

## Digital Signature's Legal Position in Electronic Commerce (Indonesia's Evidence Law Perspective)

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**Abstract.** An innovative way of humans mind in realize trade as important aspect in promote economy has develop the face of trade itself. The existence of electronic commerce that combines technology and trade practice has emerged faceless trading. Ironically the emergence of cyber crime also develops rapidly. The existence of digital signature that reflects the practice of cryptography system still brings problems related to its validity as evidence especially in Indonesia's evidence law perspective. The aims of this paper are to analyze the presence of digital signature in electronic commerce and the burden of proof that applied over digital signature from Indonesia's evidence law perspective. The methods uses in this paper are conceptual and case approach. The result in this paper show that (1) the legal position of digital signature in Indonesia's evidence law may recognized as a new type of evidence as regulate in Law no 11 year 2008 on Information and Electronic Transaction and the nature of electronic commerce that in accordance with article 1320 Indonesia's civil code (2) Judge in applying digital signature burden of proof may use affidavit evidence and electronic testimony methods based on the practice of international space theory and the absence between party in contract theory.

**Keywords:** Digital signature, evidence law, electronic commerce, law no 11 year 2008 on Information and Electronic Transaction

### 1. Introduction

In its essential way, globalization as a process of social transformation has brought the condition of humans' life in different countries and region into one borderless condition [1]. The development of information age has brought significant and extensive use of global communication networks. The invention of interconnected network (internet) that brings seamless merging of data, information and entertainment has opened up new vistas for businesses[2]. The development of information technology has brought great impact that changes the conduction of trade from face to face into faceless trading. Electronic commerce represents a broad range of technologies, processes and practices which automate the transacting of business through largely paperless mechanisms, involves information communicated via electronic mail, Electronic Data Interchange (EDI), or the World Wide Web. It also encompasses transactions in and between private and public sectors in both domestic and international community[3]. In an environment where the transactions took place with the use of paper documents make an easier way to conduct investigation when the discordance in sale and purchase transactions occur, but it will not be the same for the sale and purchase transaction in paperless trading that requires more complicated way about the burden of proof. The electronic commerce system must offer at least the same level of reliability as that which obtains in the paper world. It is well known that frauds do take place in the traditional paper based transactions, signatures can be forged, paper documents can be tampered with while on the electronic commerce world since they are directly the outcome of creating documents electronically, transmittance over worldwide computer communication network need the convincement that such documents are authentic when received over networks, and their authentication can be established in case of dispute [4].

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The invention of digital signature as a part of asymmetric cryptography system that requires processing series that must be passed by receiver before validating message senders deems to be able to provide security guarantees for the existing electronic commerce transaction[5]. Ironically from the perspective of Indonesia's evidence law, digital signature position has not has its strong position as others evidence objects and may questionable in contract that conduct in electronic world. The aims of this paper are to analyze the presence of digital signature in electronic commerce in such ways to make electronic commerce at least as secure and legally binding as traditional commercial transaction. This paper attempts to analyze the presence of digital signature in electronic commerce. The legal position of digital signature in Indonesia's evidence law may recognized as a new type of evidence as regulate in Law no 11 year 2008 on Information and Electronic Transaction and the nature of electronic commerce that in accordance with article 1320 Indonesia's civil code. Meanwhile refer to digital signature burden of proof, judge may use affidavit evidence and electronic testimony methods based on the practice of international space theory and the absence between party in contract theory.

## **2. ANALYSIS**

### **2.1. Legal Position of Digital Signature in Indonesia's Evidence Law**

Legality of electronic commerce has become a new juridical phenomenon to Indonesia's law and need to consider for further assessment in evidence law aspect. In its evidence law as stipulated in article 1866 Indonesian Civil Code, there are four types of evidence, namely :

*“Written evidence, presumptions, confession and oath”*

However in its progressive development, the role of new evidence (considered as non-conventional evidence) related to the development of technology cannot be waived, to make certain facts proposed to the court clearer and more understandable by its real impression of the legal facts.

