CHAPTER IV

RESEARCH RESULTS AND ANALYSIS

4.1 Research results

4.1.1 Technology and the development of contract law

The basis of Indonesian contract law is encompassed in Book Three of the Indonesian Civil Code, a legal source that has existed since the Dutch occupation of Indonesia.[138] Traditionally, contracts take the form of written contracts or oral contracts, the preparation of which is carried out by face-to-face meetings as well as signatures for written contracts.[139] However, the increase of technological sophistication has allowed for electronic contracts, a new variation of contract to emerge.

The economic development that has taken place in Indonesia in recent years has been accompanied by the rapid development of technology, which has revolutionized the way in which economic activities are carried out.[140] This, in turn, has crucially influenced current day business law as the use of the Internet has revolutionized the way in which we conduct business. Business transactions can now be done electronically, and we can conclude legally binding agreements

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[138] Adi Condro Bawono, "Kedudukan Kuh Pidana Dan Kuh Perdata Dalam Hierarki Peraturan Perundang-Undangan - Klinik Hukumonline," hukumonline.com, January 25, 2012, https://www.hukumonline.com/klinik/a/kedudukan-kuh-pidana-dan-kuh-perdata-dalam-hierarki-peraturan-perundang-undangan-lt4f1e71d674972.

[139] David Herianto Sinaga and I Wayan Wiryawan, "Keabsahan Kontrak Elektronik (e-Contract) Dalam Perjanjian Bisnis," Kertha Semaya : Journal Ilmu Hukum 8, no. 9 (March 2020): p. 1385, https://doi.org/10.24843/ks.2020.v08.i09.p09, 1386.

[140] Marina Abdul Manap, "Kontrak Elektronik: Isu Dan Penyelesaian Undang-Undang," Journal of Law & Governance 1, no. 1 (2018), 64.

through the means of electronic contracts. With increasing globalization and development of information technology the Indonesian government enacted Law no. 11 of 2008 concerning Electronic Information and Transactions (ITE Law), which was later amended in Law no. 19 of 2016. The ITE law formally recognized electronic contracts as a valid form of contract.

Some of the commonly used electronic contracts include browsewrap agreements[141], clickwrap agreements[142], and electronic mail contracts legally formed by e-mail communication[143].

Therefore, due to the widespread usage of the Internet and the prevalence of the digital market, which brought with it the rise of e-commerce and other modes of digital transactions, the climate for business worldwide has changed. As a result, the law has had to react and adapt to this change by enacting the ITE Law in order to regulate and foster the growth of Information Technology in its role in national trade and economic growth for Indonesia (see Point (e) in the Consideration of ITE Law). The recognition of electronic contracts is particularly significant in regard to contract law as it expanded upon our understanding of what form contract can take,

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[141] Browsewrap agreements are notices on mobile apps or websites that state that the user to agrees to be bound by the terms and conditions of the agreement if they simply use the app or website. Browsewrap agreements do not require a step to "assent" to the agreement as the consent is considered implicit.
"What Is an Electronic Contract?," Ironclad, June 23, 2022,
https://ironcladapp.com/journal/contracts/what-is-an-electronic-contract/#:~:text=An%20electronic%20contract%20is%20an,and%20see%20countless%20other%20advantages.
[142] Clickwrap agreements require the user to click "I accept" in order to form an electronic contract.
Ibid.
[143] In an electronic mail contract, offers and acceptances may be exchanged via e-mail a combination with other electronic communications, written documents or faxes.
David Herianto Sinaga and I Wayan Wiryawan, Loc. Cit., 1388.

allowing for agreements made through electronic systems to be considered legally valid contracts.

4.1.2   Differences between traditional contracts and electronic contracts

Electronic contracts are simply a subset of contracts in general, and as such, have the same basis of validity as traditional contracts. Government Regulation no. 71 of 2019 concerning System Management and Electronic Transactions specifies the legal requirements for electronic contracts, that is:

1. There is an agreement of the parties;

2. Carried out by legal subjects who are capable or authorized to represent in accordance with the provisions of laws and regulations;

3. There is a certain subject; and

4. The object of the transaction may not conflict with laws and regulations, decency and public order.

These conditions mirror the four conditions of contract validity stated in Article 1320. Therefore, in essence, an electronic contract and traditional contracts are the same in terms of legal requirements.[144]

