Contract Formation in Open Electronic Networks - Chapter 1 Introduction

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CHAPTER 1  INTRODUCTION

IN APPLYING OUR OLD LAW TO CYBERSPACE, WE SEE MATTERS AFRESH.¹

THE THESIS

[1.1] This thesis examines the formation of contracts in open electronic networks. It submits that the technologies inherent in the operation of such networks change the manner contractual statements are presented, transmitted and attributed. Open electronic networks create a novel transacting environment, modify the indicia of contractual intention and put strain on traditional analytical models.

Contract law evolved on the basis of certain assumptions: the idealized model of face-to-face communications between humans² and the existence of tangible carriers.³ When these assumptions can no longer be made, the application of contract formation principles encounters numerous difficulties.

First, there are certain pre-existing problems, which were never directly confronted by the courts. Many of these problems concern subtle differentiations in the formulation of legal principles, which have not been necessary and attracted no judicial attention.

Second, there are new problems, which have no equivalents and which do not easily fit in the framework of traditional legal institutions. One set of problems relates to the lack of tangible carriers and the fact that interactions over open electronic networks are a hybrid between conduct, writing and electronic documents. Another set of problems relates to the fact that contractual statements are not only transmitted but also processed by various intermediating systems and the system of the addressee. This results in a number of inherent risks, which must be allocated using traditional principles. The latter developed in an environment far less complex than the one created by open electronic networks.

¹ J Sommer, Against Cyberlaw (2000) 15 Berkeley Tech L J 1145 at 1150
² Carter on Contract [01-080]
Third, there is hype. The impact of certain technologies is being overstated while the importance of others is being played down or ignored. This results in misplaced focus: much legal analysis was devoted to so-called digital signatures and their role in fulfilling formal requirements. Little attention was directed to the contractual implications of hypertext or how differences between network environments affect the ability to communicate intention.

The technologies are new, but it is not suggested that new principles are required or that a parallel legal regime must be created to accommodate on-line contracting. The revolution in how people communicate and conduct business need not result in a revolution in contract law. Contract law can absorb technological change. This process, however, must be based on a sound understanding of technology and on an acknowledgement of the differences between the real world and the new environment.4

This thesis aims to distinguish between those technologies, which remain transparent and do not interfere with the contract formation process and those, which change this process. It also attempts to discern those contract formation principles, which are directly affected by the novel technologies. It does not question their impact, but examines the degree to which they change the process of contract formation.

The thesis steers clear of generalizations and broad statements relating to contract law as a whole or to the relationship between law and technology. The focus is on one area of contract law: formation. This area bears the brunt of technological change. This thesis examines the application of contract formation principles, without questioning the substantive rules of contract law. Three basic questions arise in the context of open electronic networks:

1) Who are the parties to the contract?
2) When was the contract formed?
3) What are its contents?

To provide answers to the above questions, the thesis follows the contracting sequence and explores how the individual stages of reaching agreement are affected by technological factors.

This thesis is an ex post factum justification of existing practices referred to as electronic commerce. The latter term is commonly understood as the “use of digital systems to create/perform commercial transactions.”5 Irrespective of the business model and the type of contractual subject matter, all e-commerce transactions rely on the same contract formation principles. Ultimately, “[a]lmost every question posed by business dealings in cyberspace can be reduced to a question involving contract law.”6

The thesis examines first time transactions between strangers, absent prior agreement, in open, inherently anonymous and insecure networks.

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Roadmap

[1.2] This chapter presents the concepts “open electronic networks” and “principles of contract formation.” Next, it explains the difference between principle and its application. The scope of discussion is delineated by differentiating the arguments made in this thesis from the standard approaches adopted when dealing with electronic contracts. This chapter emphasizes the general reluctance to confront technological change and the resulting refusal to analyse the relevant technologies. As this thesis distances itself from the concepts of media neutrality, technological neutrality and functional equivalence, those three concepts are discussed in more detail.

To illustrate the problems inherent in contracting over open electronic networks, the predecessor of e-commerce, Electronic Data Interchange (“EDI”) is presented. The chapter also briefly introduces the main model laws and e-commerce statutes, which serve as a point of reference throughout the discussion. It concludes with an overview of the thesis’ general structure.

THE BASIC CONCEPTS

Contract Formation

[1.3] Contract formation is the process of arriving at agreement. “Formation” is a broad term covering the initial contracting stages, including negotiations and invitations to make offers. There are many ways of forming a contract: parties may negotiate orally or in writing, they may engage in specific conduct; contracts can also be formed by signature or the exchange of written documents. As long as the requirements of consideration, intention to create legal relations, certainty and completeness are met, the law will enforce the promises made during the formation process.

Intention reflects the consensual basis of contract law, consideration is a construct invented to distinguish between those promises, which are enforceable as contracts from those, which are not. “Offer and acceptance” are conventional means by which the intention of the promisor (offeror) and promisee (offeree) are shown to coincide. Whether a particular communication is an offer or an acceptance is a question of intention, determined on the basis of the rules governing the construction of communications. It is contractual intention, or rather the objective manifestations thereof, that encounters practical difficulties when ported into a networked environment. It is the analytical tools of ascertaining contractual intention, the tools of “offer and acceptance,” that become more difficult to apply.

Neither intention nor consideration is a “principle” of contract formation. They are the prerequisites of agreement. The new transacting environment changes nothing in this regard: intention, consideration, as well as certainty and completeness, are required for contracts formed over open electronic networks and for contracts formed in the real world.

