated therein of which direct oral evidence would be admissible, if it is shown that the conditions mentioned in subsection (2) below are satisfied in relation to the statement and computer in question.

(2) The said conditions are--

(a) that the document containing the statement was produced by the computer during a period over which the computer was used regularly to store or process information for the purposes of any activities regularly carried on over that period, whether for profit or not, by any body, whether corporate or not, or by any individual;

(b) that over that period there was regularly supplied to the computer in the ordinary course of those activities information of the kind contained in the statement or of the kind from which the information so contained is derived;

(c) that throughout the material part of that period the computer was operating properly or, if not, that any respect in which it was not operating properly or was out of operation during that part of that period was not such as to affect the production of the document or the accuracy of its contents; and

(d) that the information contained in the statement reproduces or is derived from information supplied to the computer in the ordinary course of those activities.

[138]South Australia Evidence Act, 1929 - 1976

Section 59a. In this Part, unless the contrary appears-

"computer" means a device that is by electronic, electro-mechanical, mechanical or other means capable of recording and processing data according to mathematical and logical rules and of reproducing that data or mathematical or logical consequences thereof;

"computer output" or "output" means a statement or representation (whether in written, *pictoral, graphical or other form) purporting to be a statement or representation of fact--

(a) produced by a computer; or

(b) accurately translated from a statement or representation so produced:

"data" means a statement or representation of fact that has been transcribed by methods, the accuracy of which is verifiable, into the form appropriate to the computer into which it is, or is to be, introduced.

Section 59b (1) Subject to this section, computer output shall be admissible as evidence in any civil proceedings.

(2) The court must be satisfied-

(a) that the computer is correctly programmed and regularly used to produced output of the same kind as that tendered in evidence pursuant to this section;

(b) that the data from which the output by the computer is systematically prepared upon the basis of information that would normally be acceptable in a court of law as evidence of the statements or representations contained in or constituted by the output;

(c) that, in the case of the output tendered in evidence, there is, upon the evidence before the court, no reasonable cause to suspect any departure from the system, or any error in the preparation of the data;

(d) that the computer has not, during a period extending from the time of the introduction of the data to that of the production of the output, been subject to a malfunction that might reasonably be expected to affect the accuracy of the output;

(e) that during that period there have been no alterations to the mechanisms or processes of the computer that might reasonably be expected adversely to affect the accuracy of the output;

(f) that records have been kept by a responsible person in charge of the computer of alterations to the mechanism and processes of the computer during that period; and

(g) that there is no reasonable cause to believe that the accuracy or validity of the output has been adversely affected by the use of any improper process or procedure or by inadequate safeguards in the use of the computer.

[139][1977] Washington Law Quarterly 59 at 91

A computer printout recording a business act, event, or transaction shall be admissible into evidence to prove the truth of the matters asserted therein provided that the offering party shows:

(1) that the input procedures conform to standard practices in the industry; and, the entries are made in the regular course of business, and

(2) that he relied on the data base in making a business decision(s), within a reasonably short period of time before or after producing the printout sought to be introduced at trial, and

(3) by expert testimony that the processing program reliably and accurately processes the data in the data base.

[140]South African Computer Evidence Act, 1983 (Government Gazette, May 11, 1983; No. 8100 No.2, Act No. 57, 1983)

The preamble to the Act states: "To provide for the admissibility in civil proceedings of evidence generated by computers; and for matters connected therewith". Its provisions allow for the admissibility of "authenticated computer printouts", which is a computer printout

accompanied by an "authenticating affidavit". The authenticating affidavit is to be deposed to by some person who is qualified to give the testimony it contains by reason of

(a) knowledge and experience of computers and of the particular system used by the computer in question;

(b) examination of all relevant records and facts concerning the operation of the computer and the data and instructions supplied to it.

The authenticating affidavit is to contain the following pieces of foundation evidence in relation to the issue of admissibility:

1. A description in general terms of the nature, extent and sources of the data and instructions supplied to the computer, and the purpose and effect of its processing by the computer;

2. A certification that the computer was correctly and completely supplied with data and instructions appropriate to and sufficient for the purpose for which the information recorded in the computer printout was produced;

3. A certification that the computer was unaffected in its operation by any malfunction, interference, disturbance or interruption that might have had a bearing on such information or its reliability;

4. A certification that no reason exists to doubt the truth or reliability of any information recorded in or result reflected by the computer printout;

5. A verification of the records and facts examined by the deponent to the authenticating affidavit in order to qualify himself for the testimony it contains.

[141]Fenwick and Davidson, "Use of Computerized Business Records as Evidence", (1978), 19 *Jurimetrics Journal* 9.

A custodian of computer-kept records should be prepared to testify to:

(1) the reliability of the data processing equipment used to keep the records and produce the printout;

(2) the manner in which the basic data was initially entered into the system (e.g. cards, teletype, etc.);

(3) that the data was so entered in the regular course of business;

(4) that the data was entered within a reasonable time after the events recorded by persons having personal knowledge of the events;

(5) the measures taken to insure the accuracy of the data as entered;

(6) the method of storing the data (e.g. magnetic tape) and the safety precautions taken to prevent loss of the data while in storage;

(7) the reliability of the computer programs and formulas used to process the data;

(8) the measures taken to verify the proper operation and accuracy of these programs and formulas;

(9) the time and mode of preparation of the printouts.

[142]The Police and Criminal Evidence Act, 1984 (U.K.) (as amended by the Criminal Justice Act 1988.)

69. (1) In any proceedings, a statement in a document produced by a computer shall not be admissible as evidence of any fact stated therein unless it is shown -

(a) that there are no reasonable grounds for believing that the statement is inaccurate because of improper use of the computer;

(b) that at all material times the computer was operating properly, or if not, that any respect in which it was not operating properly or was out of operation was not such as to affect the production of the document or the accuracy of its contents; and

(c) that any relevant conditions specified in rules of court under subsection (2) below are satisfied.

(2) Provision may be made by rules of court requiring that in any proceedings where it is desired to give a statement in evidence by virtue of this section such information concerning the statement as may be

required by the rules shall be provided in such form and at such time as may be so required.