From the perspective of legal aspect, there are few requirement that need to fulfill by demonstrative evidence for its legally binding as evidence, that are[6] :

- The existence of object as evidence
- Representative accuracy, meaning that the equalization of size, shape and its dimension in avoiding confusion in evidence proofing as needed
- Authentication, meaning that the demonstrated evidence should describe and represent the actual evidence
- Identification, meaning that the demonstrated evidence should match exactly with the actual evidence
- Admissibility, meaning that the demonstrated evidence must be able to prove something relevant, significant and competent
- Equality, meaning that the demonstrated evidence should clarify the proven fact

Meanwhile, the presence of electronic signature in its function term does not have big difference in conventional signature, whereas by its function in transforming electronic data message or electronic document using cryptography system obtained from certificate authorization, it will provide important function like [7]:

- minimize the risk for any parties actions who attempts to breach the agreement and forge documents
- provide high level security for information transmission over open networks and reliability of data integrity
- provide convenience for non paper agreement transaction

In relate to the nature of digital signature itself, it has distinct characteristic that may support his position as new type of evidence, that are[8] :

- Authenticity means when digital signature should possible to verify whether the data message has indeed been sent by the person or object claiming to be the originator. The authenticity of electronic data obtained from digital certificate by user/applicant request to Certificate Authority.

- Integrity means the presence of data sending also providing assurance that the submitted data will never be modified or changed during the sending and saving by unauthorized party
- Non Repudiability means in the appliance of digital signature, sender cannot deny that he/she has sent the messages yet deny the content of the messages when it come to content differences
- Confidentiality means that digital signature may protect data from unauthorized internal users, intercepted during transmission.

In the international regulation relates to the practice of electronic commerce, the establishment of UNCITRAL 1996 Model Law on Electronic Commerce has provide legal recognition of data message transmitted via electronic or other form, yet in attempt in finding technical solutions to meet the requirements of existing law and providing recognition of existing data messages[9].

In further explanation about the validity of digital signature in Indonesia's evidence law, can analyzed from article 1320 Indonesian Civil Code that defines the qualifications of valid article that are : the presence of consent of those who bind themselves, the capability to make an agreement, the presence of particular object and lawful cause (good faith principle). Where as by this requirements the presence of consent by the offer and acceptance to be bound in electronic contract, includes also term of payment and other condition applied upon buyer and seller agreement and security method by usage of digital signature to be applied upon the electronic document. All the requirements for valid agreements finally strict to be bound as implemented in article 1338 Indonesian Civil Code stipulates that all agreements that are made legally shall apply as the law between the parties and shall not revocable except with the consent of both parties. Henceforth on further legislation as regulated in article 11 Law 11/2008 on Information and Electronic Documents, provide legal recognition on the bounding power of electronic documents yet digital signature as evidence that seen also security guarantor of electronic contracts yet show the consent of will between parties in using it as a method to secure the electronic documents

## 2.2. The Burden of Proof of Digital Signature

The existence of cyberspace area where the electronic transaction took place has brought difference other legal consequences than the real world. Though, every legal act that conducted in cyberspace brings the same consequences like in real world. Figure 1 show the flow work of digital signature as the type of asymmetric cryptosystem that requires the use of private key and public key to encrypt and decrypt the data messages, meanwhile figure 2 show the comparison result of the decrypt data messages by using public key and comparing the hash key function for its data messages authenticity[10].

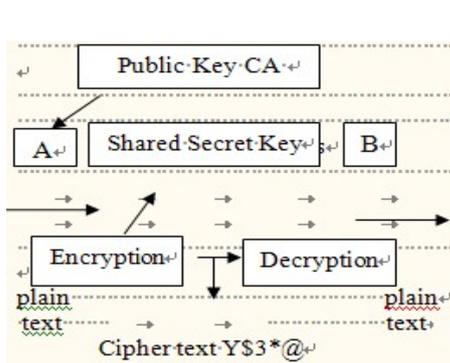


Fig.1. The flow work of digital signature in asymmetric cryptosystem

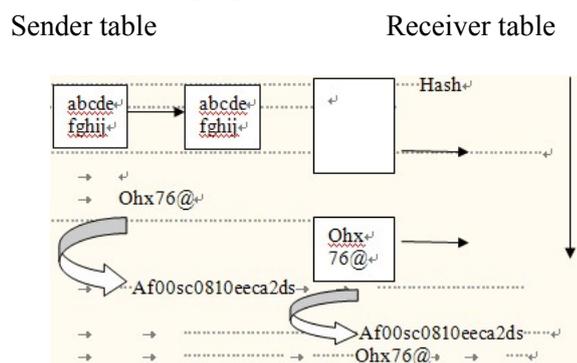


Fig.2. The comparison result of authentic decrypted data messages between sender and receiver

