

**APPLICATION OF ELECTRONIC COMMUNICATION IN MALAYSIAN
STANDARD FORM OF CONTRACT**

SUHAILA BINTI ENDUT

JANUARY 2018

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

In The Name of God, the Most Gracious, the Most Merciful

"Are those who have knowledge and those who have no knowledge alike? Only the men of understanding are mindful. "

(Quran, 39:9)

From God To Mankind

ACKNOWLEDGEMENT

All praises be to Allah, Most Gracious, Most Merciful. It is only with His guidance and assent that this thesis comes to be realized. I am very thankful to my supervisor Dr. Norazam Othman for his guidance and encouragement in completing this paper. His patience, generous advice and constructive comments were much valuable and helpful to me in completing my writing. Secondly, my sincere appreciation goes to my family and friends whom have been my pillar of strength throughout my life journey

ABSTRACT

Communication technology is changing over the years and becoming more efficient in terms of deliverance. Today, electronic communications have a significant impact not only in everyday life but also in construction industry. The nature of construction contracts that entails a lot of information and personnel requires a voluminous exchange of information using electronic communication as the main medium. However, caution should be exercised to identify the proper method or channel of communication in executing any contract to avoid any instructions rendered null and void. In Malaysia, there are numerous types of standard forms of construction contracts available for use in the construction industry, such as PWD 203A and PAM standard form of contracts. Under these standard forms of construction contracts, only PAM contract contains clauses specifying the means of communicating notice. If a party was given an instruction in electronic communication, would the instruction be considered valid? Therefore, this research is carried out to identify the validity of application of electronic communication in construction contracts. This research is also aimed at ascertaining the types of electronic communication format which are acceptable and applicable in construction contracts. This research is basically a descriptive research and the methodology used is essentially based on case law analysis and review retrieved from Lexis Nexis and the internet database. All the cases cited in this research involved construction contracts. The analysis would reveal the admissibility and type of electronic communication in construction contracts, which are email, Short Messaging Service (SMS) and electronic storage document.

ABSTRAK

Teknologi dalam komunikasi sentiasa berubah mengikut zaman bagi memastikan penggunaannya menjadi lebih efektif. Pada masa kini, teknologi komunikasi mempunyai impak yang besar bukan sahaja dalam kehidupan seharian tetapi juga dalam industri pembinaan. Norma industri pembinaan yang mengandungi sejumlah besar maklumat dan pekerja, ia pastinya akan memerlukan pertukaran informasi secara besar yang menggunakan teknologi komunikasi sebagai medium utama. Walaubagaimanapun, perhatian yang lebih perlu dilaksanakan bagi mengenalpasti langkah atau saluran komunikasi yang betul dalam melaksanakan sesebuah kontrak untuk mengelakkan sebarang arahan yang dikeluarkan menjadi terbatal atau tidak sah. Dalam Malaysia, terdapat beberapa jenis kontrak yang digunakan seperti kontrak JKR 203A dan PAM kontrak. Hanya kontrak PAM mengandungi klausa yang menyatakan cara memberi notis. Jika satu pihak diberi arahan dalam bentuk elektronik, adakah arahan tersebut dianggap sah? Oleh itu, kajian ini diadakan untuk mengenal pasti kesahihan penggunaan komunikasi elektronik dalam kontrak pembinaan. Kajian ini juga bertujuan untuk mengenal pasti jenis elektronik komunikasi yang dibenarkan dan boleh digunapakai dalam kontrak pembinaan. Kajian ini adalah kajian jenis penjelasan dan langkah kajian yang digunapakai adalah berdasarkan analisis kes mahkamah dan ulasan yang diambil dari Lexis Nexis dan data internet. Semua kes yang dipilih adalah kes yang melibatkan kontrak pembinaan. Analisis yang dijalankan akan menunjukkan kesahihan dan jenis komunikasi elektronik yang dibenarkan dalam kontrak pembinaan, iaitu email, *Short Messaging Service* (SMS) dan dokumen simpanan elektronik.