PART 11PROVISIONS SUPPLEMENTARY TO SECTION 69

8. In any proceedings where it is desired to give a statement in evidence in accordance with section 69 above, a certificate

(a) identifying the document containing the statement and describing the manner in which it was produced;

(b) giving such particulars of any device involved in the production of that document as may be appropriate for the purpose of showing that the document was produced by a computer;

(c) dealing with any of the matters mentioned in subsection (1) of section 69 above; and

(d) purporting to be signed by a person occupying a responsible position in relation to the operation of the computer,

shall be evidence of anything stated in it; and for the purposes of this paragraph it shall be sufficient for a matter to be stated to the best of the knowledge and belief of the person stating it.

9. Notwithstanding paragraph 8 above, a court may require oral evidence to be given of anything of which evidence could be given by a certificate under that paragraph.

10. Any person who in a certificate tendered under paragraph 8 above in a magistrates' court, the Crown Court or the Court of Appeal makes a statement which he knows to be false or does not believe to be true shall be guilty of an offence and liable

(a) on conviction on indictment to imprisonment for a term not exceeding two years or to a fine or to both;

(b) on summary conviction to imprisonment for a term not exceeding six months or to a fine not exceeding the statutory maximum (as defined in section 14 of the Criminal Justice Act 1982) or to both.

11. In estimating the weight, if any to be attached to a statement regard shall be had to all the circumstances from which any inference can reasonably be drawn as to the accuracy or otherwise of the statement and, in particular -

(a) to the question whether or not the information which the information contained in the statement reproduces or is derived from was supplied to the relevant computer, or recorded for the purpose of being supplied to it, contemporaneously with the occurrence or existence of the facts dealt with in that information; and

(b) to the question whether or not any person concerned with the supply of information to that computer, or with the operation of that computer or any equipment by means of which the document containing the statement was produced by it, had any incentive to conceal or misrepresent the facts.

12. For the purposes of paragraph 11 above information shall be taken to be supplied to a computer whether it is supplied directly or (with or without human intervention) by means of any appropriate equipment.

In addition to s. 69, ss. 23 and 24 of the *Criminal Justice Act 1988* would apply if the computer record is tendered for a hearsay purpose, i.e. the truth of its contents:

23. (1) Subject

(a) to subsection (4) below;

(b) to paragraph 1A of Schedule 2 to the *Criminal Appeal Act 1968* (evidence given orally at original trial to be given orally at retrial); and

(c) to section 69 of the *Police and Criminal Evidence Act 1984* (evidence of computer records),

a statement made by a person in a document shall be admissible in criminal proceedings as evidence of any fact of which direct oral evidence by him would be admissible if-

(i) the requirements of one of the paragraphs of subsection (2) below are satisfied; or

(ii) the requirements of subsection (3) below are satisfied.

(2) The requirements mentioned in subsection (1)(i) above are-

(a) that the person who made the statement is dead or by reason of his bodily or mental condition **unfit** to attend as a witness;

(b) that-

(i) the person who made the statement is outside the United Kingdom; and

(ii) it is not reasonably practicable to secure his attendance; or

(c) that all reasonable steps have been taken to find the person who made the statement, but that he cannot be found.

(3) The requirements mentioned in subsection (1)(ii) above are-

(a) that the statement was made to a police officer or some other person charged with the duty of investigating offences or charging offenders; and

(b) that the person who made it does not give oral evidence through fear or because he is kept out of the way.

(4) Subsection (1) above does not render admissible a confession made by an accused person that would not be admissible under section 76 of the *Police and Criminal Evidence Act 1984*.

24. (1) Subject-

(a) to subsections (3) and (4) below;

(b) to paragraph IA of Schedule 2 of the *Criminal Appeal Act 1968*; and

(c) to section 69 of the *Police and Criminal Evidence Act 1984*, a statement in a document shall be admissible in criminal proceedings as evidence of any fact of which direct oral evidence would be admissible, if the following conditions are satisfied-

(i) the document was created or received by a person in the course of a trade, business, profession or other occupation, or as the holder of a paid or unpaid office; and

(ii) the information contained in the document was supplied by a person (whether or not the maker of the statement) who had, or may reasonably be supposed to have had, personal knowledge of the matters dealt with.

(2) Subsection (1) above applies whether the information contained in the document was supplied directly or indirectly but, if it was supplied indirectly, only if each person through whom it was supplied received it-

(a) in the course of a trade, business, profession or other occupation; or

(b) as the holder of a paid or unpaid office.

(3) Subsection (1) above does not render admissible a confession made by an accused person that would not be admissible under section 76 of the *Police and Criminal Evidence Act 1984*.

(4) A statement prepared otherwise than in accordance with section 29 below or an order under paragraph 6 of schedule 13 of this Act or under section 30 or 31 below for the purposes-

(a) of pending or contemplated criminal proceedings; or

(b) of a criminal investigation, shall not be admissible by virtue of subsection (1) above unless

(i) the requirements of one of the paragraphs of subsection (2) of section 23 above are satisfied; or

(ii) the requirements of subsection (3) of that section are satisfied; or

(iii) the person who made the statement cannot reasonably be expected (having regard to the time which has elapsed since he made the statement and to all the circumstances) to have any recollection of the matters dealt with in the statement.

[143]Federal Rules of Evidence (U.S.A. 1975)

Rule 803. Hearsay Exceptions: Availability of Declarant Immaterial

The following are not excluded by the hearsay rule, even though the declarant is available as a witness:

(6) Records of regularly conducted activity.

A memorandum, report, record, or data compilation, in any form, of acts, events, conditions, opinions, or diagnoses, made at or near the time by, or from information transmitted by, a person with knowledge, if kept in the course of a regularly conducted business activity, and if it was the regular practice of that business activity to make the memorandum, report, record, or data compilation, all as shown by the testimony of the custodian or other qualified witness, unless the source of information or the method or circumstances of preparation indicate lack of trustworthiness. The term "business" as used in this paragraph includes business, institution, association, profession, occupation, and calling of every kind, whether or not conducted for profit.

Rule 1001 Definitions

For purposes of this article the following definitions are applicable:

(1) **Writings and recordings**. "Writing" and "recordings" consist of letters, words, or numbers, or their equivalent, set down by handwriting, typewriting, printing, photostating, photographing, magnetic impulse, mechanical or electronic recording, or other form of data compilation.

(2) **Photographs**. "Photographs" include still photographs, X-ray films, video tapes, and motion pictures.

(3) **Original**. An "original" of a writing or recording is the writing or recording itself or any counterpart intended to have the same effect by a person executing or issuing it. An "original" of a photograph includes the negative or any print therefrom. If data are stored in a computer or similar device, any printout or other output readable by sight shown to reflect the data accurately, is an "original".