The key difference between traditional contracts and electronic contracts is in form. Whereas traditional contracts are written or orally expressed, an electronic contract is made in electronic form via electronic systems. Electronic transaction activities result in agreements or legal relations electronically by integrating

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[144] Nafiatul Munawaroh, "Keabsahan Perjanjian Elektronik Dan Syaratnya," hukumonline.com, accessed December 1, 2022, https://www.hukumonline.com/klinik/a/keabsahan-perjanjian-elektronik-dan-syaratnya-lt54e1cbb95f00f/.

computer-based networks with communication systems which are then facilitated by internet networks or global networks.[145] The digital form of electronic contracts will result in differences as to the ways in which these four legal requirements are achieved.

An essential element in a contract, consent, or agreement, is conformity of a statement of will between one or more people[146], consisting of an offer and acceptance between the parties from which emerges a set of obligations.[147] As stated by Mertokusumo, the five ways in which consent can be expressed are:

1. Perfect written language;

2. Perfect language through oral statement;

6. Imperfect language, as long as it can be understood and accepted by the other party;

7. Sign language, as long as it can be understood and accepted by the other party;

8. Silence, as long as it is understood or accepted by the other party.[148]

Electronic contracts expand on this as consent to an e-contract can be expressed in a multitude of ways, whether it be clicking "I agree" on a website's Terms of Service (clickwrap agreements), just simply using a website or an application (browsewrap agreements), signing in to use a product on service online (sign-wrap

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[145] Ibid, 1388.

[146] Gede Eka Prasetya Dewantara and I. Wayan Novy Purwanto, "Keabsahan Kontrak Perdagangan Secara Elektronik (E-CONTACT) Ditinjau Dari Pasal 1320 Burgerlijk WetBoek," Kertha Semaya: Journal Ilmu Hukum 8, no. 1 (2019), 8.

[147] David Herianto Sinaga and I Wayan Wiryawan, Loc. Cit., 1389.

[148] Sudikno Mertokusumo, "Rangkuman Kuliah Hukum Perdata," Rangkuman Kuliah Hukum Perdata (Yogyakarta: Fakultas Pascasarjana, Universitas Gadjah Mada, 1987), 7.

agreements)[149], or providing electronic signatures. Such offer and acceptance, which are carried out by electronic networks, are known as EDI (electronic data interchange).[150]

The UNCITRAL Model Law on Electronic Commerce with Guide to Enactment 1996[151] states: "In the context of contract formation, unless otherwise agreed by the parties, an offer and the acceptance of an offer may be expressed by means of data messages." (vide Article 11(1)) Furthermore, as to the "generating, sending, receiving, storing or otherwise processing" of said data messages, Article 4(1) of the UNCITRAL E-Commerce Model Law states that they may be "varied by agreement". Therefore, the ways in which an offer and acceptance (which forms the basis of the agreement) is expressed can vary according to the type of the electronic contract it is, as e-contracts also vary in form.[152]

4.1.3   Differences between smart contracts and traditional contracts

Unlike traditional contracts that are formed in natural language, smart contracts are typically stored on a blockchain platform or a distributed ledger as a piece of computer code. A key feature that distinguishes smart contracts from traditional contracts is its self-automated nature. Smart contracts work by following if-then semantics, as in, the execution of the contract will only occur if

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[149] "What Is an Electronic Contract?," Loc. Cit.
[150] David Herianto Sinaga and I Wayan Wiryawan, Loc. Cit., 1389.
[151] UNCITRAL Model Law on Electronic Commerce recognizes the legal consequences, validity or enforceability of electronic data messages. Its provisions were adapted into Indonesian legislature in Law no. 11 of 2008 (ITE Law).
Ibid, 1387.
[152] Ibid, 1388.

certain predetermined conditions are met. That is to say, if "X" occurs then "Y" is executed. In this sense, the operation of a smart contract is commonly analogized to a vending machine. When money is inserted into a vending machine, a contract of sale is executed automatically.[153] Similarly, in a smart contract, a programming of algorithms will search the relevant data to check whether the specified conditions have been met before proceeding to execute the contract by itself.[154] If the conditions are not met, the contract will not be executed.