TABLE OF CONTENT

CHAPTER	TITLE	PAGE
	DECLARATION	ii
	DEDICATION	iii
	ACKNOWLEDGEMENT	iv
	ABSTRACT	v
	ABSTRAK	vi
	TABLE OF CONTENT	vii
	LIST OF CASES	xi
	LIST OF ABBREVIATION	xiv
	LIST OF TABLES	xvi
	LIST OF FIGURES	xvii
1.0	INTRODUCTION	1
	1.1 Background Studies	1
	1.2 Problem Statement	2
	1.3 Objectives of Research	9
	1.4 Scope of Research	9
	1.5 Significance of Research	9
	1.6 Research Methodology	10
	1.7 Organization of Research	13

2.0	LITERATURE REVIEW	15
2.1	Contract Formation	15
2.1.1	Acceptance Rule in Contracts Act 1950	16
2.1.2	Standard Form of Construction Contract in Malaysia	18
2.1.3	PAM 2006 Form of Construction Contract	19
2.1.4	PWD 203 A (Rev. 2010) Form of Contract	21
2.2	Electronic Commerce Act 2006	23
2.2.1	Application of the Act	25
2.2.2	Legality of Electronic Message	27
2.2.3	Fulfillment of Legal Requirements by Electronic Means	28
2.2.4	Communication of electronic message	30
2.3	Electronic Application in Singapore, Australia and UK	32
2.3.1	Introduction	32
2.3.2	Singapore –Electronic Transaction Act 2010	33
2.3.3	Australia –Electronic Transaction Act 1999	33
2.3.4	United Kingdom –Electronic Communications Act 2000	34
2.4	Evidence Act 1950 (EA 1950)	35
2.4.1	Introduction	35
2.4.2	Court Judgment	36
2.5	Digital Signature Act (DSA)	39
2.5.1	Signature	40
2.5.2	Certification	41
2.6	Conclusion	42

3.0	RESEARCH METHODOLOGY	43
3.1	Introduction	43
3.2	Study Variables	44
3.3	Research Design	45
3.3.1	Case Study as a Research Method	45
3.3.2	Quantitative and Qualitative Approach	46
3.4	Selection of Instrument	47
3.4.1	Text Analysis Method	47
3.5	Data Sources	48
3.6	Data Collection	49
3.7	Sampling Data	49
3.7.1	Malaysia Case Law	49
3.7.2	Singapore Case Law	50
3.8	Data Filtering	51
3.8.1	Malaysia Case Law	51
3.8.2	Singapore Case Law	52
4.0	ANALYSIS OF CASE LAW	57
4.1	Malaysia Case Analysis	58
4.1.1	Yam Kong Seng & Anor v Yee Weng Kai	58
4.1.2	Odin Oilfield Services Sdn Bhd v Omega Completion Technology Ltd	59
4.1.3	Flexi Homes Sdn Bhd v Atea Environmental Technology (M) Sdn Bhd	60
4.2	Singapore Case Analysis	60
4.2.1	Chwee Kin Keong and Others v Digilandmall.com Pte Ltd	60
4.2.2	Swiss Singapore Overseas Enterprises Pte Ltd v Navalmar UK Ltd	61
4.2.3	Progressive Builders Pte Ltd v Long Rise Pte Ltd	62

4.2.4	Mitfam International Ltd v Motley Resources Pte Ltd	63
4.2.5	Joseph Mathew and Another v Singh Chiranjeev and Another	64
4.2.6	Wee Soon Kim Anthony v Lim Chor Pee and Another	64
4.2.7	SM Intergrated Transware Pte Ltd v Schenkar Singapore (Pte)	65
4.2.8	Kenso Leasing Pte Ltd v Hoo Hui Seng	66
4.3	Discussion	67

5.0	CONCLUSION AND RECOMMENDATION	68
5.1	Introduction	68
5.2	Summary of Research Findings	68
5.2.1	To Determine Admissibility of Electronic Communication Application as Per New Act	73
5.2.2	To Determine The Types and Format of Electronic Communications That May be Admissible as Notices and Evidence Due to New Act	75
5.3	Research Constraints	75
5.4	Recommendations	76
5.5	Conclusion	76
	REFERENCES	78

LIST OF CASES

CASE	PAGE
1. <i>Avnet Azure Sdn Bhd v Eact Technologies Sdn Bhd and Sapura Research Sdn Bhd (2011)</i>	38
2. <i>APP Pte Ltd v APQ Pte Ltd (2013) SGSOP 22</i>	62,71
3. <i>Chwee Kin Keong and Others v Digilandmall.com Pte Ltd [2004] SGHC 71</i>	50,54,60,69, 70
4. <i>Flexi Homes Sdn Bhd v Atea Environmental Technology (M) Sdn Bhd [2017] 7 MLJ 197</i>	50,53,60,69, 70,74
5. <i>Gnansegaran a/l Pararajasingam v PP [1997] 3 MLJ 1</i>	37
6. <i>Joseph Mathew and Anors v Singh Chiranjeev and Anors [2009] SGCA 51</i>	50,55,64,69, 71,73
7. <i>Kenso Leasing Pte Ltd v Hoo Hui Seng [2010] SGMC 8</i>	51,56,66,69,72
8. <i>Mitfam International Ltd v Motley Resources Pte Ltd [2013] SGHC 270</i>	50,54,63,69,71