(4) **Duplicate**. A "duplicate" is a counterpart produced by the same impression as the original, or from the same matrix, or by means of photography, including enlargements and miniatures, or by mechanical or electronic re-recording, or by chemical reproduction, or by other equivalent techniques which accurately reproduces the original.

Rule 1002. Requirement of Original

To prove the content of a writing, recording, or photograph, the original writing, recording, or photograph is required, except as otherwise provided in these rules or by Act of Congress.

Rule 1003. Admissibility of Duplicates

A duplicate is admissible to the same extent as an original unless (1)a genuine question is raised as to the authenticity of the original or (2) in the circumstances it would be unfair to admit the duplicate in lieu of the original.

Rule 1004. Admissibility of Other Evidence of Contents

The original is not required, and other evidence of the contents of a writing, recording or photograph is admissible if-

(1) **Originals lost or destroyed**. All originals are lost or have been destroyed, unless the proponent lost or destroyed them in bad faith; or

(2) **Original not obtainable**. No original can be obtained by any available judicial process or procedure; or

(3) **Original in possession of opponent**.

At a time when an original was under the control of the party against whom offered, he was put on notice, by the pleadings or otherwise, that the contents would be a subject of proof at the hearing, and he does not produce the original at the hearing; or (4) **Collateral matters**. The writing, recording, or photograph is not closely related to a controlling issue.

[144] Before the Federal Rules of Evidence were enacted, the following often-quoted set of guidelines for the admissibility of computer-produced records was produced in *King v. ex rel Murdock Acceptance Corp*, 222 So.2d. 393 at 398, (1969) (Miss. Sup. Ct) -

1. the electronic computing equipment is recognized as standard equipment;

2. the entries are made in the regular course of business at or reasonably near the time of the happening of the event recorded; and

3. the foundation testimony satisfies the court that the source of information, method and time of preparation were such as to indicate its trustworthiness and justify its admission.

[145] In 1977 more detailed requirements came from *Monarch Federal Savings and Loan Association v. Genser*, 383 A.2d 475 at 487-88, 1977 (N.J.Superior Ct, Ch. Div.)

1. the competency of the computer operators;

2. the type of computer used and its acceptance in the field as standard and efficient equipment;

3. the procedure for the input and out of information, including controls, tests, and checks for accuracy and reliability;

4. the mechanical operations of the machine; and

5. the meaning and identity of the records themselves.

[146] More recently commentators have stated that less emphasis should be placed on the standard nature of the equipment used. For example:

In fact, computer science has developed to the extent that courts can and should place less emphasis on the hardware. Whether a machine is "standard" is no longer the issue. Indeed, Illinois courts presently take judicial notice of the reliability of computerized machines. The trend in Illinois clearly indicates a shift in the burden to show the unreliability of a computer system. Greater emphasis, however, must be placed not only on the trustworthiness element of business practice, but also on the accuracy of the data input and the software as foundational requirements. The primary focus of the courts in evaluating a computer generated record should be the software programs that produced the record and the input procedures to show the transaction. Errors in programs ("bugs") or in data input can lead to massive error and insurmountable problems that are almost impossible to detect.

(Lynch and Brenson, "Computer Generated Evidence: The Impact of Computer Technology on the Traditional Rules of Evidence", (1989) 20 *Loyola University Law Jl* 919, at 929.)

[147] A more recent review of case law suggests the following requirements:

A foundation for the admission of a computer printout should include, through the testimony of the custodian of the records on which the printout is based, or through the testimony of some other person who is familiar with the manner in which the records were processed and maintained, proof of

- the reliability of the computer equipment used to keep the records and produce the printout.

- the manner in which the basic data was initially entered into the computerized record-keeping system.

- the entrance of the data in the regular course of business.

- the entrance of the data within a reasonable time after the events recorded by persons having personal knowledge of the events.

- the measures taken to ensure the accuracy of the data entered.

- the method of storing the data and the precautions taken to prevent its loss while in storage.

- the reliability of the computer programs used to process the data.

- the measures taken to verify the accuracy of the programs.

- the time and mode of preparation of the printout.

In opposing the admission into evidence of computerized private business records, counsel should draw the court's attention to any omissions from, or weaknesses in, the suggested list of foundation proofs. Counsel is cautioned to be certain to raise at trial any objection to the foundation for admission, whether the objection is based upon the proponent's failure to show that the record was in fact a business record, or whether it is based upon the proponent's failure to establish the reliability of the computer and the procedures by which the data was entered and retrieved.

(Zupanec, D. "Admissibility of Computerized Private Business Records", (1990), 7 A.L.R. 4th 8 at 17.)

[148]Civil Code of Quebec

SECTION VI COMPUTERIZED RECORDS

2837. Where the data respecting a juridical act are entered on a computer system, the document reproducing them makes proof of the content of the act if it is intelligible and if its reliability is sufficiently guaranteed.

To assess the quality of the document, the court shall take into account the circumstances under which the data were entered and the document was reproduced.

2838. The reliability of the entry of the data of a juridical act on a computer system is presumed to be sufficiently guaranteed where it is carried out systematically and without gaps and the computerized data are protected against alterations. The same presumption is made in favour of third persons where the data were entered by an enterprise.

2839. A document which produces the data of a computerized juridical act may be contested on any grounds.

2870. The reliability of documents drawn up in the ordinary course of business of an enterprise, of documents entered in a register kept as required by law and of spontaneous and contemporaneous statements concerning the occurrence of fact is, in particular, presumed to be sufficiently guaranteed.

[149] Therefore, these provisions require proof of these specific factors: intelligibility, reliability, the circumstances under which the data were entered, the circumstances under which the document was reproduced, systematic entry of data, and protection of data against alterations. Also "the ordinary course of business of an enterprise" is applied to create a presumption in regard to the reliability of documents other than juridical acts.

[150]United Nations Commission on International Trade Law

DRAFT Model Law on Electronic Records

[U.N. documents A/CN.9/WG.IV/WP.60 and A/CN.9/390]

Article 8: Originals

(1) Where a rule of law requires information to be presented in the form of an original record, or provides for certain consequences if it is not, that requirement shall be satisfied in relation to a data record containing the requisite information if:

(a) that information is displayed to the person to whom it is to be presented; and

(b) there exists a reliable assurance as to the integrity of the information between the time the originator first composed the information in its final form, as a data record or as a record of any other kind, and the time that the information is displayed.