At present, the simplicity of its algorithmic design limits the functions a smart contract is able to perform. As opposed to traditional contracts, smart contracts can only perform rudimentary tasks with specific and objective parameters given the technology's current level.[155] As such, smart contracts are limited in the functions that they are capable of, and they cannot yet specify contractual provisions at the level of complexity traditional contracts are able to achieve. However, as the technology develops and blockchain use becomes more widespread, smart contracts will in the future be capable of executing more complex and sophisticated transactions. Still, it is unclear how many years away smart contracts are from being advanced enough to determine more subjective legal criteria.[156]

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[153] Alexander Savelyev (National Research University Higher School of Economics, 2016), 8.
[154] Pablo Sanz Bayón, "Key Legal Issues Surrounding Smart Contract Applications," SSRN Electronic Journal 9, no. 1 (2019), https://doi.org/10.2139/ssrn.3525778, 70-71.
[155] Alex Lipton and Stuart Levi, "An Introduction to Smart Contracts and Their Potential and Inherent Limitations," The Harvard Law School Forum on Corporate Governance, May 26, 2018, https://corpgov.law.harvard.edu/2018/05/26/an-introduction-to-smart-contracts-and-their-potential-and-inherent-limitations/.
[156] Ibid.

4.1.4 The benefits of smart contracts as opposed to traditional contracts

Even with its current limitations, smart contracts are able to solve many inconveniences typically faced with traditional contracts, which make it favorable to many users. The first benefit of smart contracts is the lack of reliance on intermediaries. Traditionally, contracts such as escrow contracts employ intermediaries to help facilitate exchange of goods or money[157], but the downside to such contracts is that the parties must trust the intermediary to follow through or may have to rely on insurance to protect their accounts. Using a smart contract, this problem is solved as the self-executing feature of smart contracts means a third party is not needed to complete the transaction.[158]

Smart contracts not only reduce risk but also lower the cost of the transaction as the parties do not have to pay the intermediary. Thus, low cost is another benefit of smart contracts as opposed to traditional contracts. In addition, the deterministic nature of smart contracts reduces the risk of hidden cost parties may incur if there are issues with the contract such as in arbitration or enforcement.[159]

Another advantage of smart contracts is speed as the transaction process much quicker, which may make it a more attractive option for many as opposed to traditional contracts. The smart contract can be executed seconds after the initial criteria are met.[160]

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[157] Caroline Banton, "How Escrow Protects Parties in Financial Transactions," Investopedia (Investopedia, August 29, 2022), https://www.investopedia.com/terms/e/escrow.asp.
[158] Jakub and Jakub, "Code Is Law? Smart Contracts Explained," Finematics, accessed November 2, 2022, https://finematics.com/smart-contracts-explained/.
[159] Ibid.
[160] Ibid.

Additionally, smart contracts also have the benefit of security and transparency.[161] Typically stored on a blockchain or distributed ledger, smart contracts employ consensus mechanism wherein all global assets and transactions are recorded in a decentralized data system. This makes the data stored in this system tamper-proof and can verifiable, making fraud very unlikely as any alteration to the data is near impossible.[162] The irreversibility and immutability of blockchain also guarantee the fulfillment and effectiveness of the legal obligations.[163]

Smart contracts lend itself for usage in a potential number of industries. They can be used for financial purposes such as trading, investing and lending as well as other applications such as gaming, insurance and real estate.[164] They can also be used as legally binding contracts. Currently, smart legal contracts are more useful as rudimentary agreements such as exchanging cryptocurrency when certain conditions are met. However, as the technology develops in sophistication, these contracts may become more complex and able to achieve a greater range of tasks.[165] As such, smart contracts are expected to revolutionize business transactions.

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[161] Pablo Sanz Bayón, Loc. Cit., 71.
[162] Law Commission, "Smart Legal Contracts: Advice to Government," Smart Legal Contracts: Advice to government § (2021), 15.
[163] Jakub and Jakub, Loc. Cit.
[164] "Real World Examples of Smart Contracts," Gemini, accessed November 2, 2022, https://www.gemini.com/cryptopedia/smart-contract-examples-smart-contract-use-cases.
[165] Law Commission, "Smart Legal Contracts: Advice to Government". Loc. Cit., 1.

