

A Preliminary Study on The Legal Effect of the Blockchain-Generated Data in Taiwan

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I. Preface

Governments around the world have set various regulations and guidelines to deal with the increasing application of blockchain technology, trying to keep the law up to date with technological development and the latest trends. Among them, the application of blockchain technology to regulations has become a hot topic. Because of its features, such as immutable, easy to verify and transparently disclosed, it can improve the efficiency of law enforcement and reduce cost. Moreover, decentralization and the verification mechanism generated by mathematical computation can avoid the disputes arising from the existing system, in which the mechanism is set up and controlled by independent institutions, and thus the credibility could be universal. The international trend also shows the importance attached to the application of blockchain technology in the legal field. In 2017, the “Legal Services Innovation Index”, a study conducted by the Michigan State University College of Law and Google evaluated the level of innovation of law firms according to the search data on innovation indicators of the world’s major law firms. Blockchain has the highest number of clicks among all indices, and the average number of clicks of blockchain is more than twice that of AI.[1] In addition, there are international cases regarding the connection between the blockchain technology and legal provisions as well as the real cases that used blockchain technology to handle legal matters.[2] An organization, such as the Global Legal Blockchain Consortium (GLBC), work with enterprises, law firms, software development units, and schools to study the standards formulation and application methods of the application of blockchain technology to law-related matters. [3] This article will first discuss the legal enforceability of data generated by the blockchain technology through international cases, then review Taiwan’s current status and the legal enforceability of the data generated by the blockchain technology and to explore possible direction for regulatory adjustment if the government intends to ease the restriction on the application of blockchain in the fields of evidence authentication and deposition.

II. International cases

1. US case: adjust the existing regulations and recognize the enforceability of blockchain technology

The amendment HB2417[4] to the Arizona Electronic Transactions Act (AETA) signed by Arizona in April 2017 defines the blockchain technology and smart contracts and recognizes their legal effect on signatures, records and smart contracts. HB2417 defines “blockchain technology” as a “distributed, decentralized, shared and replicated ledger, which may be public or private, permissioned or permissionless, or driven by “tokenized crypto economics or tokenless” and provides that the “data on the ledger” is protected with cryptography, is immutable and auditable and provides an uncensored truth.” It’s worth noting that although, by definition, the data is true, it is uncensored truth in nature, which emphasizes the originality of the data. A “smart contract” is an “event driven program, with state, that runs on a distributed, decentralized, shared and replicated ledger that can take custody over and instruct transfer of assets on that ledger.” Under the original AETA regulations, records or signatures in electronic form cannot be deprived of legal validity and enforceability merely because they are in electronic form. To eliminate the legal uncertainty of any blockchain related transactions and smart contracts related to digital assets, HB 2417 states that a signature that is secured through blockchain technology is considered to be in an electronic form and to be an electronic signature, and a record or contract that is secured through blockchain technology is considered to be in an electronic form and to be an electronic record. The statute also provides that smart contracts may exist in business, and a contract relating to a transaction may not be denied legal effect, validity or enforceability solely because that contract contains a “smart contract term.” This makes the enforceability of electronic signing and electronic transactions made by Arizona’s blockchain technology equivalent to that of the signature and contract made by the traditional written format. In the following year, the Ohio governor signed the amendment SB220[5] to the Uniform Electronic Transactions Act (UETA) in August 2018, which took effect from November. The focus of the amendment is the same as that in Arizona. Although, unlike HB 2417, SB220 does not define blockchain technology, the added content can still guarantee the enforceability of electronic signatures and contracts made by the blockchain technology. The focus of the two amendments in the US is to supplement and revise the laws and regulations made in the past so that they are applicable to the transaction method under blockchain technology and have the same effect as other recognized methods. This reduces the uncertainty related to blockchain technology at the regulatory and commercial application level, and is expected to attract the blockchain related companies, investors and developers.

2. Case of China: The enforceability of blockchain technology in evidence deposition is recognized in line with courts’ new type of judgment.