(2) Where any question is raised as to whether paragraph (1)(b) is satisfied:

(a) the criteria for assessing integrity are whether the information has remained complete and, apart from the addition of any endorsement, unaltered; and

(b) the standard of reliability required is to be assessed in the light of the purpose for which the relevant record was made and all the circumstances.

Article 9: Evidence

(1) In any legal proceeding, nothing in the application of the rules of evidence shall apply so as to prevent the admission of a data record in evidence

(a) solely on the grounds that it is a data record; or

(b) if it is the best evidence that the person adducing it could reasonably be expected to obtain, solely on the grounds that it is not an original document.

(2) Information presented in the form of a data record shall be given due evidential weight. In assessing the evidential weight of a data record, regard shall be had to the reliability of the manner in which the data

record was created, stored or communicated, and where relevant, the reliability of the manner in which the information was authenticated.

APPENDIX C - Law Reform in Canada

[151] Because a very large volume of intensive law reform research and consultation was done in the 1970's and '80's in Canada, based upon the same legislative provisions that are still found in our Evidence Acts, its recommendations should be seriously considered so as to avoid the cost of another consultation process based upon new recommendations.[43] The results of much of that process were reviewed by the Uniform Law Conference of Canada in 1981.

[152] In December 1975 the Law Reform Commission of Canada published its *Report on Evidence*[44] Its Evidence Code contained the following provisions:

31. The following are not excluded by section 27 [the hearsay rule]

(a) a record of a fact or opinion, if the record was made in the course of a regularly conducted activity at or near the time the fact occurred or existed or the opinion was formed, or at a subsequent time if compiled from a record so made at or near such time;

81. (b) "original" ... when used in relation to data stored in a form readily accessible to a computer or similar device, includes any printout or other output readable by sight, shown to reflect the data accurately;

(d) "writings" and "recordings" mean letters, words, or numbers, or their equivalent, set down by handwriting, typewriting, printing, photostating, photographing, magnetic impulse, mechanical or electronic recording, or other form of data compilation.

[153]The Evidence Code was very similar to the U.S. Federal Rules of Evidence which came into effect on July 1, 1975. The Evidence Code received a mixed reaction from lawyers and judges during consultation. However, the provisions noted here evoked little response. They were

generally found to be acceptable. It was suggested that a notice provision be added.[45]

[154] In June 1976, the Ontario Law Reform Commission published its *Report on the Law of Evidence*.46 It concluded that s. 30 of the *Canada Evidence Act* was unsuitable, stating:[47]

From the terminology used in section 30 of the *Canada Evidence Act*, it appears that this provision is not entirely responsive to the procedures used in recording information in computers. The record produced in court would be a "print-out" of the information and calculations stored in the computer, not "a transcript of the explanation of the record or copy". What is retrieved is not necessarily a copy of what is stored, but the data after it has been processed by the computer. Undoubtedly, an explanation of the whole process is required to determine the reliability of the method of storing information, but the ultimate production in a form usable by the courts is the product of a whole series of processing steps performed upon the original record made for the purpose of storing in the computer. The print-out is in effect a mechanical translation of the data fed into the computer and stored.

[155] The Ontario commission therefore recommended the addition of the following subsection to the Ontario business records provision:[48]

Where a record containing information in respect of a matter is made by use of a computer or similar device, the output thereof in a form which may be understood is admissible in evidence if the record would be admissible under this section if made by other means.

It cited in support the following provision recommended by the Law Reform Commission of New South Wales[49] which was enacted in 1976:

A statement in a record of information made by the use of a computer may be proved by the production of a document produced by the use of a computer containing the statement in a form which can be understood by sight.

[156] Therefore both Commissions in effect recommended against a specialized computer provision, i.e. one that directs attention to factors

that are peculiar to computerized record-keeping such as input procedures and software. Theirs is the contrary approach, i.e. the reference to the computer is no more detailed than to state that computer-produced records are a variety of admissible business records if accurate and can be understood.

[157] The Uniform Law Conference of Canada rejected a specialized provision produced by the Federal/Provincial Task Force on Uniform Rules of Evidence. The Task Force was formed in 1977 by the Conference because the Ontario and Canada law reform commissions had taken opposing views to reform of the law of evidence in their respective reports.[50] Its Report[51], completed in 1980, explained its choice of an "intermediate course", i.e. a modestly specialized provision:[52]

Certainly the computer is still something of a mystery to the average layman, and not only is there a danger that the finders of fact will be lulled into a false sense of security by virtue of the computer's reputed infallibility, but also computer evidence poses a very real difficulty for persons attempting to attack its reliability because of the lack of a paper trail. The opposing argument is that if a business sees fit to keep its records in a computer as distinct from a traditional account book, why should a higher standard of admissibility be imposed on computer evidence than account book evidence? While there is a possibility of error through faulty programming, machine malfunction, tampering with the data bank, etc., comparable problems exist with the traditional record-keeping systems; moreover, the problem must be viewed in the light of the undoubted increase in accuracy permitted by the computer.

After considering the various alternatives, the majority of the Task Force recommends that the Uniform Evidence Act follow an intermediate course, namely, that in addition to the other requirements for business documents there be only three conditions of admissibility of computer evidence:

1. proof that the data upon which the print-out is based is of a type regularly supplied to the computer during the regular activities of the organization from which the print-out comes;

2. proof that the entries into the data base from which the print-out originates were made in the regular course of business; and

3. proof that the computer programme used in producing the print-out reliably and accurately processes the data in the data base.

The reason for the first condition is that the court should be satisfied that the computer system not only is capable of processing the kind of information upon which the print-out is based, but also that it does so regularly and routinely. Like the usual and ordinary course of business requirement, this guarantees that the data processing is done in a proven rather than experimental fashion. The second condition is there to assure that in the case of this particular entry into the data base regular procedures were in fact followed. The third condition is simply to provide the court with some expert evidence of the reliability of the programme itself: normally this would be done on the basis of evidence of a business experience with the computer programme over a period of time, but if this experience were lacking (for example, if this was the first time that the business had used this particular computer system or programme), it would be necessary to call an expert who could testify to the accuracy and reliability of the programme from a technical point of view.