The existence of intention is determined by construing the statement allegedly constituting an offer or an acceptance. Whether a particular statement constitutes an offer or an invitation to treat, whether an offer has been accepted are questions of construction. “Offer and acceptance” is an analytical model comprising a set of interpretative rules to determine when an offer is made and when a manifestation of assent is present. The rule that acceptance must correspond to the offer is no more that

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7 Carter on Contract [02-101]
8 Carter & Harland [301]
9 Carter & Harland [202]
10 Carter on Contract [02-040]
11 Carter on Contract [02-050]; Hyatt Australia Ltd v LTB Australia Ltd [1996] 1 Qd R 260 at 264 per McPherson JA; The Law of Contract para 2.2
a statement that intention to accept cannot be found if the acceptance does not mirror the offer. From a practical perspective, they constitute the principles of contract formation as they identify "those circumstances in which the parties who are alleged to have become contractually bound will be regarded as having reached agreement." In this thesis the "principles of contract formation" are synonymous with the rules of deploying the analytical tools of offer and acceptance. They are distinguished from the substantive rules of contract law. Neither the offer-acceptance model, nor the substantive rules underlying its application are challenged or questioned.

The question “what did the parties really promise?” does not always require a strict analysis in terms of offer and acceptance. Contracts may also be formed by conduct or by the execution of documents. Open electronic networks render it difficult to maintain this distinction. Writing triggers specific rules of construction. Writing, however, presupposes the existence of tangible carriers: “writing” and “document” are often used interchangeably. On-line, the existence of both “documents” and “writing” appears problematic. If there is no writing, then all on-line contracts are oral or formed by conduct. If there is writing, one must acknowledge the possibility to have “writing” without "documents."

While harnessing a sequence of electronic acts into “offers” and “acceptances” may appear artificial, only the offer-acceptance analysis permits the establishment of the precise moment of formation. In other words, even if the division between written documents and conduct was not ambiguous, the analysis of on-line contract formation would revert to the offer-acceptance model as only the latter enables the dissection of the contracting sequence into individual components and the assessment which act constituted acceptance and when it became effective.

Establishing the exact moment of formation may be crucial. First, it determines where the contract is made. Second, the moment of formation has a direct bearing on the contents of the contract: if one of the parties attempts to incorporate his or her terms, those terms must generally be brought to the notice of the other party before the final act concluding the contract. Similarly, statements made during the formation process may become part of the contract as representations or warranties. In both instances, acceptance is the final cut-off point for establishing the contractual obligations of the parties. The latter derive from the communications exchanged during the formation process. Although the methods of incorporating terms are usually treated as a separate topic in textbooks on contract law, they form part of contract formation and are therefore included in this analysis. After all, ascertaining whether agreement has been reached and ascertaining its terms are interrelated processes.

While “offer and acceptance” is the best available analytical tool, its limitations must be recognized. One of them is the arbitrariness of the offeror — offeree positions. Each position has important legal implications. The offeror is regarded as the master of the offer, prescribing the contracting procedure, including the method of acceptance, and retaining the power to revoke his or her offer. The offeree has the power to bind the offeror by a simple “yes.” When attempting to “fit” whatever happens on the computer screen into the slots of “offer” and “acceptance,” it must not be forgotten that the positions of offeror and offeree may be arbitrary or easily manipulated and therefore the assumptions inherent in these positions cannot be made. For example, it cannot always be assumed that the offeror imposed the method of acceptance.

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13 Carter & Harland [201]
14 *The Law of Contract* paras 2.4, 2.5
15 Carter on Contract [03-290] referring to Lord Denning’s suggestion in *Butler Machine Tool Co Ltd v Ex-cell-O Corp (England) Ltd* [1979] 1 WLR 401 at 405
16 Chissick & Kelman p 79
17 Carter & Harland p[102]
It must also be remembered that the offer and acceptance model came into being with the advent of the post.\textsuperscript{19} Its application outside the realm of paper documents will, by necessity, encounter a host of problems. The difficulties in applying this model are not indicative of its shortcomings but derive from the fact that mapping “models” onto real-life situations is inherently complicated.

This thesis does not, however, deal exclusively with the application of the offer and acceptance model on-line. It discusses broader problems of contractual intention, the existence of which must be evaluated against a new set of circumstances.

Open Electronic Network

[1.4] The first question that comes to mind when reading the title of this thesis is: why not “contract formation on the Internet?” The term “Open Electronic Network” is preferable for conceptual and technical reasons.

Conceptually, although the term “Internet” has a number of technical definitions,\textsuperscript{20} it has meant different things to different people.\textsuperscript{21} This thesis disassociates itself from the somewhat negative (at least in the author’s view) perception of the term “Internet.” The term was considered fashionable, reflecting the hype surrounding e-commerce. The term is also representative of a wholesale approach: it is the Internet as such that allegedly requires a change in the law or the creation of new law. This leads to many oversimplifications and a failure to appreciate the variety of activities enabled by the Internet and the diversity of technologies comprising it.\textsuperscript{22} This thesis adopts a “no-nonsense” approach to the Internet and sees it for what it is: an open electronic network, not an “information highway” or “cyberspace.”

Technically, the Internet is a network of networks, a combination of internets, an amalgam of multiple technologies, relying on the TCP/IP protocol stack. Most importantly, the Internet is an open and electronic network. The thesis uses a descriptive term instead of the slightly stale “Internet.” The focus is on its main characteristics: openness, which implies universal access from any place in the world and a “global stranger-to-stranger model.”\textsuperscript{23} “Open” implies reliance on a set of open standards permitting interoperability between various networks.\textsuperscript{24} “Open” also reflects unlimited access, the possibility to join the network without subscription to system rules.\textsuperscript{25} “Electronic” refers to the intangible and evanescent nature of all communications, which - by definition - are transmitted and presented in the form of electrical impulses.\textsuperscript{26} Being “electronic” is implicit in being networked. The term “network” indicates the interconnection of multiple computers, the existence of various networks and the deployment of technologies that can only flourish in a distributed environment.