4.1.5   The scope of smart contract legality

It should be noted that despite its name, a smart contract is not considered a legally binding contract by itself, as it is simply a set of coding designed to automate an event. A smart contract is a piece of software that executes a pre-specified function based on a specified condition or a transaction that occurs.[166]

In his academic journal "Key Legal Issues Surrounding Smart Contract Applications", Pablo Sanz Bayón questions whether it is possible for smart contracts to constitute legally binding agreements or whether they can only function as a translation of a part of a previously written legal contract that is translated from natural language to an algorithmic code and subsequently deployed on a blockchain platform where it self-executes the function of the contract. In other words, whether the smart contract is an actual contract or merely serves as clause in a pre-existing contract that is written in natural language (i.e. a traditional contract). Bayón argues that only the latter understanding is possible, and that a smart contract should not be construed as a contract on its own, but a conditional clause through which to automate the function desired by the parties once a certain condition is fulfilled.[167]

The UK Law Commission conducted a report to investigate the alignment of smart contracts in the English legal framework and concluded with a different view in this matter, stating that smart contracts can be used as a legally binding

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[166] Jonas Rubel, "The Blockchain Running Applications," Medium (Coinmonks, August 15, 2020), https://medium.com/coinmonks/the-blockchain-running-applications-80ec0d9c3eb0.
[167] Pablo Sanz Bayón, Loc. Cit., 73.

contract.[168] In this regard, the Law Commission distinguished between "smart contracts" and "smart legal contracts".

4.1.6 Smart contracts vs. smart legal contracts

The UK Law Commission defines smart legal contracts as a subset of smart contracts. The distinction is that whereas smart contracts are not necessarily legally valid contracts, smart legal contracts are legally binding. Smart legal contracts consist of obligations that are partially or entirely defined in and performed automatically by a computer program. In addition, they are legally enforceable. The Law Commission describes three variations in which a smart legal contract may take form: 1) Natural language contracts with automatic performance by code, 2) Hybrid contracts, and 3) Contracts recorded solely in code.

Currently, the majority smart legal contracts are in the form of natural language contracts with automated performance by code. In such a contract, the terms are negotiated and recorded in natural language but are then programmed into the smart legal contract for it to be executed. Here, the code functions as a tool for execution rather than the basis of the obligations themselves. Therefore, the code is outside of the scope of the legally binding agreement.[169]

A hybrid contract contains some contractual obligations that are defined in natural language, and others are defined in a programming code. In a hybrid contract, some or all of the contract obligations are executed automatically through

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[168] Law Commission, "Smart Legal Contracts: A Summary," Smart Legal Contracts: A Summary § (2021), 2.
[169] Law Commission, "Smart Legal Contracts: Advice to Government," Smart Legal Contracts: Advice to government § (2021), 22.

code. The number of terms that is written in code and natural language varies; some hybrid contracts could be primarily written in code with only a few natural language terms. Others could be primarily written in natural language and include just one or two terms written in code. Additionally, it is possible for the same contractual terms to be stipulated in both natural language and in code. [170]

A smart legal contract that is solely code defines and automatically performs all of its contractual terms through the code of a computer program. In this case, there is no natural language version of the agreement.[171] This type of smart legal contract is likely to be rare in practice as commercial contracts are usually too nuanced to be laid out solely in code.[172]

4.1.7 Interpretation of smart legal contracts according to the Law Commission

As tasked by the Ministry of Justice, the UK Law Commission[173] published a report in 2021 after undertaking a study about smart legal contracts. They concluded their findings in the report along with advice regarding the placement of smart legal contracts under English law.[174] The Law Commission addressed issues such as the formation and interpretation of smart legal contracts as well as remedies incurred should there be disputes. The Law Commission also addressed the

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[170] Ibid.

[171] Ibid, 23.

[172] Law Commission, "Smart Legal Contracts: A Summary," Loc. Cit, 6.

[173] The Law Commission is the statutory independent body created by the Law Commissions Act 1965 to keep the law of England and Wales under review and to recommend reform where it is needed.
"Home," Law Commission, August 2, 2022, https://www.lawcom.gov.uk/.

[174] Law Commission, "Smart Legal Contracts: Advice to Government," Loc. Cit, 2.

jurisdiction of smart legal contracts and their placement under international law. For the purposes of this paper, the author will focus on the Law Commission's opinions on the interpretation of smart legal contracts. To help contextualize the Law Commission's findings, the author will also explain the English approach to contractual interpretation. As such, the application of English law to the interpretation of smart legal contract will be used as an example to determine how smart legal contracts would be interpreted under Indonesian law.