In September 2018, the Supreme People’s Court implemented “The Provisions on Several Issues Concerning the Trial of Cases by Internet Courts,”[6] in which Paragraph 2 of Article 11 mentions that where the authenticity of the electronic data submitted by a party can be proven through electronic signature, trusted time stamp, hash value check, blockchain or any other evidence collection, fixation or tamper-proofing technological means, or through the certification on an electronic evidence collection and preservation platform, the Internet court shall make a confirmation. It shows that the Internet court can recognize the evidence deposited by blockchain technology, and its enforceability is equivalent to that of other technologies if its authenticity can be proved. Paragraph 1 of the same article also proposes the basis for review and judgment on the relevant standards for the broad definition of electronic evidence recognition. “The

authenticity of generation, collection, storage and transmission process of the electronic data shall be examined and judged, and the items to be reviewed include whether the hardware and software environments such as the computer system based on which electronic data is generated, collected, stored and transmitted are safe and reliable; whether electronic data originator and generation time are specified, and whether the contents shown are clear, objective and accurate; whether the storage and safekeeping media of electronic data are definite, and whether the safekeeping methods and means are appropriate; whether electronic data extractor and fixer, and electronic data extraction and fixation tools and methods are reliable, and whether the extraction process can be reproduced; whether the contents of electronic data are added, deleted, modified or incomplete, or fall under any other circumstance; and whether electronic data can be verified in specific methods.” The judgment is based on a clear review. It is a supplement to the notarization process, which was the solo judgment basis for the enforceability of digital evidence. In addition, the rules on proof are clearly set out in Article 9, which covers two situations: online and offline. For offline evidence, the parties can convert it into electronic materials by scanning, re-shooting and duplicating, and then upload it to the litigation platform. For online evidence, it can be divided into two situations. One is the online electronic evidence possessed by the party, which can be imported to the litigation platform by providing links or uploading materials. The other is that the Internet court can obtain the structural information of the relevant cases from the e-commerce platform operators, Internet service providers and electronic data deposition and retrieve platform, and import it to the litigation platform to directly provide the information to both parties so that they can select and prove their claims. In this way, the court can use technical means to complete the migration and visual presentation of information. Before the Supreme People’s Court enforced the provisions, the Hangzhou Internet Court of China recognized the enforceability of electronic evidence under the blockchain technology when hearing a copyright dispute in June 2018. The court’s judgment pointed out that after reviewing the impartiality, technical level and evidence preservation methods of the blockchain evidence deposit service provider, the enforceability of the evidence is recognized, and thus the case was deemed infringement.[7] Beijing Dongcheng District Court also reviewed the blockchain deposition technology in an infringement of information network communication in September of the same year, including data generation, deposition, preservation, and recognized the enforceability of electronic evidence made by the blockchain technology. The court adopted the electronic evidence[8]. The Beijing Internet Court allows evidence deposition of the litigation files and evidence uploaded to the electronic litigation platform through the Balance Chain of evidence deposition established by the blockchain technology when handling the litigation cases online. This can prevent tampering and ensure the safety of litigation while keeping possible litigation evidence to facilitate verification in the future. While the Balance Chain is going online, the supporting standards, including the Beijing Internet Court Electronic Evidence Platform Access and Management Standards, the Enforcement Rules of the Beijing Internet Court Electronic Evidence Platform Access and Management Standards, the Application Form for Beijing Internet Court Electronic Evidence Deposition Access and the Instruction on the Beijing Internet Court Electronic Evidence Deposition Access Interface, are released simultaneously. These supporting standards prescribe the requirement of receivers, the requirement for the electronic information system of the receiver and the requirement for the juridical application of the evidence platform in details from the practical point of view so that the potential receivers can interconnect in a compliant manner while ensuring the quality of the connected data.