CASE	PAGE
9. <i>Odin Oilfield Services Sdn Bhd v Omega Completion Technology Ltd</i> [2015] MLJU 277	50,53,59,69 70,74
10. <i>Petroliam Nasional Bhd v Khoo Nee Kiong</i> (2003) 4 MLJ 216	37
11. <i>Progressive Builders Pte Ltd v Long Rise Pte Ltd</i> [2015] SGHC 223	50,54,62,69, 71,74
12. <i>Public Prosecutor v Law Aik Meng</i> [2007] 2 SLR 814; [2007] SGHC 33	50,55
13. <i>Public Prosecutor v Lee Hong Zhao</i> [2009] SGDC 263	51,56
14. <i>Public Prosecutor v Leong Siew Chor</i> [2006] 3 SLR 290; [2006] SGHC 81	50,55
15. <i>Public Prosecutor v Rudy Lim</i> [2010] SGDC 174	51,56
16. <i>Public Prosecutor v Yew Lip Hwee</i> [2013] SGDC 83	51,56
17. <i>SM Integrated Transware Pte Ltd v Schenker Singapore (Pte) Ltd</i> [2005] 2 SLR 651; [2005] SGHC 58	65,74
18. <i>Ssangyong Engineering & Construction Co Ltd v Trident Engineering (m) Sdn Bhd and anors</i> [2015] MLJU 1124	50,51,53
19. <i>Swiss Singapore Overseas Enterprises Pte Ltd v Navalmar UK Ltd</i> [2002] SGHC 267	50,54,61,69,70

CASE	PAGE
20. <i>Wee Soon Kim Anthony v Lim Chor Pee and Anors</i> [2005] 4 SLR 367; [2005] SGHC 159	51,55,64,69,72 73
21. <i>Yam Kong Seng & Anor v Yee Weng Kai</i> [2014] 4 MLJ 47	50,51,53,58,69
22. <i>Verizon Directories Corp. v. Yellow Book USA, Inc</i> (2004)	6,79

LIST OF ABBRIEVATIONS

ECA 2006	-	Electronic Commerce Act 2006
PWD	-	Public Work Department 203A (Rev. 1/2010)
PAM Contract 2006	-	Pertubuhan Akitek Malaysia Contract 2006
IATFEC	-	Inter Agency Task Force on Electronic Commerce
UNCITRAL Model Law	-	UNCITRAL Model Law of Electronic Commerce
MSC	-	Multimedia Super Corridor
ECA 2000	-	Electronic Communications Act 2000
ETA 2010	-	Electronic Transaction Act 2010
ECEG	-	Electronic Commerce Expert Group
NOIE	-	National Office of the Information Economy
EA 1950	-	Evidence Act 1950

CCA 1997	-	Computer Crimes Act 1997
LPA	-	Legal Profession Act
SMS	-	Short Messaging Service
PDF	-	Portable Document Format
POE	-	Proof of Entitlement'

LIST OF TABLES

TABLE	PAGE
1. Table 1.1: Selection of Case Law	53
2. Table 1.2: Summary of Research Finding	70

LIST OF FIGURES

FIGURE	PAGE
1. Figure 1.1 : Research Methodology Flow Chart	12

CHAPTER 1

INTRODUCTION

Briefly, Chapter 1 describes and demonstrates the framework of overall problems as well as the statement of related issues which lead to research on the proposed development. This chapter is important as it includes discussion on the research objectives, research methodology and chapter organization.

1.1 Background Studies

The causes of a successful construction project's one of them is the practice of effective communication in the course of the project. Electronic communications have developed into a major pillar of communication in construction industry with the rising of electronic correspondence. Professionals in construction industry such as engineers, architects, quantity surveyors,- and surveyors,- suppliers as well as labourers use and apply technology as a means of communication. This varies from standard email communications to advanced online platforms. Mehedi Khan (2013) stated that electronic communication is needed for all stages in an organization

particularly in the decision making, co-ordination, control and planning stage¹. Communication between consultants, client and contractor not only carries facts and information, but it also can amount to an instruction or termination and can be used for any other purposes. Ignoring the importance of a proper communication would risk a piece of information or evidence to be rendered invalid.