On further explanation in analyzing the burden of proof of digital signature, there are two kinds of methods that can use, namely 1) Affidavit Evidence, is an evidentiary mechanism based on knowledge experience made by self-own party and has the competence from the party in proving the validity of the electronically signed document. 2) Electronic Testimony, is an evidentiary mechanism based on transcript certification of the electronic type agreement include also the presence of digital signature, where the certification of the electronic type document can be classified as prima facie evidence of evidentiary mechanism[11]. In coherence to strengthen the burden of proof of digital signature, the appliance of offer

and acceptance theory in contract that explain the presence of one's offer and other's acceptance create new consent of will, due to the nature of electronic commerce as a contract shall be used, not to be missed the use of absence between party that combines with international space theory that regard cyberspace as field of law in coherence with the regulation in international law, where there will be harmonization of law of *lex electronica* in regulates civil and commercial jurisdiction instead of any countries jurisdiction[12], and regard the absence between party physically in sending and receiving data messages in the practice of electronic commerce with the appliance of digital problem is no more an obstacle for the validity of the electronic contract itself.

### 2.3. Concluding Remarks

The existence of globalization resulted by the rapid development in information technology has brought nations in possessing all technology mostly that has bring great benefit to their economy aspect. The presence of digital signature with its high-quality security system yet it legal status as valid evidence in electronic commerce, and related its burden of proof need equal combination between legislators in legislate regulation, international practice of international civil law and judge competency in conducted dispute settlement related to the electronic commerce burden of proof. Last but not least, the urgency in legislate further regulation in digital signature evidentiary method, conduction of society socialization related to the guidelines of electronic commerce practice and mostly ensuring the implementation of good faith principle among all kinds of contracts.

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## 4. REFERENCES

- [1] A.F.Elly Erawaty. Globalisasi Ekonomi dan Perdagangan Bebas: Suatu Pengantar in Ida Susanti & Bayu Seto. *Aspek Hukum dari Perdagangan Bebas*. Bandung. Citra Aditya Bakti. 2003. Citra. p 3
- [2] Kamlesh K Bajaj & Debjani Nag. *E-Commerce: The Cutting Edge of Business*. New Delhi, India. Tata McGraw Hill Publishing Company. 2000. p 6
- [3] Warwick Ford & Michael S. Baum. *Secure Electronic Commerce : Building the Infrastructure Digital Signature and Encryption*. New Jersey. 1997 Prentice Hall.. p 1
- [4] Kamlesh K Bajaj & Debjani Nag. *Op Cit*. p 259
- [5] I.B.R. Supancana. *Kekuatan Akta Elektronik sebagai Alat Bukti pada Transaksi E-Commerce dalam Sistem Hukum Indonesia*. [www.indoregulation.com](http://www.indoregulation.com) . accessed March 22, 2008
- [6] M.D.Badruzaman. *Harmonisasi Hukum Bisnis di Lingkungan Negara-Negara ASEAN*. Jurnal Hukum Bisnis Vol 22(2) 2003
- [7] David Banbridge. *Introduction to Commerce Law*. United Kingdom. Longman Pearson 2003. p 34
- [8] Kamlesh K Bajaj & Debjani Nag. *Op Cit*. P 198-199
- [9] Indira Corr. *International Trade Law*. United Kingdom. Cavendish Publishing.2005. p 111
- [10] Mariam D Badruzaman. *Kompilasi Hukum Perikatan*. Bandung. Citra Aditya Bakti. 2001. p 324
- [11] Andrew Choo. *Evidence text and material*. United Kingdom. Longman. Harlow. 1996. p 75
- [12] Abu Bakar Munir. *Cyberlaw : policies and challenges* .1999. United Kingdom. Butterworth. 1999. p 270