4.1.7.1 Can coded terms be open to interpretation?

First, one pertinent issue about smart legal contracts to be addressed was whether coded terms would be open to interpretation. In addressing this question, the Law Commission sought several consultees, some of whom were critical of the application of the principles of contract interpretation onto coded terms. Professor Hugh Beale stated:

> There can be no question of interpreting code. Code does not have a meaning; it has an effect. The only question can be whether the code fits with any natural language terms or statements that preceded or accompany it.[175]

In addition, the LawTech Sounding Board expressed the opinion that the principles of interpretation currently used in contract law were "unsuitable for application to the coded terms of a smart contract". They stated:

> [The principles of contractual interpretation] appear to be redundant when interpreting the coded elements of smart contracts. The machine does not think and evaluate. It does not take such steps to ascertain the intention of

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[175] Ibid, 75.

the parties. Rather, with coded contracts, the code will have a single meaning – it means what the code does when it is executed.[176]

The Law Commission, however, disagrees with these views, stating that even if a computer "does not think and evaluate", the code does not simply "mean what the code does when it is executed". The Law Commission also disagrees with the statement that a code has no meaning, and only an effect.[177] As the UKJT stated in their Legal Statement "it is unnecessary to declare smart [legal] contracts as a special category of contracts to which the normal rules of interpretation are dis-applied".[178] The Law Commission concurred with this statement, asserting that it is possible for dispute to arise about the "meaning" of the coded terms of a smart legal contract. For example, if the coded terms have been performed in a way which one of the parties did not expect, the "meaning" of the coded terms may be the subject of interpretation in a dispute. [179]

4.1.7.2   The application of principles of contractual interpretation to smart legal contracts

In disputes involving smart legal contracts with terms recorded exclusively in natural language, it is unlikely for novel interpretation issues to arise as the code merely automates its performance and do not constitute any of its terms. The terms in the natural language contract will be the ones subject to interpretation by the court. The court will only examine the code to determine whether it correctly

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[176] Ibid.
[177] Ibid.
[178] Ibid, 76.
[179] Ibid.

performed the provisions of the natural language agreement. However, in the case where terms are recorded partially or solely in code, potential difficulties arise regarding their interpretation. This raises an issue of how existing interpretation principles are to be applied to coded terms should there be dispute as to their meaning.[180]

4.1.7.3   English approach to contractual interpretation – Objective test

This paper will use the Law Commission's findings as an example of how smart legal contracts would be interpreted under the law. As the Law Commission writes their findings in the context of English law, it is important to first clarify rules and precedence of contract interpretation set by English courts. In English law, there is no simple set of rules to follow in terms of contract interpretation as much is dependent on the facts of the case, although there exists a breadth of case law as well as some statutes that provide guidelines on how to interpret the meaning of a contract.[181]

As a starting point, UK courts will employ an objective test ascertain the intention of the contracting parties. An objective and contextual approach is used

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[180] Harriet Jones-Fenleigh, Jonathan Hawkins, and Adam Sanitt, "Smart Legal Contracts under English Law - Part 2: Formation & Interpretation," Inside Disputes | Global law firm | Norton Rose Fulbright, accessed January 5, 2023, https://www.nortonrosefulbright.com/en/inside-disputes/blog/202202-smart-legal-contracts-under-english-law-formation-and-interpretation.

[181] Ian Felstead, Mair Williams, and Oliver Browne, "Commercial Contract Interpretation in United Kingdom (England & Wales)," Lexology (Latham & Watkins LLP, December 6, 2018), https://www.lexology.com/library/detail.aspx?g=6c5ede9a-7c77-4342-97e1-c7084438f29a.

to determine the meaning of the words.[182] As Lord Hoffman stated in Chartbrook Ltd v Persimmon Homes, the court must ask "what a reasonable person having all the background knowledge which would have been available to the parties would have understood them to be using the language in the contract to mean".