Without a proper and effective communications in administering contract, good documentation management could not be achieved and as a result it would hinder any improvement and efficiency in the course of a construction project. Given the technology progress and development during the past decades, people nowadays communicate differently compared to how they did back in 10 or 20 years ago. Technology in communication not only changing our daily life but it is also affecting construction industry as well. With the change in the medium of electronic communication from Short Messaging Service (SMS) to Whatsapp application, no one knows what other possibilities and limitations of technologies in the future.

The greater risk faced in a construction contract is when any instruction or certificates issued is considered not valid if it is not channeled – in a proper manner. Thus, any safekeeping of instructions to be used in court could be hopeless and would render greater risk in managing and administering contract.

1.2 Problem Statement

¹ Khan (2013), Advantages and Disadvantages of Electronic Communication: Technology in Modern Communication. Access via <http://www.meammmarketing.com/advantages-and-disadvantages-of-electronic-communication/>

In managing and administering construction projects, communication technology is increasingly used to facilitate the giving of notices, variations to contracts and communications between the project participants². The means of communicating notices, variations, instruction and certificates are stipulated in the contract. Under clause 2.2 of PAM 2006 contract, all instructions by the Architect must be in writing and in the form of Architect's Instruction.

"All instructions issued by the Architect shall be in writing expressly entitled "Architect's Instruction" ('AI'). All other forms of written instruction including drawings issued by the Architect shall be an AI:"

*"2.2(a) upon written confirmation from the Contractor entitled "Confirmation of Architect's Instruction" ('CAI'); or
2.2(b) upon subsequent confirmation of written instruction by the Architect with an AI³"*

PAM 2006 contract also laid down the means of communicating written notice or any document must be communicated either by hand, facsimile or registered post.

"36.1 Any written notice or other document to be given under the Contract shall be given or sent by:

*36.1(a) hand;
36.1(b) ordinary mail or registered post;
36.1(c) facsimile transmission.⁴"*

² C. Sharon, M. Judith, O. Kathryn. Research paper on Electronic Project Administration in the Construction Industry, Access via [http://www.construction-innovation.info/images/pdfs/Research_library/ResearchLibraryA/Journal_article/2005-025-A/8\)_RJA_-_Electronic_Project_Admin_in_the_Construction_Industry.pdf](http://www.construction-innovation.info/images/pdfs/Research_library/ResearchLibraryA/Journal_article/2005-025-A/8)_RJA_-_Electronic_Project_Admin_in_the_Construction_Industry.pdf)

³ PAM Contract 2006 Clause 2.2

⁴ PAM Contract 2006 Clause 36.1

On the other hand, clause 5.1 in PWD 203A (Rev. 1/2010) only requires the instructions to be in writing and there is no specific means of communicating.

“The S.O. may from time to time issue further drawings, details and/or written instructions (all of which are hereafter collectively referred to as “S.O’s instructions”) in regard to-”

- (a) the Variation as referred to in clause 24 hereof;*
- (b) any discrepancy in or between the Contract Documents as referred to in clause 8.2(b) hereof;*
- (c) the removal from the site of any materials or goods brought thereon by the Contractor and the substitutions of any other materials or goods therefore;*
- (d) the removal and/or re-execution of any works executed by the Contractor;*
- (e) the dismissal from the Works of any person mentioned in clause 23.6 hereof thereupon;*
- (f) the opening up for inspection of any work covered up;*
- (g) the amending and making good of any defects whatsoever under clause 48;*
- (h) any matter which is necessary and incidental to the carrying out and completion of the Works under this Contract; and*
- (i) any matter in respect of which the S.O. is expressly empowered by this Contract to issue instructions.⁵”*

Previously, there was a study that specifically discussed on Architect’s Instructions. The study was done by Noor Azlifah Amir Sutan and it was concluded that main element in the form and format of a valid Architect’s Instructions is their

⁵ PWD 203A (Rev. 1/2010) Clause 5.1

ability of transpiring the orders to the contractors, so that the contractors clearly and fully understand how to proceed with the instructed works⁶.