Solely for the sake of brevity, “open electronic network” is used interchangeably with “Internet.” “Contracts formed in open electronic networks” is used interchangeably with “on-line contract.”

\textsuperscript{19} The Law of Contract para 2.4
\textsuperscript{20} see Chapter 2
\textsuperscript{21} for a discussion of the historical approaches to the Internet see: M A Geist, The Reality of Bytes: Regulating Economic Activity in the Age of the Internet (1998) 73 Wash L Rev 521 at 531-554
\textsuperscript{22} M A Geist, above at note 21 at 525
\textsuperscript{23} J K Winn, Open Systems, Free Markets, and Regulation of Internet Commerce (1998) 72 Tul L Rev 177 at 1213; see also: Greenstein & Feinman p 116
\textsuperscript{24} L Lessig, above at note 4 p 27
\textsuperscript{25} HB Thomsen, B S Wheble, Trading with EDI, The Legal Issues, London 1989, p 64
\textsuperscript{26} see: UNCTAR Model Law on Electronic Commerce with Guide to Enactment, Art 2 and Guide to Enactment para 30, equating “electronic” and “optical” means
THE COMMON ARGUMENTS

Principles and their Application

[1.5] This thesis submits that contract formation principles remain unchanged but their practical application may change. The question is not: do traditional principles apply? but how do they apply?

“There is no real conundrum as to whether contractual principles apply to Internet contracts. Basic principles of contract law continue to prevail on contracts made over the Internet. However, not all principles will or can apply in the same manner that they apply to traditional paper-based and oral contracts. It is important not to force into a Procrustean bed principles that have to be modified or discarded when considering novel aspects of the Internet.”

There are rules of construction deployed to establish what constitutes an offer and what constitutes an acceptance. There are rules regarding the differentiation between offers and invitations to treat and rules concerning the effectiveness of acceptances. Although principles governing the effectiveness of communications can hardly be subsumed under “rules of construction,” they form part of the analytical model and are based on the expectations or implied intention of the parties. It is the practical application of these rules that is altered by the on-line environment.

An example is the differentiation between offers and invitations to treat. An offer is characterized by a definite intention to be bound by subsequent acceptance. There are rules facilitating the distinction between those manifestations that evince such intention and those, which do not. A person maintaining a shop display or publishing an advertisement is generally regarded as making an invitation to submit offers, whereas a person holding out a vending machine is regarded as making an offer. How should websites be evaluated if they combine elements of advertisements, shop displays and vending machines? Similar problems arise with the effectiveness of acceptances and the division into instantaneous and non-instantaneous methods of communication.

The intention of the parties remains paramount, both on-line and in the real world. Intention is attenuated by the objective theory of contract and based on an assessment of what the parties said or did. Intention is evaluated as it has been reasonably understood by the other party.

In the real-world, manifestations of intention take the form of words, spoken or written, and conduct. In on-line transactions, intention is manifested through electronic messages, websites and interactions with graphical user interfaces, such as “clicks,” “click-drags” and the filling out of on-line forms. Conduct no longer occurs in a familiar setting, the context is not always obviously commercial, the communicative signs are new. The “circumstances” which the law treats as giving rise to agreement have changed, the indicia of intention are different. Another factor to be considered is that one of the parties acts in a self-designed transacting environment and prescribes the communication rules, while the other is limited in the range of responses and subjected to technical manipulations.

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27 Chwee Kin Keong v Digilandmall.com Pte Ltd[2004] SGHC 71 at 91 per V K Rajah JC
28 Carter on Contract [03-040]
30 Carter on Contract [01-090]; The Law of Contract para 2.8
32 as per Lord Diplock in Paal Wilson & Co A/S v Partenreederei Hannah Blumenthal[1983] 1 AC 854 at 915
33 Carter & Harland[205]
34 Carter & Harland[203]
While the rules of construction remain the same, the novel environment renders it difficult to establish what the parties said or did: how can the offer and acceptance model be applied to sequences of clicks? What distinguishes a “click” expressing acceptance from a “click” serving navigational purposes?

A departure from traditional approaches

[1.6] The Internet has been mainly discussed in relation to freedom of speech, privacy, national security and intellectual property. Whereas other areas of law openly recognized the challenges posed by the Internet, or by specific Internet-based technologies, contract law maintained a narrow focus, discussing the Internet mainly in relation to formal requirements (i.e. the validity and enforceability of electronic contracts) and jurisdictional issues. The emphasis remained on the electronic form and the trans-border character of on-line transactions.

This thesis argues that the electronic form does not pose an obstacle to valid on-line transactions as the substantive rules of contract law permit intention to be manifested in any manner. There being no general requirement for contracts to be in written form or to be signed, formal requirements are an exception not the rule. Generally, the absence of “writing” and “signatures” does not threaten the validity or enforceability of contracts or pose an obstacle to their formation on-line.

“Writing” as a formal requirement must, however, be distinguished from the existence of writing. In many circumstances writing implicitly underlies a number of principles of contract law without being a formal requirement. It is not the alleged absence of “writing” but the absence of “documents” that is the source of complications. It is not the electronic form that causes legal challenges, but the emergence of hypertext and asynchronous javascript, both of which “destabilize” and distribute contractual content. It is not the instantaneous character of electronic communication methods, but the combination of speed of transmission with uncertainty of delivery and the introduction of presence protocols, that force a re-thinking of traditional legal approaches.

A valid and enforceable contract is of little value if there is nobody to enforce it against and its terms are uncertain. There must be consistency in the application of contractual principles, certainty regarding the moment of formation and the procedures required to incorporate terms. This thesis is not concerned with formal requirements or with jurisdictional issues. Antecedent questions are whether and when agreement has been reached or whether its parties can be determined. It is admitted, however, that certain defects in the formation process may directly affect both the validity and the enforceability of a contract.

