ARTICLE:

EDUCATING FOR THE FUTURE: TEACHING EVIDENCE IN THE TECHNOLOGICAL AGE

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The advent of the technological age has had significant effect on litigation practice, none more so than in the area of evidence gathering and presentation in court. A significant proportion of evidence that is gathered for both criminal and civil matters is now electronic in nature, and this necessitates a change in the way that lawyers think and advise on evidential issues. It is argued here that rather than simply focusing on principles relating to the admissibility of evidence in court, the traditional course on evidence law should be modified to equip students with an intellectual framework that conceives of electronic evidence in litigation as an entire process. This process begins with the gathering and forensic examination of electronic evidence, and is followed by the admissibility of such evidence in court, ending with the effective presentation of the evidence before a judge or jury. It is argued in that taking such an approach, the law teacher would be playing the role of effective gatekeeper to the legal profession by providing a course that is both intellectually rigorous and adequately prepares would-be litigators for the realities of modern day practice.

Introduction

The demands of modern day litigation practice have never been greater. After all, litigation is simply a means of dispute resolution, generally between commercial parties, and in understanding their clients and the problems that they face, lawyers inevitably have to delve into their business practices as well. Commercial habits have evolved to embrace the technological age. Ipads, blackberries and e-mails have changed not just the way people communicate, but the way information is created and stored. The mass of evidence that is accumulated and stored as a result creates significant problems when the data has to be retrieved and sorted should a dispute arise. This problem is exacerbated by the globalization of business and the storage of corporate information across jurisdictions.

It would seem to be common sense then, for the management of electronic evidence to be a core skill that should be engrained in the modern day lawyer. Yet, the unique aspects of electronic evidence and their influence on the classical rules of evidence law are glaringly absent from the curriculum of most legal education institutions around the world. It is argued here that this lacuna is resulting in young lawyers being underprepared for the realities of modern legal practice.

Evidence law is traditionally taught using a doctrinal, case-based approach, whereby emphasis is placed on the various exclusionary rules of evidence, such as the rule against hearsay evidence, the rule against similar fact evidence, the best evidence rule, et cetera. Such pedagogy has clear advantages, including the provision of a solid grounding in the principles that govern the admissibility of evidence, and these principles can generally be applied to all types of evidence and cases, whether civil or criminal. This approach, however, suffers from two distinct weaknesses. First, it does not sufficiently emphasize the fact that different types of evidence may require different approaches. In this regard, the next part of this article highlights certain significant characteristics of electronic evidence that necessitate special handling by the law. Second, the existing approach to evidence fails to recognize that the evidentiary concerns that occupy a lawyer and his client extend far beyond the issue of admissibility in court. While it is certainly the case that admissibility of relevant evidence is the ultimate aim, there are many anterior and intermediate steps that a lawyer must take and advise his client on in order to ensure that the relevant evidence is admissible. Such steps include the gathering and forensic examination of the relevant evidence, the preservation of the evidence once gathered, and the effective

presentation of the evidence to a judge or jury once it has been received into evidence by the court. Using the area of electronic evidence as the platform, it is argued here that rather than conceiving evidence law as a series of discrete rules governing admissibility, the law of evidence should instead be understood as a process, with equal emphasis on collection, preservation, admissibility and presentation.

In order to address these twin concerns, it is imperative that the full spectrum of legal issues relating to electronic evidence should be taught as a fundamental component of any undergraduate law syllabus, either as a separate subject altogether or at least as a distinct and important part of a traditional course in evidence law. This is critical in order to equip students with the necessary skills and knowledge to handle the entire process of modern day litigation. However, as with any pedagogical piece, the predominant fear is that the tone taken is overly didactic or prescriptive. This article eschews promoting one method or one route by which students should be instructed. Rather, it seeks to highlight important features and trends relating to electronic evidence before exploring some of the pedagogical barriers that impede the full integration of the subject into the undergraduate evidence course. The best ways of teaching the subject in a meaningful manner will then be explored. In so doing, it is hoped that this is the genesis of a dialogue between judges, academics, practitioners and students in order to ensure that the law of evidence continues to be relevant in today's context.[1]

What is electronic evidence and why does it matter?