[158] This recommendation was rejected. Therefore the Uniform Evidence Act at the end of the Task Force's Report contains provisions that perpetuate the key phrases of s. 30 of the *Canada Evidence Act*.53 The minutes of the proceedings of the special plenary sessions of the Uniform Law Conference of Canada that reviewed the Task Force's recommendations give the following reasons for rejecting them:[54]

Rejected. Members of the majority expressed the following reasons for their decision: (1) if a computer printout is used by a business in its usual and ordinary course of business, that provides sufficient guarantee of reliability; (2) the provision in the recommendation would require the calling of many additional witnesses; and (3) in some cases it would be impossible to satisfy the conditions even though the evidence was reliable.

[159] The arguments to the contrary are: There is no standard "usual and ordinary course of business" for computerized record-keeping as there might be for traditional record-keeping. This provision needs definition which is the reason for the factors listed in a specialized provision. As to witnesses, a single knowledgeable supervisor could alone provide sufficient foundation evidence for admissibility. And thirdly, there is no basis for saying that reliable evidence could not satisfy the listed conditions. In fact, if the conditions cannot be satisfied, the evidence would not be reliable.

[160] The next law reform step was Bill S-33, "An Act to give effect, for Canada, to the Uniform Evidence Act adopted by the Uniform Law Conference of Canada." It received First Reading in the Senate on November 18, 1982, and died at Second Reading. Hearings on its provisions were held from January to June 1983 by the Standing Senate Committee on Legal and Constitutional Affairs. Further consultation was recommended, which was carried out by the Department of Justice. The result was a further draft Act circulated for consultation but not tabled. It was entitled the *Canada Evidence Act, 1986*. Its provisions and those of Bill S-33 are almost the same. They are very similar to the provisions of the *Uniform Evidence Act* approved by the Uniform Law Conference of Canada in 1981.[55] If the Conference decides in 1994 to adopt new business record and microfilm provisions for computer-produced records, the Conference should also consider how they would fit into the 1981 or 1986 provisions as well.

[161] The main provisions from both the *Canada Evidence Act, 1986*, and Bill S-33 of interest here are these:

119. In this section and sections 120 to 149,

"**computer program**" has the same meaning as in section 301.2 [now s.342.1(2)] of the Criminal Code;

"**computer system**" has the same meaning as in section 301.2 [now s.342.1(2)] of the Criminal Code;

"**data**" has the same meaning as in section 301.2 [now s.342.1(2)] of the Criminal Code; [Draft Canada Evidence Act, 1986, s.119]

"**duplicate**" means a reproduction of the original from the same impression as the original, or from the same matrix, or by means of photography, including enlargements and miniatures, or by mechanical or electronic re-recording, or by chemical reproduction or by other equivalent technique that accurately reproduces the original; [draft Canada Evidence Act, 1986, s.119; Bill S-33, s.130]

"**original**" means

(a) in relation to a record, the record itself or any facsimile intended by the author of the record to have the same effect,

(b) in relation to a photograph, the negative or any print made from it, and [draft Canada Evidence Act, 1986, s.119; Bill S-33, s.130]

(c) in relation to a record produced by a computer system, any printout or other intelligible output that accurately reproduces, whether in the same or a modified form, the data supplied to the computer system; [draft Canada Evidence Act, 1986, s.19]

OR

130. **"original"** means ...

(c) in relation to stored or processed data or information, any printout or intelligible output that reflects accurately the data or information or is the product of a system that does so. [Bill S-33, s.130]

Best Evidence Rule

120. Subject to this Act, the original is required in order to prove the contents of a record. [draft Canada Evidence Act, 1986, s.120; Bill S-33, s.131]

121. The proponent of a record produced by a computer system may establish that it is an original by

(a) evidence that on comparison the record produced by the computer system corresponds in every material particular to the data supplied to that system; or

(b) evidence that the computer program used by the computer system to produce the record reliably processes data of the type in question and that there is no reasonable ground to believe that the record does not correspond in every material particular to the data supplied to the computer system. [draft Canada Evidence Act, 1986, s.121]

122. A duplicate is admissible to the same extent as an original unless the court is satisfied that there is reason to doubt the authenticity of the original or the accuracy of the duplicate. [draft Canada Evidence Act, 1986, s.122; Bill S-33, s.132]

123. Where an admissible duplicate cannot be produced by the exercise of reasonable diligence, a copy is admissible in order to prove the contents of a record in the following cases:

(a) the original has been lost or destroyed;

(b) it is impossible, illegal or impracticable to produce the original;

(c) the original is in the possession or control of an adverse party who has neglected or refused to produce it or is in the possession or control of a third person who cannot be compelled to produce it;

(d) the original is a public record within the meaning of section 136 or is recorded or filed as required by law;

(e) the original is not closely related to a controlling issue; or

(f) the copy qualifies as a business record within the meaning of section 142. [draft Canada Evidence Act, 1986, s.123; Bill S-33, s.133]

124. Where an admissible copy cannot be produced by the exercise of reasonable diligence, other evidence may be given of the contents of a record. [draft Canada Evidence Act, 1986, s.124; Bill S-33, s.134]

125. (1) The contents of a voluminous record that cannot conveniently be examined in court may be presented in the form of a chart, summary or

other form that, to the satisfaction of the court, is a fair and accurate presentation of the contents.

(2) The court may order the original or a duplicate of any record referred to in subsection (1) to be produced in court or made available for examination and copying by other parties at a reasonable time and place. [draft Canada Evidence Act, 1986, s.125; Bill S-33, s.135]

126. Where a record is in a form that requires explanation, a written explanation by a qualified person accompanied by an affidavit setting forth his qualifications and attesting to the accuracy of the explanation is admissible in the same manner as the original. [draft Canada Evidence Act, 1986, s.126; Bill S-33, s.136]

127. The contents of a record may be proved by the testimony, deposition or written admission of the party against whom they are offered, without accounting for the non-production of the original or a duplicate or copy. [draft Canada Evidence Act, 1986, s. 127; Bill S-33, s. 137]

128. The court shall not receive evidence of the contents of a record other than by way of the original or a duplicate where the unavailability of the original or a duplicate is attributable to the bad faith of the proponent. [draft Canada Evidence Act, 1986, s.128; Bill S-33, s.138]

129. (1) No record other than a public record to which section 137 applies and no exemplifications or extract of such a record shall be received in a party's evidence in chief unless the party, at least seven days before producing it, has given notice of his intention to produce it to each other party and has, within five days after receiving a notice for inspection given by any of those parties, produced it for inspection by the party who gave the notice.