The legislation of Electronic Commerce Act 2006 (ECA 2006) has paved a new means of communicating instruction or information. The Act was aimed at resolve or removing the barriers to electronic commerce and acknowledge all electronic communications and electronic transaction⁷. The definition of “electronic message” is defined in Section 5 of the Electronic Commerce Act 2006 (Act 658) as information generated, sent, received or stored by electronic means. The Act also provides legal recognition of electronic message where Section 6 states as:

- “6. (1) Any information shall not be denied legal effect, validity or enforceability
on the ground that it is wholly or partly in an electronic form.
(2) Any information shall not be denied legal effect, validity or enforceability on the ground that the information is not contained in the electronic message that gives rise to such legal effect, but is merely referred to in that electronic message, provided that the information being referred to is accessible to the person against whom the referred information might be used.”*

By virtue of Section 5, the act of sending notices in electronic form is considered valid⁸ although the PAM Contract 2006 does not specifically provides for electronic message requirements and PWD 203A (Rev. 1/2010) only requires “written” form of notices. Since there are various means and platforms of electronic communication such as Short Messaging Service (SMS), Emails, WhatsApp Message and electronic format such as Portable Document Format (PDF), Excel File Format,

⁶Noor Azlifah Amir Sutan, 2011, Valid and Acceptable Form and Format of Architect’s Instructions, Universiti Teknologi Malaysia.

⁷M. Abu Bakar (2006), Electronic Commerce Bill 2006: An Oversight Or Wanting A Different Or ...?, Malayan Law Journal Articles [2006] Volume 4 MLJ I.

⁸Section 5 ECA 2006

and etc., the validity and acceptability of the type of electronic communication in construction contracts remain uncertain.

Judge Weinstein in the case of *Verizon Directories Corp. v. Yellow Book USA Inc*⁹, stated that:

“computer technology is like the proverbial genie that has come out of the bottle. Stuffing it back inside is unlikely. It can be an instrument for good or a weapon of prejudice and manipulation. The courts will have to harness this unbound energy and set rules for its appropriate use in the courtroom. And appellate courts will have to accept yet another burden, meaningful policing of the new genie”.

According to D. Alan (2009), there are three areas of law which are contract law, business law and consumer law that commonly using the internet, email communications, electronic banking and cyberspace as medium of communication¹⁰. Therefore in recent times, the rapid development of electronic commerce has increased the usage of the internet for business transactions¹¹. It is often executed over the internet and computer devices such as smartphones which make communication via electronic is essential towards a new millennium¹².

The passing of the ECA 2006 is to regulate online commercial dealings and to safeguard electronic transactions in a safer and secured environment¹³. Before ECA 2006 was introduced, the government already put in place Section 114A of the Evidence Act 1950 and Cyber Centre and Cyber Cafe (Federal Territory of Kuala

⁹ *Verizon Directories Corp. v. Yellow Book USA, Inc* (2004) 331 F. Supp. 2d 136 (EDNY 2004).

Access via http://www.herzfeld-rubin.com/publ_products/200705.htm

¹⁰ D.Alan (2009), *The law of electronic commerce*, Cambridge University Press, pg 2

¹¹ Jillian Chia, *The Electronic Commerce Act 2006*, Access via <http://www.skrine.com/the-electronic-commerce-act-2006>

¹² *ibid*

¹³ Foong Cheng Leong (2013), *Bread & Kaya: Attention e-commerce businesses: Fraud, the law and you*, Access via <http://foongchingleong.com/tag/malaysia-ecommerce-law/>

Lumpur) Rules 2012 in order to keep up with electronic developments¹⁴. ECA 2006 came to effect on 19th October 2006¹⁵. The main purpose of the Act is to “provide for legal recognition of electronic messages in commercial transactions, the use of the electronic messages to fulfill legal requirements and to enable and facilitate commercial transactions through the use of electronic means”¹⁶.

It is not compulsory for commercial transaction to be conducted electronically according to the but it applies when a person consents to using, providing or accepting an electronic message in a commercial transaction¹⁷. The Act enforced the person consent as the person’s conduct¹⁸. The Act defines the scope of the use of electronic message which covers the Federal and State Governments electronic commercial transactions¹⁹. There are certain transaction which the Act does not apply that are:

- (1) power of attorney,
- (2) creation of wills and codicils,
- (3) creation of trusts, and
- (4) negotiable instruments²⁰.

Hossein (2006) stated that there are two main issues associated with electronic documents which are authenticity and integrity²¹:

1. Authenticity

The authenticity of electronic documents is about the source or origin of a document or message.

¹⁴ *ibid*

¹⁵ Jillian Chia, The Electronic Commerce Act 2006, Access via <http://www.skrine.com/the-electronic-commerce-act-2006>

¹⁶ *ibid*

¹⁷ Jillian Chia, The Electronic Commerce Act 2006, Access via <http://www.skrine.com/the-electronic-commerce-act-2006>

¹⁸ *ibid*

¹⁹ *ibid*

²⁰ *ibid*

²¹ Hossein Bidgoli (2006), Handbook of Information Security, Information Warfare, Social, Legal, and Security Foundations. John Wiley & Sons, Inc., pg 393.