The following definition of electronic evidence serves as a useful starting point –

> 'Electronic evidence: data (comprising the output of analogue devices or data in digital format) that is manipulated, stored or communicated by any man-made device, computer or computer system or transmitted over a communication system, that has the potential to make the factual account of either party more probable or less probable than it would have been without the evidence.'[2]

Electronic evidence exists in a variety of forms and in addressing a case, a lawyer would do well to consider and apply the basic principles contained in the definition above in order to identify the potential avenues of evidence that may be useful to that case. It has been argued that '[a]t its core, electronic evidence is simply an event memorialized by a computer'.[3] The definition set out above emphasizes factual relevance as a basic aspect of the law of evidence. The potential of data to have significant probative value directs the investigation and retrieval of that data, the process of pre-trial disclosure as well as the presentation of the evidence at trial. The unique aspects of electronic evidence are well documented, and only a quick revisit of some significant features is necessary here.

Dependency on machinery

The most prominent feature of electronic evidence is the interposition of machinery between the lawyer and the data. In contrast to traditional paper documents, which are easily accessible by way of ocular review, electronic evidence is only rendered intelligible through the use of third party hardware and software.[4] It has been argued that 'electronic documents are better understood as a process by which otherwise unintelligible pieces of data that are distributed over the storage medium are assembled, processed and rendered legible for a human user. In this sense, "the document" is nowhere; it does not exist independently from the process that recreates it every time a user opens it on screen.'[5] From the evidence gatherer's perspective, a thorough understanding of this intangible and unobvious process is critical since potentially useful information may be accumulated at every point of the process. For example, both hardware and software produce evidence in the form of metadata and logs, which may be missed out on by those unaware of their existence. Another unique feature of the interaction between data and technology is that the data is often only accessible via specific programs that may be difficult to obtain access to or obsolete. The cost of evidence retrieval can rise exponentially as a result.

Volume and replication

As alluded to in the introduction, the enormous volume of information that is generated by electronic communication has changed the face of modern commercial practice and consequently, of the litigation landscape. The explosive growth of information has

1 *For a learned discussion on similar concerns relating to the teaching of trust law, see Tang Hang Wu, 'Teaching trust law in the twenty-first century', in Exploring Private Law, ed. by Elise Bant and Matthew Harding (New York: Cambridge University Press 2010), pp. 125 – 149 (p. 126).*

2 *Stephen Mason, gen ed, Electronic Evidence (3rd edn, London: LexisNexis Butterworths, 2012), p. 27.*

3 *Mark Krotoski, 'Effectively Using Electronic Evidence Before and At Trial', United States Attorneys' Bulletin, Vol. 59 no. 6, November 2011, 52 – 72, p. 53.*

4 *Electronic Evidence, p. 30.*

5 *Electronic Evidence, p. 30.*

been innovatively termed as an 'information inflation' and has been attributed to 'an evolutionary burst in writing technology'.[6] This technology has contributed to increased authorship at lightning speeds, and the concomitant development of storage technology has made it easy to simultaneously generate and store multiple copies across a variety of media, located across jurisdictions. The volume of information, and tendency for multiple copies of the same document to be stored, make it challenging for evidence to be gathered and sorted in a systematic and meaningful fashion. The problem was succinctly set out by Senior Master Whitaker in *Gavin Goodale & Ors v The Ministry of Justice & Ors*[7] as follows –

'1. This judgment concerns a serious practical problem for the case management of disclosure which is now occurring on a regular basis. The reason is that, since certainly the beginning of this decade, increasing numbers of public bodies and private businesses, not to mention individuals, have gone over to creating, exchanging and storing their documentation and communicating with each other entirely by electronic means. The end result is that an enormous volume of information is now created, exchanged and stored only electronically. Email communication, word processed documents, spreadsheets and ever increasing numbers of other forms of electronically stored information ("ESI") now often form the entire corpus of the documentation held by companies and individuals who become involved in litigation. So the incidence of paper disclosure is becoming less and less prevalent though in some cases it may still be critical. and the incidence of the disclosure of electronically stored information, or ESI as it is known, is becoming more and more so.