Furthermore, in Palliser v. Fate, Lord Burrows states:

"The court must ascertain the meaning of the words used by applying an objective and contextual approach. The court must ask what the term, viewed in the light of the whole contract, would mean to a reasonable person having all the relevant background knowledge reasonably available to the parties at the time the contract was made (excluding the previous negotiations of the parties and their declarations of subjective intent). Business common sense and the purpose of the term (which appear to be very similar ideas) may also be relevant." [183]

In law, a reasonable person is a hypothetical person of legal fiction with an "average degree of care, skill, and judgment would be justified in drawing the same conclusions under the same circumstances or having knowledge of the same facts."[184]

4.1.7.3.1 The "reasonable coder" test for interpreting coded terms

Given that UK courts take an objective approach to contractual interpretation (i.e. What would the language of the contract would have meant to a reasonable person with all the necessary background knowledge?), the Law Commission saw it appropriate to derive the same rationality in the interpretation

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[182] "Contract Interpretation—Overview," Lexisnexis, accessed November 1, 2022, https://www.lexisnexis.com/uk/lexispsl/disputeresolution/document/393747/58C3-WYF1-F18B-71DR-00000-00/Contract_interpretation_overview.
[183] Palliser Ltd v Fate Ltd [2019] EWHC 43 (QB)
[184] "Reasonable Person Standard Definition," Law Insider, accessed December 1, 2022, https://www.lawinsider.com/dictionary/reasonable-person-standard.

of smart legal contracts. In this case, however, the test would be that of a "reasonable coder", that is, a person with knowledge and understanding of code.[185] Unlike natural language terms, coded terms are not written with reasonable persons in mind but are directed at computers. Therefore, a standard "reasonable person" test would not work as coded terms are not designed to be read by the average human persons.[186]

A reasonable person who is unfamiliar with code is unlikely to be able to interpret coded terms. Therefore, the Law Commission saw that it is more appropriate to ask what the coded terms would mean to a "reasonable person with knowledge and understanding of the relevant code".[187] An expert coder could assist courts in providing expert evidence to ascertain the meaning of the terms. In a similar vein, experts are commonly used in courts to translate on the meaning of terms drafted in a foreign language. In such a case, however, the experts do not determine the meaning or legal effect of the foreign language term as interpretation is still the role of the judge. When interpreting smart legal contracts, a coder merely translating the code for the court may not work because a court may not be able to effectively interpret the natural language translation of the code as it could with a foreign language translation. This could be because the court is unfamiliar with the way instructions in code are interpreted by a computer, or with the way a coder might arrange instructions in order to elicit a particular outcome from the running of a code.[188]

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[185] Law Commission, "Smart Legal Contracts: Advice to Government," Loc. Cit, 80-81.
[186] Ibid, 81.
[187] Ibid.
[188] Ibid, 83.

To explain this, the Law Commission gives the following example of a natural language instruction to make a purchase: "Go to the shop and buy a newspaper. If there are any eggs, get a dozen." An average human would understand this as an instruction to buy a newspaper as well as a dozen eggs if the shop carries any. On the other hand, a computer would take this as an instruction (in code) to buy a newspaper, and if there are any eggs, to buy a dozen newspapers. This discrepancy makes it likely insufficient for an expert coder to only translate the code into natural language when assisting the court in interpreting the meaning of the code. It will be necessary for the coder to explain the effect of certain combinations of words as well as to give their reasoned opinion as to what the code appeared to instruct the computer to do. The role of interpretation in this case is thus shifted from the judge towards experts.[189]

In the Law Commission's study, the majority of consultees agreed with the "reasonable coder" approach. Lloyd's of London stated that it was "necessary to apply the standard of a reasonable person with knowledge of the relevant code in order to ensure a rational outcome". Allen & Overy said that the reasonable coder approach "strikes the right balance" and is "consistent with the general principles of interpretation adopted by the English courts to date".[190]

The "reasonable coder" test, therefore, is beneficial in ascertaining as to what the parties intended the code to do, regardless of the actual performance by

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[189] Ibid.
[190] Ibid, 84.

the computer. It is more consistent with the existing approach to contractual interpretation than one that asks what the code meant to a functioning computer.[191]

4.1.7.4   Textual vs. contextual approach

Over the years, English courts have shifted between a literal (or textual) approach and a purposive (or contextual) approach in contractual interpretation. Historically, UK courts have favored a literal approach, though courts later moved toward a more purposive or contextual approach, such as in the Supreme Court decision of Rainy Sky SA v Kookmin Bank. In more recent decisions like Arnold v. Britton, it appeared that the literal or textual approach was trending again in English courts. In Wood v Capita Insurance Services Ltd, however, Lord Hodge consolidated the divergence in the two approaches and confirmed the validity and compatibility of both the literal and purposive approaches.[192]

The contextual approach is outlined in the Rainy Sky decision, in which the court considered the particular commercial purpose of a provision in order to interpret an ambiguous contractual provision.[193] Lord Clarke started that "if there are two possible constructions, the court is entitled to prefer the construction which is consistent with business common sense and to reject the other." However, only

[191] Ibid.