2. Integrity

Electronic documents integrity is about the accuracy and completeness of the communication.

He also elaborated that the authenticity and integrity of paper-based documents is easy to be identified as there are indicators such as letterhead, watermark, and handwritten ink signatures as indicators of trust²² making the medium and message tangible. However, electronic documents and communications have no means of trust indicators as there is always a possibility of modification and it may therefore create security risks²³. How to know whether the documents received is the same as the documents that the sender sent? The author suggested that cryptographic algorithms with digital signatures is the best means of detecting any alteration or modification in an electronic document²⁴. Apart of authenticity and integrity issues, another issue that may need to be considered is the reliability of electronic documents²⁵. It should be pointed out that the information of electronic documents may reside in electronic storage or produced by the computer itself such as computer-enhanced photographic images, etc.²⁶. Therefore, if the computer system were inaccessible or facing mechanical error, extraction of such information may seem impossible²⁷.

Therefore, with reference to uncertainty on this matter, this study aim to review the judicial cases on electronic communications status in PAM Contract 2006 and PWD 203A (Rev. 1/2010) and identify what are the form and format for electronic notices to be valid and acceptable in PAM Contract 2006 and PWD 203A (Rev. 1/2010). This study also evaluates the necessity of PAM Contract 2006 and PWD 203A (Rev. 1/2010) amendments with regards to the new legislation of ECA 2006.

²² *ibid*

²³ *ibid*

²⁴ *Ibid* pg 394.

²⁵ Abdulhadi M. Alghamdi (2011), *The Law of E-Commerce: E-Contracts, E-Business*, AuthorHouse , pg 31.

²⁶ *ibid*

²⁷ *ibid*

1.3 Objectives of Research

The objectives of this research are:

1. To determine admissibility of electronic communications application as per the new Act in the Malaysian standard form of contract.
2. To determine the types and format of electronic communications that may be admissible as notices and evidence due to the new Act.

1.4 Scope of Research

This study focuses on the following:

1. PAM Contract 2006, PWD 203A (Rev. 1/2010), Contract Act 1950, Electronic Commerce Act 2006.
2. Reported Malaysian and Singapore legal cases in relation to application of electronic communications but limited only to construction cases and contract matters.

1.5 Significance of Research

This research is expected to help contract administrators to identify valid and acceptable types of electronic correspondence and communication application in construction contracts. Moreover, the outcome of this study may help in proposing amendments to the PAM Contract 2006 and PWD 203A (Rev. 1/2010).

1.6 Research Methodology

Research methodology is needed to assist in carrying out and achieving the research objectives. The process of research methodology comprises of five phases:

Phase 1: Preparation of Research Proposal

Initially, the study has been carried out concerning wide-range of reading and understanding of the concepts involved. In order to identify the issue, firstly, it involved general reading on the topic by focusing on published journals, articles, previous research papers as well as electronic resources such as the World Wide Web and online databases from the library of Universiti Teknologi Malaysia, PSZ's website.

Phase 2: Literature Review – Background study

This stage involves mainly reading and understanding the related Act especially the Electronic Commerce Act 2014 and the related Acts in the United Kingdom, Australia and Singapore. Further data and information that are gathered through books, articles, magazines, journals, newspapers shall be discussed and explained for analysis used in Chapter 4.

Phase 3: Data Collection

This stage relates to collection of cases which were gathered and collected from online database by using search terms that have been selected during background study in phase 2. Data collection was carried out using the university's library online e-database which is *Lexis-Nexis* website and online case law database.

Phase 4: Data Analysis

This phase uses details of selected legal cases which were collected to adopt data analysis. The relevant case laws collected have been carefully reviewed, with special attention on the facts of the case, issues, types of electronic used, and judgments decided in each case law analyzed.

Phase 5: Conclusion and Recommendation

After the discussions in phase 4, a conclusion from the analysis is drawn in this phase. After the presentation of the research findings, further study has been suggested. All the phases discussed in the research methodology above are clarified and described in Figure 1.1.