Embracing Technology

[1.7] The correct application of contract formation principles is only possible if the novel technologies are examined and included in legal analysis. The point of departure can no longer consist in an endless repetition of analogies or the creation of elaborate metaphors. The “unreflective use of metaphors can lead lawyers to take for granted the ‘realities’ that metaphors enable,” while an inaccurate understanding of technology leads to inappropriate analogies. Both result in the application of the

35 Carter on Contract [02-060]
36 Carter on Contract [01-001]
37 Carter on Contract [01-130]
incorrect principle or - “the creation of bad law.” Legal arguments must be based on correct technical assumptions. This requires an understanding of the technologies behind specific methods of attributing, transmitting or presenting information.

This thesis attempts to strike a balance between technophobes and technophiles, between those who claim that new rules are needed and those who revert to comfortable (yet incorrect) metaphors and analogies, such as electronic signatures or electronic agents. Many parts of the discussion are “technical.” This is necessitated by the fact that many legal arguments are built exclusively on technological premises and in many instances the technical justifications are incorrect. Accordingly, this thesis confronts the existing doctrinal approaches to on-line contracting and attempts to “set things straight.” While focusing on technology, it aims to avoid “disdain for history, unnecessary futurology and technophilia.” The point of departure is always the legal principle, not the technology.

The thesis also avoids a “wholesale” approach to the “Internet.” There is no such thing as “communications over the Internet.” There is the world-wide-web, email, instant messengers and other methods of communicating information. Each has its own implications for contract formation. Accordingly, this thesis addresses not the Internet itself but individual technologies. Communication methods are analysed in order to determine whether an acceptance becomes effective upon dispatch or upon receipt, HTML files is examined to determine the contents of the contract, authentication technologies are evaluated to establish who is accountable for an electronic act, graphical user interfaces are analysed to ascertain the existence of contractual intention. The application or choice between alternative principles must be based on a sound understanding of the underlying technologies and appreciate the complexities of the novel transacting environment.

Functional Equivalence, Technological- and Media Neutrality

This thesis departs from the principles of media and technological neutrality as well as from functional equivalence. Although these concepts underlie most legislative efforts and academic approaches, it does not assume that legal principles are media neutral, legal solutions should be technologically neutral or that functional equivalents are necessary. While their importance for the validation and enforceability of on-line contracts should not be underestimated, their limits must be recognized.

Media neutrality, technological neutrality and functional equivalence are not well defined or fully conceptualized terms. Media neutrality is often difficult to distinguish from technological neutrality. Both refer to the independence of legal principles from the technologies and media by means of which parties manifest agreement. Both assume that the same principles should apply in the same way, regardless of the medium or technology used. To complicate matters, media neutrality can be synonymous with functional equivalence.

The “Internet” is often referred to as a “medium” and as a “technology.” Interestingly, “paper” is also referred to as a medium and a technology. If both the Internet and paper can be regarded as

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40 See: F H Easterbrook, Cyberspace and the Law of the Horse (1996) U Chi Legal F 207: “Beliefs lawyers hold about computers and predictions they make about new technology are highly likely to be false.”
41 The term “cyberspace” or the prefix “cyber-” are avoided to distance this thesis from any associations with arguments favouring the creation of a separate world governed by its own rules. See: D R Johnson & D Post, Law and Borders – The Rise of Law in Cyberspace (1996) Stan L Rev 1367
42 J Sommer, above at note 1 at 1158
43 Report p 28
44 Electronic Transactions Bill 1999, Explanatory Memorandum, p 2
45 Report para 4.5.3
technologies, technology- and media neutrality seem too vague to provide guidance whether legal principles should apply identically irrespective of the method of transmission or the physical carrier of information. Furthermore, if the Internet is regarded as a single technology, then a technology neutral approach implies that the same principles apply uniformly to all Internet-based communications. This fails to appreciate the diversity of interactions enabled by the Internet and leads back to the “wholesale” approach. If, however, email, instant messengers and the web are regarded as individual technologies, then a technology neutral approach is impossible as different methods of communication may trigger the application of different principles. Thus, a non-discerning approach can cause prejudice to the contracting parties.

The thesis also distances itself from the concept of “functional equivalence.” Functional equivalence is based on an analysis of the “purposes and functions of the traditional paper-based requirement with a view to determining how those purposes or functions could be fulfilled through electronic-commerce techniques.” It aims to replicate real-world concepts electronically and enable the uniform application of legal principles to all technologies and methods of communication.

There being no “one-for-one correspondence between cyberspace and the physical world,” functional equivalence is often impossible to achieve. Creating electronic, functional equivalents of “writing” and “signatures” forces a redefinition of these concepts and equipping them with qualities they may not originally possess. An example is the equivalence of handwritten signatures and so-called “digital signatures.” Depending on its definition, the term “signature” may encompass a biometric link between a person and the output of his or her act. Biometric association is difficult, if not impossible, to replicate online. Even if the definition omits the biometric link, its necessity is implicit in one of the functions allegedly fulfilled by signatures: that of identifying the signer. Accordingly, the electronic equivalent of “signature” becomes detached from the original concept and forces the adoption of a specific technology. Functional equivalence also ignores the fact that many electronic phenomena do not have real-world equivalents.

It could be claimed that if a legal principle is media neutral, functional equivalents should be superfluous, as the principle should accommodate the new method of communication without the need for separate constructs. Furthermore, prescribing the criteria for a functional equivalent indirectly imposes a technology, if only one technology can fulfill these criteria. Consequently, the co-existence of functional equivalence and technological- or media neutrality appears questionable.