[192] Cara Dowling and Aimee Denholm, "Literal or Contextual? What Is the Correct Approach to Contractual Interpretation?," Oxford Law Blogs, April 26, 2017, https://blogs.law.ox.ac.uk/business-law-blog/blog/2017/04/literal-or-contextual-what-correct-approach-contractual.

[193] AllenOvery, "Interpretation of Contracts and Business Common Sense," Allen Overy, December 15, 2011, https://www.allenovery.com/en-gb/global/news-and-insights/publications/interpretation-of-contracts-and-business-common-sense.

"[w]here the parties have used unambiguous language" must the court apply the natural meaning of the word.[194]

Later, the textual approach was used in Arnold v Briton, where Lord Neuberger explained that the court will focus on the meaning of the relevant words "in their documentary, factual and commercial context", in the light of the following considerations:[195]

1. The natural and ordinary meaning of the clause;

2. Any other relevant provisions of the [contract];

3. The overall purpose of the clause and the [contract];

4. The facts and circumstances known or assumed by the parties at the time that the document was executed; and

5. Commercial common sense; but

6. Disregarding subjective evidence of any party's intentions.[196]

Lord Neuberger further stated that:

> "while commercial common sense was a very important factor to take into account when interpreting a contract, a court should be very slow to reject the natural meaning of a provision as correct simply because it appears to be a very imprudent term for one of the parties to have agreed, even ignoring the benefit of wisdom of hindsight." [197]

Though the decision in Arnold v Briton was seen as a departure from the literal approach, in Wood v Capita, the court dismissed the view that purposive and literal approaches were incompatible.[198] Lord Hodge stated:

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[194] Rainy Sky SA & ors v Kookmin Bank [2011] UKSC 50
[195] Arnold v Britton [2015] UKSC 36
[196] Ian Felstead, Mair Williams, and Oliver Browne, Loc. Cit.
[197] "Contract Interpretation—Overview," Loc. Cit.
[198] Ibid.

"Textualism [ie, Arnold] and contextualism [ie, Rainy Sky] are not conflicting paradigms in a battle for exclusive occupation of the field of contractual interpretation. Rather, the lawyer and the judge, when interpreting any contract, can use them as tools to ascertain the objective meaning of the language which the parties have chosen to express their agreement. The extent to which each tool will assist the court in its task will vary according to the circumstances of the particular agreement or agreements."[199]

Lord Hodge asserted that the approaches taken in Arnold v Briton and Rainy Sky were both valid, stating the following:

"The extent to which [textualism or contextualism] will assist the court in its task will vary according to the circumstances of the particular agreement or agreements. Some agreements may be successfully interpreted principally by textual analysis, for example because of their sophistication and complexity and because they have been negotiated and prepared with the assistance of skilled professionals. The correct interpretation of other contracts may be achieved by a greater emphasis on the factual matrix, for example because of their informality, brevity or the absence of skilled professional assistance. But negotiators of complex formal contracts may often not achieve a logical and coherent text because of, for example, the conflicting aims of the parties, failures of communication, differing drafting practices, or deadlines which require the parties to compromise in order to reach agreement. There may often therefore be provisions in a detailed professionally drawn contract which lack clarity and the lawyer or judge in interpreting such provisions may be particularly helped by considering the factual matrix and the purpose of similar provisions in contracts of the same type..."

Therefore, to ascertain the objective meaning of the contract, the court has balance both the textual and contextual approaches, analyzing the language while also examining the factual backgrounds and implication of alternative interpretations.[200]

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[199] Wood v Capita Insurance Services Ltd [2017] UKSC 24

[200] Cara Dowling and Aimee Denholm, Loc. Cit.