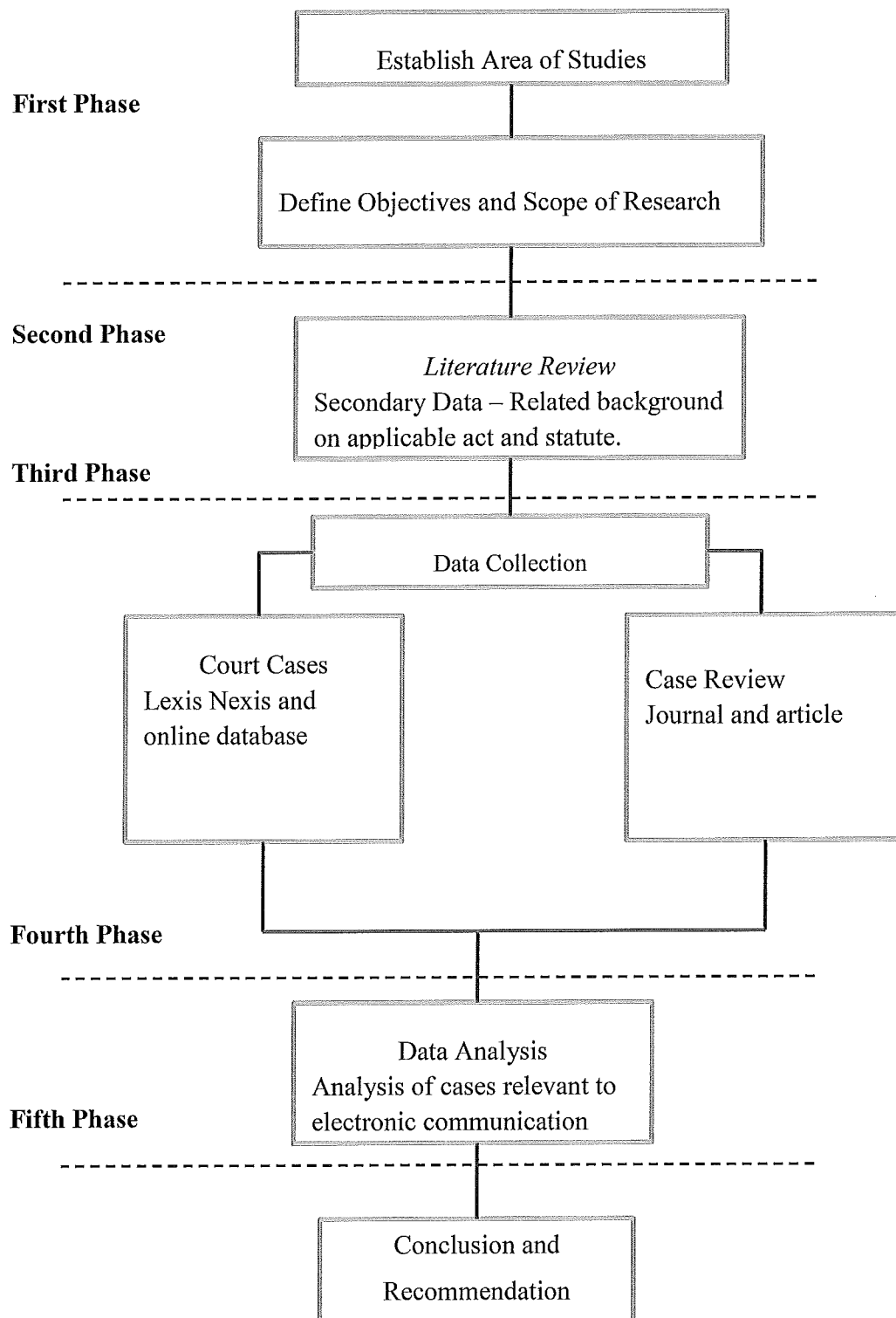


Figure 1.1: Research Methodology Flow Chart

1.7 Organization of Thesis

Chapter 1 is the introduction of the study and discussion which relates to the background of the research which involved general reading on electronic communication for a better understanding of the idea. This chapter also identifies the problem statement and associated issues arise in the research topic. In addition to that, research objectives of this study are also ascertained.

Chapter 2 is the literature review on the application of electronic communication gathered to have a general idea and knowledge as well as suitable terminologies related to the research in order to find suitable research terms for research findings. This chapter purpose is to focus on an overall understanding and find important information before readers enter the next chapter.

Chapter 3 lays down and distinguishes the procedure and method of research process used in this study in order to find the appropriate research terms to acquire data and findings. This chapter will focus on revising the research methodology if any, and conforming the existing methods and procedure.

Chapter 4 is the discussion in detail regarding case law gathering and related search. Appropriate techniques were chosen to select suitable cases. All the data collected will be analyzed and interpreted based on the information that has been gathered in search engines. In this chapter, the researcher will examine and arrange the findings into an organized data.