2. What is more, the volume of the ESI, even in small organisations is immense, often, as in the case of email, because of the huge quantities of documents created (including wide-scale duplication) and the fact that the documents can exist in many different forms and locations so that they are not readily accessible except at significant cost. It is also commonplace for many individuals to have more than one email account – business, personal, web-mail (for example, Yahoo, Gmail, Hotmail etc.) When ESI is available, metadata (literally data about data) associated with it can easily be unintentionally altered by the very act of collection, which in some circumstances can have a detrimental effect on the document's evidential integrity. What is more, ESI can be moved about nationally and internationally, indiscriminately and at lightening speed …'[8]

Metadata and storage media

Metadata has been defined as 'data about data' and generally comprises information that is hidden from plain view when an electronic document is viewed on a screen.[9] Metadata is typically created automatically and therefore the document creator may be entirely unaware of its existence. There are three main types of metadata. First is descriptive metadata, which provides descriptive information about a particular document, such as the title, key words and purported author. Next is structural metadata, which describes how a number of objects are brought together, such as file identification or file encoding information. Lastly, there is administrative metadata, which provides information to help with the administration of the document or resource.[10]

Falsification and deletion

Another characteristic of electronic evidence is the ease with which the documents can be tampered with or altered. A working knowledge of digital forensics thus becomes important even as the lawyer works hand in hand with the digital evidence specialist to dissect and examine electronic documents. Even as electronic documents are easy to alter, they are difficult to destroy. Unlike paper documents, which can be burned or shredded, deleted electronic data continues to reside in the computer and is potentially retrievable.[11]

Having understood the main characteristics of electronic evidence, it becomes easy to appreciate its uses. Electronic evidence harbours unique information that may not exist or be easily retrievable in hard copy form. Mark Krotoski has helpfully identified five phases that 'enhance the identification and use of electronic evidence during an investigation and, if necessary, at trial':[12]

1. The Investigation Phase: In this phase, electronic evidence can further investigation and help prove the case. During this phase, electronic evidence generally

6 *George L. Paul and Jason R. Baron, 'Information Inflation: Can the Legal System Adapt?', 13 Richmond Journal of Law & Technology 10 (2007), http://law.richmond.edu/jolt/v13i3/article10.pdf.*
7 *[2010] EWHC B41 (QB).*
8 *[2010] EWHC B41 (QB).*
9 *Electronic Evidence, p. 35.*
10 *Electronic Evidence, p. 38.*
11 *Adjoa Linzy, 'The Attorney-Client Privilege and Discovery of Electronically-Stored Information' Duke Law & Technology Review 1 (2011), paragraphs 13 – 14.*
12 *Mark Krotoski, 'Effectively Using Electronic Evidence Before and At Trial', United States Attorneys' Bulletin, Vol. 59 no. 6, November 2011, 52 – 72, p. 55.*

falls into two categories. The first category is the hardware, which includes computers and devices containing electronic evidence. The second category relates to electronic records, such as e-mail, chat, call logs and on-line payment transactions. The latter category of evidence may have to be provided by third parties.

2. The Corroboration Phase: This phase is concerned with the overlap or match between electronic evidence and the facts and evidence as obtained from other, non-electronic sources. Electronic evidence here would play a crucial role in either corroborating or disproving information that is derived from traditional investigation techniques. Needless to say, it is also important for electronic evidence to corroborate inter se.

3. The Report Phase: In this phase, the party utilizing the electronic evidence decides whether the evidence requires expert testimony. Whether such expert reports are necessary would depend on the jurisdictional rules regarding experts.

4. The Admissibility Phase: Once the investigations are complete, the evidence is corroborated, and a pre-trial report has been prepared, counsel must address their mind to various issues pertaining to the admissibility of electronic evidence at trial. These issues include the effect of the hearsay rule, authenticity of evidence and whether the electronic evidence can be admitted as real evidence.

5. The Presentation Phase: In this final phase, lawyers focus on the most effective way to present the electronic evidence that has been admitted. This is particularly important in jury trials, or where the electronic evidence is not in a readily understandable format.[13]

As can be seen, the lawyer is, throughout the entire pre-trial and trial process, actively engaged in making informed and strategic calculations in respect of the electronic evidence that has been gathered. It is thus crucial that law students are equipped, from the earliest stages of their learning of the law of evidence, with the intellectual framework to view evidential issues in this comprehensive manner as well as with a critical appreciation of the various unique aspects of electronic evidence that distinguish it from traditional documentary evidence.