III. Taiwan’s current situation

In the above cases, the United States amended the laws and regulations related to the electronic transaction by increasing the scope of the terms, such as electronic forms of records, signatures and transactions so that the records, signatures and transactions made by the blockchain technology is as effective as that of other technologies. According to Article 9 of the Taiwanese Electronic Signatures Act, the enforceability of the data generated by blockchain technology shall still be judged case by case in terms of the technology for electronic documents, signature and transaction formation, and its applicability or exclusion shall be determined by laws or administrative agencies. In China, the role of electronic data is discussed in the relevant standards used by the Internet Court to examine the cases. Regarding the definition of electronic materials, electronic records and electronic documents, Paragraph 1 of Article 2 of the Taiwanese Electronic Signatures Act defines electronic document as a record in electronic form, which is made of “any text, sound, picture, image, symbol, or other information generated by electronic or other means not directly recognizable by human perceptions, and which is capable of conveying its intended information.”[9] In addition, Article 4 states “With the consent of the other party, an electronic record can be employed as a declaration of intent. Where a law or regulation requires that information be provided in writing, if the content of the information can be presented in its integrity and remains accessible for subsequent reference, with the consent of the other party, the requirement is satisfied by providing an electronic record. By stipulation of a law or regulation or prescription of a government agencies, the application of the two preceding paragraphs may be exempted, or otherwise require that particular technology or procedure be followed. In the event that particular technology or procedure is required, the stipulation or prescription shall be fair and reasonable, and shall not provide preferential treatment without proper justifications.” [10] The electronic records, regardless of the type of technology, are given the same effect as paper documents with the consent of both parties. In litigation, electronic records, electronic evidence or similar terms are not found in the Criminal Code of the Republic of China, the Civil Code, the Code of Criminal Procedure and the Taiwan Code of Civil Procedure. The adoption of electronic records often refers to Paragraph 2 of Article 220 of the Criminal Code of the Republic of China[11]. An audio recording, a visual recording, or an electromagnetic recording and the voices, images or symbols that are shown through the computer process and are sufficient evidence of intention shall be considered a document. The content that is considered meaningful is that the identity of the person expressing the content is identifiable according to the content and can be used to prove legal relationship or fact in social life. The relevant standards for proof under the electronic evidence follow Article 363 of the Taiwan Code of Civil Procedure[12]. For non-documentary objects which operate as documents, including those are accessible only through technological devices or those that are practically difficult to produce their original version, a writing representing its content along with a proof of the content represented as being true to the original will be

acceptable. However, the way of proof or recognition standards are not sufficiently described. Or according to Paragraph 2 of Article 159-4 of the Code of Criminal Procedure, "documents of recording nature, or documents of certifying nature made by a person in the course of performing professional duty or regular day to day business, unless circumstances exist making it obviously unreliable. In addition", and Paragraph 3 " Documents made in other reliable circumstances in addition to the special circumstances specified in the preceding two Items." [13] In fact, the Juridical Yuan started to promote the electronic litigation platform (including online litigation) in 2016, and has launched the online litigation business by gradually opening the application for different types of applicants and litigation.[14] However, there is no description on the technical type and inspection standards of electronic evidence. Moreover, only the litigation evidence is uploaded. There is no evidence deposition before litigation for comparison during litigation.

Under Taiwan's laws and regulations, electronic evidence and its proving method is not significantly different from other types of evidence. The judgment of evidence shall still depend on judges' recognition on the evidence. Taking the practice of criminal litigation as an example, it can be viewed at three levels[15]: 1. The submission of the evidence. If the evidence is collected illegally, not following a statutory method or is not logically related to the pending matters, it will be excluded. This is the way to determine whether the evidence is eligible to enter the evidence investigation process. 2. In the investigation of evidence, the method of investigation (e.g., whether it is legal), the determination of relevance and the debate on evidence (e.g., to confirm the identity of the person producing the electronic evidence, whether the electronic evidence is identical to the original version without addition, deletion or alteration) are investigated during the investigation procedure. 3. The debate on evidence is to determine the power of the evidence by considering the relationship among the elements that constitute the whole and whether the evidence can prove the connection among all elements. In addition, whether the electronic evidence is consistent with the original version is often based on Article 80 of the Notary Act, "When making notarial deeds, notaries shall write down the statements listened to, the circumstances witnessed, and other facts they have actually experienced. The means and results of the experience shall also be stated in the notarial deeds." [16] A notary shall review the electronic evidence and record the inspection process and the inspection results to demonstrate its credibility.