It can also be questioned whether there are three discrete concepts: media neutrality, technological neutrality and functional equivalence. It is tempting to say that it is the same concept couched in different terms. All three prohibit the discrimination of electronic methods of communication and prescribe treating them at par with traditional methods of conveying contractual intention. All three aim at ensuring that the formal requirements of “writing,” “signatures” and the provision of documents in their “original” form can be fulfilled electronically. This thesis, however, is about formation, not formalities. Accordingly, the usefulness of the aforementioned concepts appears limited.

Media neutrality, technological neutrality and functional equivalence also ignore the differences between the new transacting environment and the “old” world of letters and face-to-face dealings. They confirm that contracts can be formed electronically but they do not facilitate the application of contract

46 Questions like “does the postal acceptance rule apply to email?” should not be asked by those, who support technology neutrality, as one principle should apply uniformly to all communication technologies. For a detailed discussion see Chapter 6.

47 UNICITRAL Model Law on Electronic Commerce, Introduction, para 15, see also: Report p. 2, which describes functional equivalence in terms of “paper-based commerce and electronic commerce should be treated equally by the law”, and “technology neutrality” as “law should not discriminate between forms of technology”.

48 M A Lemley above at note 38 at 526

49 See Chapter 4
formalization principles. Most importantly, they create a number of unforseen side-effects: the requirements of “writing” can be met electronically, but does such “writing” trigger the application of the parol evidence rule? If so, what are the four corners of the document? Similarly, the functions of “signatures” can be replicated electronically, but do such “signatures” impact on the division between terms incorporated by notice and terms incorporated by signature? If a “click” can be a signature (at least under some of the model regulations), does such “signature-click” dispense with the requirement of notice? It is often overlooked that the existence of “signatures” and “writing” has wider implications than just meeting formal requirements.

**Electronic and Networked**

[1.9] Analyses of on-line contracting traditionally focus on the electronic form of transactions. This thesis focuses on the fact that contracts are formed on a network. Most challenges in the application of contract formation principles are unrelated to the electronic form: if all computers were stand-alone units, their only output were Word documents and if such documents were exchanged on CD-ROMs, this thesis would not be necessary. The most important implications of “being networked” are:

1) Contractual contents consists of electronic files, often distributed over multiple systems;
2) The electronic files are intangible, unstable, dynamic, interactive;
3) All communications are at a distance;
4) Communications are anonymous, in the sense that the sender cannot be easily identified from the message, parties must therefore rely on remote authentication technologies;
5) Communications are based on the client-server model;
6) Communications are fast but unreliable;
7) Senders do not know the addressee’s environment: how, when and whether their information will be received and displayed by the terminating system.

The combined effect of being networked and electronic creates a new transacting environment. This “new environment” encompasses the interactive and non-linear character of the world-wide-web, the speed of email or instant messages and the automated responses generated by web-applications, to name a few.

**ELECTRONIC DATA INTERCHANGE**

[1.10] The legal and technical complexity of contracting over open electronic networks cannot be fully appreciated without a discussion of Electronic Data Interchange (“EDI”), which is the electronic exchange of structured business data in standardized formats. EDI reduces paper handling and input errors, facilitates “just-in-time” delivery and decreases administrative and processing expenses. Unlike email and telex, which involve free text in human readable form, EDI communicates “coded information in a structured format.” EDI eliminates human involvement and enables the exchange of information directly

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between computers.\(^\text{53}\) Not all EDI interactions result in the formation of a contract, some are made in the performance of an existing trade relationship, others are operational or administrative in nature.

The technical specifications for the electronic interchange of business data are called “standards.” Standards prescribe the formats, character sets and data elements used in the exchange of documents and forms.\(^\text{54}\) There are two main EDI standards: the international UN/EDIFACT and the North American ANSI ASC X 12.\(^\text{55}\)

EDI partners may exchange information directly (e.g. by a dedicated line), or use the services of a third party provider, also known as value added network (“VAN”). VANs not only facilitate the transmission of messages but also provide storage, security, translation between standards, reformatting and conversion services.\(^\text{56}\) EDI partners may use different VANs, who exchange information on the basis of interconnect agreements.

EDI involves multiple contractual relationships:\(^\text{57}\)

- the underlying trade relationship, such as a sale of goods.
- the contract governing the electronic exchange of information, which structures the communications relationship between the partners, called “interchange agreement” or “trading partner agreement.”
- the system rules or network agreements, which govern the relationships between each EDI partner and its VAN.\(^\text{58}\)

The interchange agreement and the network agreement are independent of the underlying commercial transaction. Interchange agreements resolve legal uncertainties existing in the absence of clear rules governing electronic contracting.\(^\text{59}\) They cover the technical aspects of communication, such as the standards to be used, selection of third party providers and maintenance of information systems. They also govern the practical aspects of data exchange, such as the obligation to acknowledge receipt, authentication, confidentiality, security, incorporation of terms, validity and enforceability. Interchange agreements often deal with issues of contract formation and prescribe rules governing the effectiveness of messages.\(^\text{60}\) Interchange agreements can be based on one of the model agreements proposed by international organizations\(^\text{61}\) or respective industrial sectors.\(^\text{62}\)

Network agreements with VANs regulate risk allocation for computer errors, network downtime and security procedures, amongst others. VANs often provide for minimum service levels and guarantee a certain quality of service making transmission and intermediate processing more reliable and secure.\(^\text{63}\)

\(^{53}\) Greenstein & Feinman p 106
\(^{55}\) B Wright, J K Winn, above at note 51 para 2.05
\(^{56}\) Greenstein & Feinman p 104; G P Schneider, above at note 54 p 223
\(^{58}\) A H Boss, above at note 57 at 37, 38
\(^{60}\) A H Boss, above at note 57 at 63; J K Shim et al, The International Handbook of Electronic Commerce, New York 2000, p 159
\(^{61}\) See e.g. ICC, Uniform Rules for Conduct for International Trade Data by Teletransmission (UNCID) ICC Publication No 452, 1988
\(^{62}\) for an example of EDI used in the automotive industry see: www.odette.org
\(^{63}\) J K Shim, above at note 60 p 153
EDI does not change the nature of the underlying commercial transaction but supplements it with what can be described as “communication rules.” The latter specifically account for the fact that communications resulting from the underlying transactions are conducted electronically. The communication rules identify and allocate the risks inherent in the electronic exchange of information. The adoption of common technical standards by both parties minimizes the risk of illegibility and failed receipt, thereby increasing the reliability of the communication process.