Trend-spotting: globalization, evolution and the lawyer's duty

In tandem with the rise of digitization is the increasing internationalization of business transactions, and the resultant necessity for lawyers to consider evidence in a manner that transcends national boundaries. Relevant evidence might reside in internal or third party servers located in foreign jurisdictions, or in the 'cloud'. Lawyers thus have to grapple with the complex legal issues that result, such as the extent to which a search order can cover evidence residing beyond the court's jurisdictional reach.

The unique aspects catalogued above necessitate an evolution in the way that evidence is gathered at the investigative level, and then received as evidence in court. While computer forensics, in particular to investigate crimes, have been recognized as practically significant[14] and an important intellectual discipline in its own right,[15] most commercial lawyers are unfamiliar with the various tools and techniques that are at their disposal, particularly in terms of forensic investigation and data preservation and collection.

The importance of such knowledge however, cannot be overlooked, for the courts have increasingly recognized the necessity for solicitors to take positive steps to ensure that their clients appreciate at an early stage of the litigation, promptly after the claim form has been issued, not only the duty of discovery and its width but also the importance of not destroying documents which might possibly have to be disclosed. It is no longer enough to simply issue instructions that any relevant document be preserved.[16] The responsibility of solicitors has been held to extend beyond the duty to provide discovery to encompass a positive duty to ensure that the client takes steps for documents be preserved. Crucially, this duty can include having a sufficient understanding of the case to know which documents to look for and to appreciate which documents were relevant.[17] Hence, in order to discharge this duty, not only must a lawyer be familiar with the law and his client's case, but also with the potential sources of evidence within the client's electronic repositories and how those pieces of evidence can be

13 *Mark Krotoski, 'Effectively Using Electronic Evidence Before and At Trial', pp. 55 – 70.*
14 *Electronic Evidence, p. 75.*
15 *Sarah Mocas, 'Building Theoretical Underpinnings for Digital Forensics Research", Digital Investigation: The International Journal of Digital Forensics & Incident Response, Vol. 1 Issue 1, 2004, 61 – 68.*
16 *Hong Leong Singapore Finance Ltd v United Overseas Bank Ltd [2007] 1 SLR 292 at [33].*
17 *Hong Leong Singapore Finance Ltd v United Overseas Bank Ltd [2007] 1 SLR 292 at [33].*

retrieved and preserved to facilitate admissibility in court.

The consequences of failure to preserve potentially admissible evidence differ from jurisdiction to jurisdiction, but in Singapore for example, they would include adverse inferences being drawn against the party in default[18] and even striking out of the party's pleadings. Such was the case in *Alliance v Lane Pendleton*[19] where the claimant successfully struck out the defence based on the defendants' failure to produce and return by a stipulated date the original hard disk of a Dell laptop as required by orders of court.

What is stopping us?

In light of the features and trends highlighted above, it would seem highly relevant, or even essential, for the law student to receive instruction on the legal issues relating to electronic evidence. However, despite the clear importance of the subject, there seems to have been very little impetus thus far to either offer the subject as a separate elective or to integrate the topic in a meaningful way into the ubiquitous evidence course at the undergraduate level.

As alluded to above, a possible reason for this is that we have yet to achieve a mindset shift away from the traditional doctrinal approach to evidence law. The exclusionary rules in evidence are fundamentally concerned with the issue of admissibility in court, and a significant proportion of the typical undergraduate course is concerned with the application of these rules. Other issues, such as the collection and preservation of evidence (whether electronic or otherwise) do not feature, presumably because they relate more to practice, which are the proper province of a legal skills course. This, it is suggested, is an erroneous approach. While a course on the law of evidence should not be transformed into a legal skills course, students must still be equipped with the correct intellectual ability, framework and mindset to properly understand the role that evidence, particularly electronic evidence, plays in the pre-trial and trial process as well as the relevant legal issues that surround it.[20] In particular, focusing only on admissibility will insufficiently prepare young lawyers to properly advise their clients at two critical junctures. First, clients may need advice on electronic evidence issues at the transactional stage in order to avoid litigation. Secondly, clients would certainly need advice at the pre-trial stage of litigation on issues relating to collection, forensic examination and preservation. Students must thus, from the earliest stage of learning about the law of evidence, be exposed to the proper context in which evidential issues surface in practice.