VI. Conclusions and recommendations

According to the latest 2050 smart government plan[17] announced in the Executive Yuan's 3632nd meeting held on December 27, 2018, the government is planning to connect the database of each government agency through blockchain technology, and the plan also includes establishment of digital identification. It is foreseeable that there will be more and more electronic materials, documents and records connected by blockchain technology in the future. When it comes to improve management efficiency and reduce the barriers to introduce this technology to various sectors, it is necessary to adjust the related regulations. At present, there are no statutory provisions for the technology that assist the use of the electronic evidence involved in traditional litigation channels or online platforms, including using blockchain for evidence deposition and authentication . This also poses uncertainty to the judges when they make judgments. If we consider the continuous development and breakthrough of technology, which is relatively faster than the legislative process, and the traditional tangible transactions and contracts are still the majority in life, Taiwan has defined electronic materials, electronic records and electronic documents in the Electronic Signatures Act to ensure and strengthen the legal rights and benefits under the adoption of the technology. In addition, the Electronic Signatures Act also reserves the right to determine whether the technology is applicable to the laws and regulations or administrative agencies. In other words, the technology behind electronic materials, records and documents are not specified, and the aforementioned electronic materials have the same effect as the contracts and signature as the traditional written format. However, there are no standards to specify which standards are valid for evidence deposition and authentication for electronic materials on the level of deposition and authentication. In the future, when improving the relevant functions of the online litigation platform, the Juridical Yuan can also consider using technologies, such as blockchain or timestamps to provide evidence deposition service, which is expected to enhance the efficiency of evidence verification for online litigation in the future and prevent wasting review resources on invalid evidence for a better operation mode. This is in line with the government's policy direction. By providing support and demonstration of emerging technologies, not only limited to blockchain, on the legal level, it can reduce the public's uncertainty and risk on introducing or applying the technology to legal process. This is very helpful in realizing a large scale application of the technology.

[1] Legal Services Innovation Index, Phase 1, Version 1.0, <https://www.legaltechinnovation.com/law-firm-index/> (last visited on Jan. 11, 2019).

[2] For example, Arizona's Arizona Electronic Transactions Act (AETA) and Ohio's Uniform Electronic Transactions Act (UETA) described the electronic signature and the enforceability of contracts under blockchain technology; in China, Beijing Internet Court provides litigation files and litigation evidence deposition service based on blockchain technology for future litigation.

[3] The Global Legal Blockchain Consortium website, <https://legalconsortium.org/> (last visited on Jan. 11, 2019).

[4] H.B. 2417, 53th Leg., 1st Regular. (AZ. 2017).

[5] S.B. 220, 132ND General Assembly. (OH. 2017-2018).

[6] "The Provisions on Several Issues Concerning the Trial of Cases by Internet Courts," the Supreme People's Court of the People's Republic of China <http://www.court.gov.cn/zixun-xiangqing-116981.html> (last visited on Jan. 11, 2019).

[7] Tencent Research Institute, <The era of judicial blockchain has arrived? ——from the two cases of blockchain electronic deposition>, October 23, 2018, <https://ek21.com/news/1/132154/> (last visited on Jan. 11, 2019).

[8] Securities Daily, <Beijing Dongcheng District Court confirmed the evidence collection by blockchain for the first time-- application of "blockchain + justice" for new opportunities in history> October 20, 2018, <https://www.jinse.com/bitcoin/258170.html> (last visited on Jan.

11, 2019).