129 (2) In a civil proceeding, the provisions of subsection (1) apply only to a business record within the meaning of section 142 or a record to which section 73, 135, 138, 140 or 141 applies. [draft Canada Evidence Act, 1986, s.129; Bill S-33, s.139]

Authentication

130. (1) Authentication of a record means the introduction of evidence capable of supporting a finding that the record is what its proponent claims it to be.

(2) The proponent of a record has the burden of establishing its authenticity.

(3) The court shall require that evidence respecting the authenticity of a record produced by a computer system be given by the custodian of the record or other qualified witness orally or by affidavit.

(4) The Governor in Council may make regulations respecting the form and contents of the affidavit referred to in subsection (3).

(5) Where evidence under subsection (3) is offered by affidavit, it is not necessary to prove the signature or official character of the affiant if his official character purports to be set out in the body of the affidavit. [draft Canada Evidence Act, 1986, s.130]

140. The proponent of a record has the burden of establishing its authenticity and that burden is discharged by evidence capable of supporting a finding that the record is what its proponent claims it to be. [Bill S-33, s.140]

Business and Government Records

142. In this section and sections 143 to 148,

"**business**" means any business, profession, trade, calling, manufacture or undertaking of any kind carried on in Canada or elsewhere whether for profit or otherwise, including any activity or operation carried on or performed in Canada or elsewhere by any government or any department, ministry, branch, board, commission or agency of any government or any court or tribunal or any other body or authority performing a function of government;

"**business record**" means a record made in the usual and ordinary course of business; "financial institution" means the Bank of Canada, the Federal Business Development Bank and any institution incorporated or established in Canada that accepts deposits of money from its members

or the public and includes any branch, agency or office of any such Bank or institution. [draft Canada Evidence Act, 1986, s.142; Bill S-33, s.152]

143. (1) A business record is admissible whether or not any statement contained in it is hearsay or a statement of opinion, subject in the case of opinion, to proof that the opinion was given in the usual and ordinary course of business.

(2) Where part of a business record is produced in a proceeding, the court, after examining the record, may direct that other parts of it be produced. [draft Canada Evidence Act, 1986, s.143; Bill S-33, s.153]

144. (1) Where a business record does not contain information in respect of a matter the occurrence or existence of which might reasonable be expected to be recorded in the record if the matter occurred or existed, the court may admit the record in evidence for the purpose of establishing the absence of that information and the trier of fact may draw the inference that the matter did not occur or exist.

(2) In the case of a business record kept by a financial institution or by any government or any department, branch, board, commission or agency of any government under the authority of an Act of Parliament, an affidavit of the custodian of the record or other qualified witness stating that after a careful search he is unable to locate the information is admissible and, in the absence of evidence to the contrary, is proof that the matter referred to in subsection (1) did not occur or exist. [draft Canada Evidence Act, 1986, s.144; Bill S-33, s.154]

145. (1) For the purpose of determining whether a business record may be admitted in evidence under this Act, or for the purpose of determining the probative value of a business record admitted in evidence under this Act, the court may examine the business record, receive evidence orally or by affidavit, including evidence as to the circumstances in which the information contained in the record was written, recorded, stored or reproduced, and draw any reasonable inference from the form or content of the record.

(2) Where evidence respecting the authenticity or accuracy of a business record is to be given, the court shall require the evidence of the custodian of the record or other qualified witness to be given orally or by affidavit. [draft Canada Evidence Act, 1986, s.145; Bill S-33, s.155]

(3) Where a business record referred to in subsection (2) or record produced by a computer referred to in section 121 is a business record of a financial institution, the evidence of the custodian or witness shall be given by affidavit unless the court finds that the interests of justice require that it be given orally. [draft Canada Evidence Act, 1986, s.145(3)]

OR

(3) Where evidence under subsection (2) is offered by affidavit, it is not necessary to prove the signature or official character of the affiant if his official character purports to be set out in the body of the affidavit. [Bill S-33, s. 155(3)]

146. Any person who has or may reasonably be expected to have knowledge of the making or contents of any business record or duplicate or copy of it produced or received in evidence may, with leave of the court, be examined or cross-examined by any party. [draft Canada Evidence Act, 1986, s.146; Bill S-33, s.156]

147. (1) In a proceeding to which a financial institution is not a party, a business record of the financial institution is, in the absence of evidence to the contrary, proof of any matter, transaction, or account contained in the record.

(2) Unless the court for special cause orders otherwise, in a proceeding to which a financial institution is not a party,

(a) the financial institution is not compellable to produce any original business record of the institution if it produces a duplicate of the record admissible under section 122; and

(b) no officer or employee of the financial institution is compellable to appear as a witness to prove the matter, transaction or account to which the record relates.

[draft Canada Evidence Act, 1986, s.147; Bill S-33, s.157]

148. (1) On application by a party to a proceeding, the court may allow the party to examine and copy any business record of a financial institution for the purposes of the proceeding.

(2) Notice of an application under subsection (1) shall be given to any person to whom the business record to be examined or copied relates at least two days before the hearing of the application and, where the court is satisfied that personal notice is not possible, the notice may be given by addressing it to the financial institution. [draft Canada Evidence Act, 1986, s.148; Bill S-33, s.158]

(3) Nothing in this Act shall be construed as prohibiting any search of the premises of a financial institution under the authority of a warrant to search issued under any other Act of Parliament, but unless the warrant is expressly endorsed by the person who issues it as not being limited by this subsection, the authority conferred by the warrant to search the premises of a financial institution and to seize and take away anything therein shall, as regards the business records of the institution, be construed as limited to the searching of the premises for the purpose of inspecting and taking copies of the records. [draft Canada Evidence Act, 1986, s.148(3)]

Probative Force of Records

149. Where an enactment other than this Act provides that a record is evidence of a fact without anything in the context to indicate the probative force of that evidence, the record is proof of the fact in the absence of evidence to the contrary. [draft Canada Evidence Act, 1986, s.149; Bill S-33, s.159]

[162] These provisions appear to be a compromise between a detailed specialized computer provision and the present s. 30 of the *Canada Evidence Act*. They do contain special requirements applicable to computer produced records. And much of the language of s. 30 *Canada Evidence Act* is perpetuated in ss. 142 to 148. This means that courts would have to continue to rely on the phrases, "usual and ordinary course of business"

(s. 142) and "the circumstances of the making of the record" (s. 145) under the 1986 proposal.