It would also not be far-fetched to surmise that a vast majority of course instructors and law students alike face significant mental barriers when it comes to a subject area that is inextricably linked to technology. Most of us only have a vague idea of how a computer and the internet actually work, and the idea of grappling with legal issues relevant to such complex technical know-how would be unpalatable to all but the most technologically savvy among us. As such, it is necessary for educational institutions to identify and engage the few domain experts who do possess the knowledge to provide a full course on electronic evidence.

Finally, there seems to be a misconception that electronic evidence issues are better left to a legal skills course or that a sufficient understanding can be garnered when young lawyers begin life in practice. Given the uniqueness of electronic evidence and its increasing importance, such an attitude is, with respect, rather irresponsible as it behoves the legal educator to ensure that his course is not only rigorous as an academic discipline, but also up to date and adequately equips the students with the necessary skills to be able to conduct real cases. The legal educator must not only impart knowledge of the law, but also act as a gatekeeper to the legal profession by ensuring that young lawyers entering the profession are sufficiently prepared to meet the real and practical challenges presented in modern day litigation, especially in the area of electronic evidence. As has been argued, it is important that students are provided with an intellectual framework by which to understand the relevant legal issues related to electronic evidence, and the best time for this to be imparted is in the academic atmosphere, where students still have the time and inclination to contemplate the legal niceties and complexities that are abundant in this new and emerging area of law.

A proposal: a course on electronic evidence[21]

It remains for this article to offer some thoughts on how to remedy the current lacuna in the syllabus of courses on the law of evidence. At the outset, it should be stressed that the pervasiveness of communications and documentation in the electronic medium means that

18 *Section 11 of the Singapore Evidence Act (Cap 97, 1997 Rev. Ed.).*
19 *Alliance v Lane Pendleton [2008] 4 SLR(R) 1.*
20 *Tang Hang Wu, 'Teaching trust law in the twenty-first century', p. 127.*
21 *Special thanks to Mr Stephen Mason for the generous sharing of his ideas in relation to this section.*

the area of electronic evidence is of central importance in modern day litigation. Coupled with the novel and esoteric nature of electronic evidence, there is more than sufficient justification for a dedicated and independent course. Even if a standalone course is not prescribed, a distinct part of any course on evidence law ought at the very least to be devoted to this burgeoning area of law.

In constructing such a course on electronic evidence, several essential principles should underpin its teaching, curriculum and architecture. Firstly, the very nature of the subject requires a certain degree of domain knowledge relating to information technology. A foundational aspect of the course is therefore essential to provide a basic and functional understanding of the workings of a computer and electronic systems, which would lead on to an exploration of the nature and characteristics of electronic evidence. Such foundation is crucial, without which it becomes impossible for the law student to grapple with how to apply established rules of evidence to a totally different type of subject matter, let alone take a step further to analyze how such rules may become obsolete or be in need of modifications to cater to the peculiarities of electronic evidence that set it apart from documentary evidence in its hard copy form. Teaching this aspect of the course will be as challenging as it is fundamental. Given the typical adversity to technology among many law students, the aim of the legal educator would be to get them to confront the unknown and step out of their comfort zone.

For a course on electronic evidence to be both intellectually rigorous and practically useful, a fine balance must be struck between theory and practice. While substantive legal theories remain critical for a student's understanding of evidence law, a purely doctrinal approach to teaching is no longer feasible and the emphasis must not simply be the amassing of legal knowledge, but also the practical application of evidential rules in the realm of electronic evidence. As will be seen, much of the knowledge and skills which are essential to advising clients and litigating on issues relating to electronic evidence are highly specialized, unique, and often a complex mix of law and technology very different from what would be expected in a traditional substantive legal curriculum. To streamline and contextualize the syllabus, as well as more importantly to adequately prepare students for legal practice, the best way to organize the course on electronic evidence would be for it to track the life of a real action. As argued above, the teaching of modern evidence law can no longer be largely built around rules on the admissibility of evidence. There must be a fundamental shift in focus to regard issues of evidence law as being part of the entire process of litigation.