EDI is a closed transacting environment. Users agree on a set of contracting practices and communication standards. Legal liability and risks are allocated. Interchange agreements address basic issues of contract formation and cover most of the uncertainties related to transacting over electronic networks. In EDI, contract formation occurs within a legal framework specifically designed for electronic, networked communications. Open electronic networks are, as the name indicates, open. Transactions occur absent communication rules and a subscription to a common set of procedures. The transmission and intermediate processing is not handled by VANs but left “at the mercy” of an inherently unreliable and insecure transmission channel. In other words, not only are the communication risks greater, but due to the absence of network- and interchange agreements they remain unallocated. Contracts formed over open electronic networks exist in a grey zone of novel risk and unclear default rules.

MODEL LAWS AND E-COMMERCE STATUTES

[1.11] This thesis refers to two model laws, one act and one international convention. All were specifically drafted to facilitate electronic contracting.

(a) The UNCITRAL Model Law on Electronic Commerce

The UNCITRAL Model Law on Electronic Commerce (“MLEC”) provides a template for national legislatures and serves as a guide for drafting contracts to overcome difficulties presented by electronic commerce. The MLEC validates contracts formed through electronic means, sets a number of default rules for contract formation, defines the requirements for electronic functional equivalents of writing, signatures and originals. In particular, the MLEC attempts to accommodate alternatives to paper-based communication. The solutions proposed by the MLEC serve as examples of early attempts to resolve legal uncertainties pertaining to transactions in the electronic environment. It identifies a set of problems, which occur in both common and civil law countries. The MLEC applies to commercial actors only.

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64 J B Ritter, J Y Gliniecki, Electronic Communications and Legal Change: International Electronic Commerce and Administrative Law: The Need for Harmonized National Reforms (1993) 6 Harv J Law & Tech 263 at 266; see also: Report p 109, for a comparison of risks of transacting in closed and open networks: “In the Internet or open system context, while contracts will govern the terms of individual transactions between the parties, generally there will be no contract which governs the ongoing rights and responsibilities of the parties more broadly in the sense that a trading partner agreement does.”

65 Toh See Kiat p 345

66 This thesis observes the growing phenomenon of forming closed user groups and requiring subscription to terms of use before accessing a website, which can be regarded as attempts to compensate for the absence of communication rules. See also: Chissick & Kelman p 61


68 MLEC Guide to Enactment para 24
(b) The Electronic Transactions Act (Commonwealth) 1999
The Electronic Transactions Act (Commonwealth) 1999 ("ETA") \(^{69}\) builds on the MLEC but introduces a number of modifications regarding the definition of certain key terms relating to contract formation. Most discussions regarding the MLEC also cover the ETA. The Australian legislation is examined in greater detail only where its provisions depart from the wording of the MLEC. The exact scope of ETA’s application depends on the definition of “laws of the commonwealth,” i.e. whether it is limited to the laws passed by the Commonwealth or includes common law and the rules of equity. \(^{70}\) The ETA applies to consumers and commercial actors, as well as to dealings with the government.

(c) The Uniform Electronic Transactions Act 1999
The Uniform Electronic Transactions Act 1999 ("UETA") \(^{71}\) has been proposed by the North American National Conference of Commissioners on Uniform State Law (NCCUSL) and has been adopted, in varying versions, by 48 states. Its purpose is to provide uniformity in such areas as retention of paper records, validity of electronic signatures and errors in electronic communication, amongst others. Although UETA purports to be of procedural character, \(^{72}\) it contains provisions relating to contract formation. Is deals not only with on-line transactions but with broader issues of consumer protection and governmental filings. UETA has been criticized for the fact that it applies only if the parties agree to conduct transactions by electronic means. \(^{73}\) The UETA proposes alternative solutions to the problems dealt with in the MLEC. A comparative analysis of this act is, however, beyond the scope of this thesis.

(d) The UNCITRAL Convention on the Use of Electronic Communications in International Contracts
The UNCITRAL Convention on the Use of Electronic Communications in International Contracts ("CUECIC") \(^{74}\) contains provisions directly affecting contract formation. In particular, it deals with “invitations to make offers” (aimed at the construction of websites) as well as “errors in electronic communications.” It also modifies the “time and place of dispatch and receipt” rules proposed by the MLEC. The CUECIC framework resembles the structure of the UNCITRAL Convention on Contracts for the International Sale of Goods (CISG), in terms of scope of application, principles of statutory interpretation and declarations of variations by the ratifying countries. \(^{75}\)

This thesis does not analyse the above model laws and Acts in detail. They serve as point of reference and as examples of possible legal solutions to problems of contract formation. Their limitations must be recognized. Their primary aim is to facilitate on-line commerce and to remove “obstacles” to the validity and enforceability of on-line contracts by (a) providing that electronic contracts are equally valid as


\(^{72}\) UETA Prefatory Note, para A & B

\(^{73}\) UETA Section 5 (b); for an extensive critique see: *Nimmer & Towle* para 4.07

\(^{74}\) Convention on the use of Electronic Communications in International Contracting, adopted on 23rd November 2005.