[163] A more specialized provision would replace or supplement s. 145 with specific key features of computerized record-keeping rather than merely leaving the court to choose its own features by way of phrases such as "the circumstances of the making of the record." For example, s. 145 could gain the same provisions as proposed at page 25 above for specialized rules for computer evidence, based on the National Imaging Standard reproduced in Appendix D below.

[164] In addition, the amendments recommended elsewhere in this paper to the photographic document provisions so as to include electronic imaging could be made part of the definition of the "original" in s. 119 above and added to the business and government records provisions in ss. 142 to 148 and s. 149. The definition of "business" in s. 142 includes "any government or any department, ministry, branch, board, commission or agency of any government or any court or tribunal or any other body or authority performing a function of government."

[165] The extra provisions would be:

119. In this section and sections 120 to 150,

"original" means

(a) in relation to a record, the record itself or any facsimile intended by the author of the record to have the same effect,

(b) in relation to a photograph, the negative or any print made from it, and [draft Canada Evidence Act, 1986, s.119; Bill S-33, s.130]

(c) in relation to a record produced by a computer system, any printout or other intelligible output that accurately reproduces, whether in the same or a modified form, the data supplied to the computer system; [draft Canada Evidence Act, 1986, s.19]

(d) in relation to a record produced by electronic imaging or other process stated in section 149, any printout that accurately reproduces the image or record produced in accordance with section 149.

149. [See proposed text at page 31.]

APPENDIX D - Imaging and the Law

[166] Electronic imaging reproduces the exact images or pictures of documents onto optical or magnetic disk by means of a scanner.[56] This device electronically captures data from a paper document in a raster[57] pattern and creates a digital file of the document. That digital file can be stored in an optical or magnetic disk for display on a computer screen. In effect, it recreates a picture of the original document thus allowing that original to be destroyed, eliminating the cost of paper files.

[167] A number of mechanisms and variables affect the quality of imaging that require regulation by national standards and industry standards. They include whether erasable or non-erasable disks are used, indexing quality, preparation of documents for scanning, scanning resolution, image compression to reduce storage space and transmission times, image enhancement, encrypting, quality assurance that involves at a minimum visual inspection of digitized document images, scanner testing and verification of index data, backup and recovery procedures, care and handling of disks, storage conditions for security copies, hardware and software dependence, retrieval software and security measures.[58] Therefore, as recommended in this paper, evidence legislation should make reference to the national and industry standards concerning electronic and microfilm imaging.

[168] At present, optical storage is used because of its greater density of storage over magnetic storage and because its non-erasable character is intended to give it a status equal to that of microfilm storage. But because magnetic storage is faster, it is used as a temporary, intermediate step to permanent optical storage. Therefore, the typical imaging system involves first scanning documents into magnetic storage so as to create an exact picture or graphic representation of each document. After verification, the captured image is then transferred to optical storage. Imaging and optical storage may be combined with OCR (optical character reader) scanning.

OCR capture into magnetic storage enables text manipulation such as word processing, indexing, and database management, because the optically stored image is not meant to be altered.

[169] Some of the newest systems planned for larger operations that want greater security, such as in banking systems, allow for a three-way capture to optical, OCR and microfilm storage. The microfilm image is meant to provide not only a permanent backup copy to the optical image, but also a backup copy during the transitional magnetic storage stage because a magnetically stored image is easily altered and therefore less secure than a non-erasable optically stored image. And microfilm can be an alternate record system that can be used during the many hours needed to make backups of many gigabytes of optically stored records.

[170] Also, microfilming is well accepted. Its "legality' is well established in the laws of evidence, and its physical durability and life expectancy are well known.[59] In comparison, the "legality" of electronic imaging into optical storage is uncertain, and the limits of its physical longevity are not nearly as certain because it has not been used as long. Therefore, perpetuating the use of microfilm storage by providing a system of parallel capture to optical capture could be an important strategy for introducing optical storage and establishing its dominance for mass storage systems.

[171] Information management, record-keeping, and data processing professionals are very interested in electronic imaging and optical disk storage. First, these new technologies provide all of the advantages of computerized, automated record-keeping and information handling. Second, they provide better solutions to the record-keeping, paper-handling, "paper burden", and archiving problems presented by paper records than do any previous technologies. Third, they truly allow an organization to create a "paperless office", i.e. business, management and clerical functions can be substantially re-designed because there can be a single electronic record-keeping system that provides instant access to information at all points served by an organization's information network.

[172] Of particular importance to imaging is Canada's new national standard, *Microfilm and Electronic Images as Documentary Evidence,* CAN/CGST-72.11-93,[60] which establishes important principles for imaging that should be considered in relation to issues of admissibility and weight. For example, it states:[61]

FUNDAMENTALS OF A MICROGRAPHICS AND/OR ELECTRONICIMAGE MANAGEMENT PROGRAM

The following factors are necessary for the implementation of a credible image management program:

a. The written authority from senior management to establish the image management program.

b. The program's integration into the usual and ordinary course of business of the organization.

c. The written authority for the regular disposal of source records a reasonable period of time after the microfilming or image capture process.

d. The establishment and documentation of the program's systems and procedures

e. Provision for quality assurance.

f. Provision for appropriate storage and preservation of storage medium considering its desired retention period.

g. The program's conformity to all applicable micrographics and electronic image standards [cited in this standard].

[173] The standard raises the question whether imaged records will be treated as just another variety of computer-produced records, or instead subject to the rules applicable to microfilmed records, or subject to both the business record and microfilm provisions.

[174] Because electronic imaging is not a photographic process the microfilm provisions as they are presently worded cannot be applied directly. They could be applied indirectly by analogy. Because imaging and

microfilming share the same purpose of displacing paper-original records with a new, equally authoritative electronic "original", proponents of admissibility have to be prepared for legal arguments that requirements comparable to those in the microfilm provisions should be read into the business document provisions when determining the admissibility of copies of business records produced with imaging technology. Those requirements, although similar from one Evidence Act to the next, can be cumulatively summarized (albeit imprecisely, and only for 10 of our 13 federal, provincial and territorial jurisdictions), as follows:

1. the photographing of original records as part of an established practice;

2. in order to keep a permanent record thereof;

3. the disposal of the original records, but subject to a six year period of preservation in regard to "executed or signed" documents.