[9] Paragraph 1 of Article 2 of the Electronic Signatures Act

[10] Article 4 of the Electronic Signatures Act

[11] Paragraph 2 of Article 220, "A writing, symbol, drawing, photograph on a piece of paper or an article which by custom or by special agreement is sufficient evidence of intention therein contained shall be considered a document within the meaning of this Chapter and other chapters. So shall be an audio recording, a visual recording, or an electromagnetic recording and the voices, images or symbols that are shown through computer process and are sufficient evidence of intention."

[12] Article 363 of the Taiwan Code of Civil Procedure, "The provisions of this Item shall apply mutatis mutandis to non-documentary objects which operate as documents. Where the content of a document or an object provided in the preceding paragraph is accessible only through technological devices or it is practically difficult to produce its original version, a writing representing its content along with a proof of the content represented as being true to the original will be acceptable. The court may, if necessary, order an explanation of the document, object, or writing representing the content thereof provided in the two preceding paragraphs."

[13] Paragraph 2 of Article 159-4 of the Code of Criminal Procedure

[14] Liberty Times, <The Juridical Yuan is promoting "E-litigation." Two new systems are on the road.> August 1, 2018, <http://news.ltn.com.tw/news/society/breakingnews/2506118> (last visited on Jan. 11, 2019).

[15] Chih-Lung Chen, "Seminar on the Reform of the Code of Criminal Procedure 3: Revision Direction of Rule of Evidence," The Taiwan Law Review, Issue 52, Page 71-73 (1999).

[16] Article 80 of the Notary Act.

[17] BlockTempo, <The Executive Yuan Announced the Smart Government New Plan: the Taiwan Government will Use Blockchain Technology to Establish Information Exchange Mechanism of Various Agencies>, January 2, 2019, <https://www.blocktempo.Com/taiwan-gv-want-to-use-blockchain-tech-build-data/> (last visited on Jan. 11, 2019).

Links

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Y o u m a y b e
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The Taiwan Intellectual Property Awareness and Management Survey

The "National Intellectual Property Strategy Program" was announced by the Taiwan government in November 2011 in an effort to promote and raise the intellectual property capability of Taiwanese firms. As policy adviser to the Ministry of Economic Affairs in drafting the "National Intellectual Property Strategy Program," the Science and Technology Institute under the Institute for Information Industry (STII) conducted a survey in 2012 in order to gain a broad overview of the level of IP awareness and IP management and use among Taiwanese firms. The survey was distributed to 1,384 firms that are...

Taiwan Intellectual Property Survey Report 2023

Taiwan Intellectual Property Survey Report 2023 2024/06/27 Innovation & Intellectual Property Center, Science & Technology Law Institute (STLI), Institute for Information Industry has conducted the survey of "The Intellectual Property Survey Report" to listed companies since 2012. The Intellectual Property Survey Report 2023 on Taiwan's Listed and Over-the-Counter Companies was released in February 2024. Among the 331 publicly listed companies surveyed in 2023, the information technology sector had the largest representation, accounting for 44% (145 companies). This was followed by the...

Discussion on the Formation of Taiwan's Network of Intellectual Property Collaboration System in light of Japan's Experience

Background Taiwan industries have been facing an increasing pressure from the competitive global market. To assist the Taiwan industries, the Government has approved the "National Intellectual Property Strategy Guideline" (the "Guideline") on 17 October 2012. The Guideline stipulates six major strategies and twenty-seven relevant enforcement criteria in relation to intellectual property ("IP"). The six major strategies are as follows: (a) creation and utilization of high-value patents; (b) enforcing cultural integrity; (c) creation of high agricultural value; (d) support free flow of IP for...

Korea "Strategies for an Intellectual Property Powerhouse to Realize a Creative Economy" Overview

Background Since 1990, many countries like United States, Japan and EU understand that intellectual properties create higher value added than tangible assets do so these countries respectively transformed their economic types to knowledge-based economy so as to boost economic growth and competitiveness. For example, Japan has legislated "Intellectual Property Basic Act" in 2002 and established "the Intellectual Property Strategy Headquarters" in 2003. United States legislated "Prioritizing Resources and Organization for Intellectual Property Act (PRO-IP Act)" in 2008. China also...