\(^{75}\) For a detailed description of the procedural and international aspects of CUECIC see: Ch H Martin, *The UNCITRAL Electronic Contracts Convention: Will it be Used or Avoided?* (2005) 17 Pace Int’l L Rev 261
“traditional” contracts, and (b) establishing criteria for the fulfilment of the requirements of “writing,” “signatures” and “originals” in electronic form. The model laws and the Act prohibit any discrimination on the sole basis that a contract originated in electronic form. To some extent, it can be claimed that some of the problems they are trying to address are non-existent or that provisions that contracts can be formed electronically merely state the obvious. Without delving into their critique, it must be remembered that the model laws are first and foremost aimed at the removal of uncertainties that might have existed when e-commerce became a mainstream phenomenon, not with the provision of substantive rules. They generally deal with the electronic form of a statement, not with its legal effect.

The above model laws and act are discussed to the extent they deal with aspects of contract formation. Their main purpose being the ability to meet formal requirements in an electronic context, they rely on the concepts of technological- or media neutrality as well as functional equivalence. Despite aiming to promote e-commerce by providing legal certainty and confidence in electronic communications, none of the model laws or acts proposes solutions to such important matters like the time of formation. They have little (if any) regard to the fact that on-line transactions occur in a networked environment.

**STRUCTURE OF THESIS**

[1.12] The problems encountered in on-line contract formation can be divided into three groups:
- attribution
- transmission
- presentation.

Accordingly, the thesis is divided into three parts, which broadly follow the contracting sequence and examine the technologies and legal principles, which become relevant at different stages of the contract formation process. This division is introduced for analytical purposes. Individual events are analysed from different angles. For example, acceptance can be discussed in relation to the method of acceptance, the expression of assent and the time of formation. The first deals with the question whether a particular act constituted an acceptance, the second concerns methods of presentation and deals with the question whether the on-line environment requires an enhancement of the act of acceptance, the third relates to transmission methods. One technology can have multiple legal implications, one step in the contracting sequence can be analysed in relation to different technologies. Contractual intention can be presented and transmitted in multiple formats via multiple protocols. There is a clear dichotomy between web-based transactions and email, there is also a division between the web interface and methods of interacting therewith. Depending on the communication technology used to communicate intention the contract may be formed at a different moment, its contents may be more difficult to ascertain.

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76 The objectives and scope of the MLEC are described in detail in the “Introduction” to the Guide to Enactment, paras 2-21, although the wording differs between the individual acts and conventions, the “Introduction” is representative of their general objectives and scope.

77 MLEC Art 5; CUECIC Art 8; ETA Section 8, UETA Section 7


80 See generally: Nimmer & Towle paras 4.02, 4.03[7]


82 UNCITRAL ICC eTerms 2004, ICC Guide to Electronic Contracting (2004) A/CN.9/WG.IV/WP.113, “How you contract – the physical means whereby you agree to be bound to another commercial party to a specific commercial engagement – is important because how can indicate when you are committed to the other party … and it also indicates the terms of your engagement to the other party…”
Chapter 2 spells out the technological premises of the argument. Each subsequent chapter elaborates on the technologies directly relevant to the contractual issues discussed therein. The aim is to avoid repetition, relegation to footnotes or losing the reader by introducing too much detail too early.

Attribution

[1.13] “Attribution” deals with the question: to whom is a communication attributed as a matter of law? Attribution concerns issues of validity and intention. The first challenge consists in the automation of online transactions, which leads to (a) the alleged inability to discern human intention in the contracting process, and (b) the alleged necessity to separate the computer form its user and endow it with legal capacity. Chapter 3 examines theories developed around the concepts “electronic agent” and “autonomy.” It criticizes attempts to treat the computer as a separate legal entity and questions the correctness of theories, which force automation into the frameworks of other legal institutions. From a technical perspective, the discussion focuses on the functioning of websites and e-commerce applications.

The second challenge lies in the difficulty of establishing who performed a particular electronic act, i.e. who should be held accountable for its legal effects. Chapter 4 focuses on the interplay between “intention” and “identification.” It elaborates on problems of remote authentication and examines its importance for cases of so-called mistaken identity. Special attention is devoted to so-called “digital signatures.” The chapter examines their technological premises to determine their relevance for contract law. Problems of automation and remote authentication concern contractual intention and therefore very existence of agreement.

Transmission

[1.14] “Transmission” relates to the exchange of messages during the contract formation process. The aim of the analysis is to determine the exact moment of formation. Ascertaining this moment necessitates a number of separate investigations: which act constitutes an offer and which constitutes acceptance, it there a valid acceptance and when does it become effective?

Chapter 5 describes the offer and acceptance model and opposes all attempts to change this model or introduce media-specific presumptions on the basis that a transaction occurs on-line. It describes the difficulties of differentiating between offers and invitations to treat in the context of websites with integrated transactional platforms. Establishing the legal character of a particular website pre-determines the legal effect, if any, of subsequent user events. Next, the chapter deals with acceptances. The issue is usually discussed under the heading “method of acceptance,” and relates to the question: is there acceptance? The chapter examines whether acceptances by methods other than that requested in the offer are valid. Their validity is questioned in light of the changed communication landscape.