[175] Such requirements would categorize imaging systems as more closely analogous to microfilm systems that produce new replacement copies of older original records, than to computer systems based upon original entry of original data. It is clear therefore, that our microfilm or business record provisions should be amended to incorporate the following improvements:

1. To accommodate computer-operated microfilm systems such as COM systems (computer output microfilm);

2. To refer the courts to national standards in relation to microfilm and electronic imaging;

3. To make clear that a copy from microfilm or electronic storage is as admissible and has the same status in law as the original document it came from;

4. To accommodate electronic imaging.

[176] Particularly obstructive to microfilm systems is the six year retention period for signed paper originals that is in most of the microfilm provisions.[62

34. (3) Where a bill of exchange, promissory note, cheque, receipt, instrument, agreement or other executed or signed document was so destroyed before the expiration of six years from,

(a) the date when in the ordinary course of business either the object or the matter to which it related ceased to be treated as current by the person having custody or control of the object; or

(b) the date of receipt by the person having custody or control of the object of notice in writing of a claim in respect of the object or matter prior to the destruction of the object,

whichever is the later date, the court may refuse to admit in evidence under this section a print from a photographic film of the object.] Such retention periods should be removed because they largely defeat the purposes for microfilming records, which include reducing storage space and cost, improving security of storage, improving mobility of stored records, and improving indexing and retrieval of records. The use of the national standard and of imaging technology could also be hindered by such retention periods.

[177] At present, it is more likely that electronic imaging will be treated as a variety of computer-produced records and therefore subject to the business record provisions rather than subject to the microfilm provisions by analogy. In compensation, the standard suggests the following list of points by which to judge the admissibility and weight to be given to computer-produced records so that an organization can be prepared to meet the standard's prime directive that all times an organization must be prepared to produce its imaged records as evidence:[63]

Sources of Data and Information -- Proof of the sources of data and information recorded in the databases upon which the record is based. One should be able to describe, at least in general terms, the sources of data and information in one's information or record-keeping system. Information management and record-keeping cannot be more reliable than the quality of the data and information that goes into it.

Contemporaneous Recording -- Proof that the data and information in those databases was recorded in some fashion contemporaneously with, or within a reasonable time after, the events to which such data and information relates (but contemporaneous recording within those databases themselves is not required). The fact that facts and events have not been recorded close to the time when they happened may give rise to an inference that they have been forgotten to some extent or misremembered. Contemporaneous recording removes the possibly of drawing that inference.

Routine Business Data and Information -- Proof that the data and information upon which the record is based is of a type that is regularly supplied to the computer during the regular activities of the organization from which the record comes. Courts look for data and information that cames from regular business transactions, as distinguished from data and information that is unusual to the business, or has been specially contrived for a court case.

Privileged Data and Information -- A certification that the use in court proceedings of the data and information upon which the statements in the record are based does not violate any legal principle of privileged or confidential data and information thereby preventing its disclosure. (This principle would require an assessment of the applicable law of privileged and confidential data and information in relation to a specific business record that is intended to be adduced as evidence.)

Data Entry -- Proof that the entries into the database(s) were made in the regular course of business. (This is another example of the court's use of the principle of "routine business procedure" or "business as usual" as a standard for verifying the reliability of data and information in business records.)

Industry Standards -- Proof that the input procedure to those databases conforms to standard practices in the industry involved. Although national standards for data processing in general do not yet exist, accepted practices within any part of the industry should be conformed to, so as to prevent the possibility that a court opponent might show that they are not

being conformed to. As well, other professional organizations have published important treatises that supply standards.

Business Reliance -- Proof that there has been reliance upon those databases in making business decisions within a reasonably short time before or after producing the records sought to be admitted into evidence. The credibility of assurances and evidence of reliability of a database can be greatly enhanced by showing reliance upon that database in making business decisions, and showing that such reliance has led to the successful operation of the business that so relies upon that database.

Software Reliability -- Proof that the computer programs used to produce the output, accurately process the data and information in the databases involved. In other words, demonstrating a history of reliability will nullify arguments of speculative shortcomings and worst-case scenarios. If, however, a history of reliability does not yet exist because the system is too new, its vendor should provide that history from the experience of other customers or suppliers and programmers.

A **Record of System Alterations --** Proof that from the time of the input of the data into the databases until the time of its production, records have been kept by a responsible person in charge of alterations to the system.

Security --Proof of the security features used to guarantee the integrity of the total information or record-keeping system upon which the output is based, and of the effectiveness of such features. Security varies with the type of information system and its use so as to produce the appropriate compromise between access and security, between ease of use and accuracy, and between efficiency and cost. Therefore, different systems will implement the following key points of security to differing degrees:

a. Protecting against unauthorized access to data and to permanent records

b. Processing verification of data and statements in records

c. Safeguarding communications lines

d. Maintaining copies of records on paper, microfilm, or other reliable physical or electronic forms for purposes of verification or replacement of falsified, lost or destroyed permanent and temporary records.

The factors cited in the above ten points should be able to be testified to by a single supervising officer of any well-run information or record-keeping facility, big or small. An additional witness may be required for software that is unique to the system unless that supervisor can testify to its history of reliability. If not, the programmer who wrote it should be available to certify its reliability until it does have a history of reliability. The proper choice of suppliers and programmers requires that consideration be given to their ability and experience in certifying the reliability of their products.

The evidence that these ten points will produce will vary with each information management or record-keeping system. Therefore, the records that each produces for court should be looked upon as creating its own unique evidentiary problems.

[178] If, as suggested above, imaging is held to be caught by both business records and photographic document (microfilm) rules, as a hybrid technology, it may be argued that the six year rule and the various destruction requirements for paper originals are appropriate for electronically imaged records if imaging is serving a similar purpose.

[179] Such arguments could be removed by amending the business record provisions to include imaging, or by amending the microfilm provisions so as to include imaging and removing the retention periods for the paper original records. If imaging could be said to use the computer as merely a storage device, just like microfilm, the computer functions would not have to involve the business record provisions. Regulating the special technology of electronic imaging could be dealt with in the microfilm provisions by reference to the new national standard. However because computer functions will be involved, not only by way of retrieval of records but also by way of data processing or other computer functions performed upon the same imaged records, the data and

information so scanned into a computer should be subject to those business record provisions applicable to computer-produced records.