Beginning with the first stage of that process, evidence gathering in the context of electronic evidence is no longer a straightforward task of sifting through files of hard copy documents. Some specialized know-how is crucial. A good electronic evidence course should provide students with a solid grounding in the basics of forensic extraction and examination. This is particularly important for would-be prosecutors and practitioners at the criminal Bar. In this regard, it may be necessary for there to be some engagement with commercial providers of forensic data collection services who can then provide insight into the types of software and equipment available and the process by which evidence is extracted, retained and presented in order to maximize chances of admissibility in court.

Once the electronic evidence are extracted and gathered, their proper retention and preservation is an important topic in its own right. While such issues may not have featured as prominently when dealing with traditional forms of hard copy documentation, these are real and practical issues in the realm of electronic evidence, as evidential integrity cannot be assumed given its inherent susceptibility to alteration. The coverage of a course on electronic evidence must therefore extend to the obligations of both client and lawyer in respect of the preservation of documents. In this regard, it would be useful for students to have some insight into the American approach towards the spoliation of evidence[22] and the requisite standards to be met before sanctions are imposed.[23] The instructor should also have basic familiarity with typical document retention policies of companies and conduct client-advice exercises to hone students' advisory skills.

As the course charts the entire process of litigation, beyond issues of collection, retention and preservation of evidence, another topic unique to electronic evidence would be the presentation of such evidence in court. In part due to the relative inexperience of most courts in receiving such evidence, as well as the different and complex nature of electronic evidence, there is scope for substantial thinking and development of an effective approach to the presentation of such evidence in the most accessible format to the court. Admittedly, this is very much an area relating more to legal practice, but in line with the role of the law teacher as a gatekeeper, a

22 *Flury v Daimler Chrysler Corp., 427 F.3d 939.*
23 *Connor v Sun Trust Bank, 546 F. Supp. 2d 1360 (N.D. Ga. 2008).*

well-tailored and practically oriented course that focuses also on the effective presentation of electronic evidence in court would go some way to more adequately prepare the law students for modern litigation. On this front, it is suggested that insights from experienced litigators can be canvassed in order to give the students an idea as to the preferences of judges and juries, and provide perspectives on the most effective way to present data that may not be easily understood by those who are not trained to do so. Importantly, students should also be made aware of the potential dangers associated with the improper use of graphical technology to present evidence in court.[24]

Even though it has been suggested that there should be an almost paradigmatic change in the way evidence law is taught in the specific context of electronic evidence, the issue of admissibility of evidence of course remains critical in any course on the law of evidence. In this specific area, at this nascent stage of development, a course on electronic evidence would inevitably be building upon traditional legal doctrines of evidence. An important component of the course would therefore be its intersection with traditional rules of evidence, such as the best evidence rule, the rule against hearsay, rules relating to the authentication of evidence and whether modifications are required to those rules. To take an example, it is an interesting question whether a distinction should still be maintained between primary and secondary evidence since the rule traditionally applied to paper documents where production of the original document would be preferable to the copies of that document. However, these concepts take on a different dimension in relation to electronic evidence. In the context of an e-mail, for instance, it is difficult to justify why it is necessary for a printout of the e-mail to be taken from the sender's e-mail inbox rather than the recipient's. Students should thus engage in the intellectual exercise of considering and applying the traditional doctrines to real life situations involving such evidence and debating whether modifications to these principles are necessary to keep up with the times.

Conclusion

To conclude, it is no longer sufficient in this day and age to assume that a recitation of the exclusionary rules on evidence will be sufficient to prepare young lawyers for a life in the world of litigation. It has been argued that it is necessary instead for a proper intellectual framework to be provided in order for students to view issues relating to electronic evidence as a seamless whole. At the end of the day, lawyers are problem solvers for their clients. In recognition of this, the law teacher must play not just the role of gatekeeper who imparts not just substantive legal knowledge, but also knowledge of the requisite skill set to effectively serve the clients' needs.

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24 Electronic Evidence, p. 221.