Chapter 6 poses the question, “when do electronic messages constituting acceptance become effective?” It examines whether the principle of receipt, which developed in a perfect communication scenario, can be transposed into an environment characterised by unprecedented risks. The main challenge consists in establishing the criteria for the application of either the principle of receipt or the postal acceptance rule. The technologies behind electronic mail, instant messengers and web-based transactions are examined and their implications for the time of formation are analysed. Technically, this part focuses on the speed and reliability of electronic communications. Special attention is devoted to acknowledgements of receipt, their (alleged) function as a tool of controlling the communication process and the possibility to substitute them for the “two-way” quality of face-to-face interactions. The relationships between choice of communication method, control of the communication process and knowledge of communication failure is explored.
Ascertaining the moment of formation also requires the definition of “dispatch” and “receipt.” Chapter 7 examines these concepts, paying special attention to “deemed receipt” and the addressee’s right to reject messages due to security concerns. The implications of the client-server architecture for the time of formation are examined, along with the role of intermediaries, the concepts of “designation” and “information system.”

Presentation

[1.15] “Presentation” relates to the difficulties of establishing the contents of on-line contracts. The relevant chapters examine hypertext, methods of interacting with the graphical user interface of websites and the absence of tangible documents. The main challenges consist in establishing the basic unit of information, the electronic equivalent of a page or document, and re-creating contractual context in the on-line environment, which directly bears on the incorporation of terms and the expression of assent. The chapters discuss the problems of applying paper-based concepts in an environment made of dynamic and interactive elements.

Chapter 8 asks the question: what statements were made during the contract formation process? The answer necessitates the examination of the “raw material” that might be included in the contract, i.e. which elements of the website, or which communications in general, become part of the agreement. The focus is placed on the distributed and unstable content of websites. The question “what statements were made” is followed by an analysis of so-called “linking cases,” albeit from a contract law perspective. The source and scope of contractual statement may depend on the visual and technological associations between respective elements of the website. The chapter also deals with addressee-specific factors in the objective evaluation of intention.

Chapter 9 discusses methods of incorporating terms into a contract. It attempts to map traditional incorporation methods onto the electronic environment. The relationship between incorporation “by signature” and “by notice” is elaborated on in light of the fact that the electronic equivalents of signatures carry less psychological impact than traditional handwritten signatures. The chapter also explores a number of web-specific problems: the use of hyperlinks, the inability to control the manner websites are displayed to the user and the technical manipulations from the side of the web-merchant. Last but not least, the chapter examines the risk of “invisible notices.”

Chapter 10 deals with the expression of assent. The main challenge consists in the limited expressiveness of “clicks” and other methods of interacting with the graphical user interface. The chapter revisits digital signatures albeit in relation to their ability to express contractual intention. The relationship between contract formation and the incorporation of terms is examined. The limited expressiveness of “clicks” as a method of expressing intention is discussed. A distinction between so-called “click-wrap” and “browse-wrap” agreements is made, with emphasis on those theories that require an additional act of assent for the incorporation of terms.

Caveats and Exclusions

[1.16] This thesis generally does not discuss meeting formal requirements, finding functional equivalents or devising new analogies. It does not provide an exhaustive analysis of the cases making up the “law of the Internet” or revisit every aspect of contract formation. It does not attempt to trigger a regulatory response or ignite a revolution in contract law. Quite the opposite. This thesis submits that contract formation principles are sufficiently flexible to accommodate technological change.

The thesis takes a practical approach. Theoretical discussions are balanced against practicalities and the necessity to provide transactional security. Parties must be able to anticipate, which principle
governs their transaction. Principles cannot be second-guessed by references to technical concepts and analogies based on outmoded technologies. The process of adapting contract formation principles to the new transacting environment does not enjoy a gradual development in the comfort of unhurried academic debate. E-commerce and on-line contract formation became mainstream phenomena within an unexpectedly short period of time.83

The thesis does not deal with problems of jurisdiction and the conflict of laws. Jurisdictional issues only come into play once the place of formation is established. Problems of jurisdiction can hardly be regarded as Internet-specific. Once arguments become detached from the geographical location of the intermediating servers, problems of jurisdiction raised by the Internet are identical to those arising in contracts formed over the telephone. At the same time, the borderless nature of on-line transactions raises the importance of jurisdictional issues to a higher level.84 In principle, parties are free to include “forum selection” or “jurisdiction” clauses in their agreement. The operability of such clauses depends on their successful incorporation, which leads back to the offer and acceptance model. Problems of conflict of laws are beyond the scope of this thesis. For the sake of simplicity, it is assumed that all contracting parties are situated in Australia.

This thesis has also a comparative aspect. To date, most cases in the relevant area have been decided in the United States. Accordingly, this thesis refers to US cases in order to examine the manner specific problems of on-line formation have been dealt with. The cases are not “blindly followed,” but critically examined in order to determine whether the legal solutions proposed therein can be applied in Australia. Due to the relative scarcity of materials in Australia, the thesis also frequently refers to US literature. The aim of such operation is not the revision of Australian contract law, but solely the search for possible approaches to problems created by the novel transacting environment. After all, the Internet is the same - in Australia and in the United States – and therefore the problems are the same.

Last but not least, it must be noted that:

Judges and legislators faced with adapting existing legal standards to the novel environment of cyberspace struggle with terms and concepts that the average American five-year-old tosses about with breezy familiarity.85

People who grew up using the Internet have a different approach to technology than those who acquired Internet skills (if any) later in life.86 On one hand, there are those who use collaborative software, upload pictures, share files over peer-to-peer networks and receive email on their mobile phones.87 On the other, there are those who struggle to use an ATM due to the perplexing (in their belief) user interface. The individual characteristics or the IT literacy of a person does not change the principles of contract law. It does, however, affect the way people use communication technologies, their expectations and the reasonableness of their actions.

83 S R Salbu, above at note 38 at 431; E Lee, above at note 39 at 1281
84 Chissick & Kelman p 105
85 American Libraries Ass’n v Pataki 969 F Supp 160 (SDNY 1997) per Preska J at 160
86 J Braucher, above at note 78 at 539; Nimmer & Towle par 4.02[2]