Chapter 5 is the compilation of the research findings and a formulation of the conclusion will be made at the end. Writing up and proofing the writing will also be

made and relate back to the objectives. This chapter will also include recommendations and problems encountered during this research.

REFERENCES

- Abdulhadi M. Alghamdi (2011), *The Law of E-Commerce: E-Contracts, E-Business*, Author House
- C. Sharon, M. Judith, O. Kathryn. Research paper on Electronic Project Administration in the Construction Industry, Access via [http://www.construction-innovation.info/images/pdfs/Research_library/ResearchLibraryA/Journal_article/2005-025-A/8\)_RJA_-_Electronic_Project_Admin_in_the_Construction_Industry.pdf](http://www.construction-innovation.info/images/pdfs/Research_library/ResearchLibraryA/Journal_article/2005-025-A/8)_RJA_-_Electronic_Project_Admin_in_the_Construction_Industry.pdf)
- D.Alan (2009), *The law of electronic commerce*, Cambridge University Press
- Foong Cheng Leong (2013), *Bread & Kaya: Attention e-commerce businesses: Fraud, the law and you*, Access via <http://foongchingleong.com/tag/malaysia-ecommerce-law/>
- Hossein Bidgoli (2006), *Handbook of Information Security, Information Warfare, Social, Legal, and Security Foundations*. John Wiley & Sons, Inc.
- Information Security: Guide to the Electronic Communications Act 2000, access via <http://webarchive.nationalarchives.gov.uk/+http://www.berr.gov.uk/files/file9980.pdf>
- Jillian Chia, *The Electronic Commerce Act 2006*, Access via <http://www.skrine.com/the-electronic-commerce-act-2006>
- Ken Chia, Koh See Khiang, Daryl Liu, *Update of the Electronic Transactions , Baker & McKenzie* , access via <http://www.lawgazette.com.sg/2010-07/feature3.htm>
- Khan (2013), *Advantages and Disadvantages of Electronic Communication: Technology in Modern Communication*. Access via

<http://www.meammarketing.com/advantages-and-disadvantages-of-electronic-communication/>

M. Abu Bakar (2006), Electronic Commerce Bill 2006: An Oversight Or Wanting A Different Or ...?, Malayan Law Journal Articles [2006] Volume 4 MLJ I, Access via http://www.lexisnexis.com.ezproxy.utm.my/my/legal/results/docview/docview.do?docLinkInd=true&risb=21_T25523081217&format=GNBFULL&sort=BOOLEAN&startDocNo=1&resultsUrlKey=29_T25523081221&cisb=22_T25523081220&treeMax=true&treeWidth=0&csi=346548&docNo=34

PAM Contract 2006

PWD 203A (Rev. 1/2010)

Sharon Christensen and Rouhshi low, Electronic Signatures and PKI Frameworks in Australia, Digital Evidence and Electronic Signature Law Review pg 40, access via <http://sas-space.sas.ac.uk/5508/1/1727-2319-1-SM.pdf>

Section 90A Evidence Act 1950 of Malaysia: A Time for Review (PDF Download Available). Available from: https://www.researchgate.net/publication/303833644_Section_90A_Evidence_Act_1950_of_Malaysia_A_Time_for_Review

The Electronic Communications Act, access via <https://www.thelawyer.com/issues/5-february-2001/the-electronic-communications-act/>

Verizon Directories Corp. v. Yellow Book USA, Inc (2004) 331 F. Supp. 2d 136 (EDNY 2004) Also quoted in Hoenig, "Computer-Generated 'Pedagogical' Devices: Admissible or Not?" The New York Law Journal, Nov. 8, 2004, p. 3. Available online:- <http://www.lexis.com/research/> >Legal News Publications >Computer Evidence; Also available at:- http://www.herzfeld-rubin.com/publ_products/200705.htm

Yee Fen Lim, Digital Signatures, Certification Authorities: Certainty in the Allocation of Liability, Singapore Journal of International & Comparative Law (2003)

Zainal Amin Ayub* Zuryati Mohamed Yusoff & Nurretina Ahmad Shariff , Malaysian Electronic Commerce Act 2006 and EU Directives: Consumer Protection

Perspectives, REKAYASA –Journal of ethics, legal and governance, Vol. 3, 2007 (68 - 76) , access via <http://repo.uum.edu.my/11944/1/15.pdf>

Zainal Amin. (2001). E-dagang: Perlindungan Pengguna di Malaysia. Tesis sarjana undang-undang. Bangi: Universiti Kebangsaan Malaysia.