4.1.7.4.1 The importance of context in contractual interpretation

The interpretation of a contract requires not only for the court to look not only at the literal meaning of words, but also at its context. With this in mind, interpreting code simply to observe the performance of that code would disregard any consideration of the context in which a coder used it. As DLA Piper UK said, asking what a coded term "means" to a functioning computer would be to "discount context from the interpretation of coded terms", which would "not be appropriate".[201]

Emphasizing the importance of context in interpretation, the Law Commission cites a recent Supreme Court case, Commissioners for Her Majesty's Revenue and Customs v Tooth[202]. This case brought the issue whether Mr. Tooth's tax return contained an "inaccuracy". Although Mr. Tooth had incorrectly entered an employment loss as partnership loss in one of the boxes on a tax return form, he had explained this entry in a "white space" disclosure box included in the form to allow for written explanations.[203] HRMC argued that the tax return contained an inaccuracy because it was read by a computer, but Mr. Tooth argued that the entry should be interpreted in the context of the tax return of the whole, including the disclosure box.

The Court rejected HRMC's argument, stating that:

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[201] Law Commission, "Smart Legal Contracts: Advice to Government," Loc. Cit., 86.
[202] HMRC v Tooth [2021] UKSC 17
[203] HMRC v Tooth, 3 and 9.

"It almost goes without saying" that the meaning of words is to be determined by a "contextual approach, that is, by appraising the critical passage in the light of its context as part of the document read as a whole"[204]

It further elaborates that:

"A document written in the English language (or any language other than computer language) does not have a different meaning depending upon whether it is read by a human being or by a computer. A choice by the recipient of such a document to have it machine-read cannot alter its meaning."[205]

The Law Commission agrees with this holding that takes interpretation as a contextual exercise. In this regard, a coded term may "have a different meaning depending upon whether it is read by a human being or by a computer".[206] If the meaning "read" by the computer and the meaning interpreted by a human being diverges, the Law Commission argues that the meaning of the code should be what a reasonable coder says the code appeared to instruct the computer to do. That is, the meaning read by a human being. With this approach, courts can ascertain the intention of the parties, regardless of the computer's performance.[207]

4.1.7.5 Natural language in aiding the interpretation of coded terms

According to the Law Commission, it is possible for natural language to aid the court in the interpretation of a smart legal contract. Natural language can be used in the following ways:

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[204] HMRC v Tooth, 49.
[205] HMRC v Tooth, 50.
[206] Ibid.
[207] Law Commission, "Smart Legal Contracts: Advice to Government,", Loc. Cit., 87.

1. A term sheet[208] or a business process document could be prepared by the parties, specifying the terms of the agreement in detail. The business process document will be prepared before the parties appoint a coder to draft the code, so it can be used by the coder when writing the code. The business process document could also include an explanation regarding how the code works.[209]

2. The intention of how the parties intend for the code to operate could be expressly described in natural language. To this effect, a natural language explanation of the code could be set out in several forms. For example, in the case of a hybrid smart legal contract, the portion written in natural language could include terms that set out how the code is intended to operate, or it could be a statement of intent. On the other hand, in a solely code smart legal contract, a separate document in natural language that is agreed upon around the same time the contract is formed could provide explanation on how the code is intended to operate.[210]

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[208] A term sheet is a written document that summarizes the terms and conditions of a contract. "Term Sheet Guide," Corporate Finance Institute, December 8, 2022, https://corporatefinanceinstitute.com/resources/valuation/term-sheet-guide/.
[209] Law Commission, "Smart Legal Contracts: Advice to Government,", Loc. Cit., 88.
[210] Ibid, 89.

3. Within the code itself, the coder can include comments[211] that describe in natural language "the purpose of the code and any algorithms used to accomplish the purpose".[212]

<u>Business process document</u>

A business process document, or a term sheet, lays out in detail the terms of the transaction, which can then be translated by the coder as the contents of the smart legal contract. Whether or not a business process document can be relied on in interpreting the smart legal contract, however, depends on whether such document has been agreed upon by both parties and is a legally binding contract in itself. If it is a legally binding contract, then the business process document may be regarded as an antecedent (prior) agreement to the solely code contract.[213] In contractual interpretation, antecedent agreements can be used in interpreting a subsequent agreement. This is iterated in the case of Re BCA Pension Plan, where Snowden J stated:

> "It is also clear that earlier contractual documents (but not drafts produced in negotiation) can be used as part of the background to the construction of later documents."[214]

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[211] In coding, comments are an explanation or annotation in the source code that explain how the program works and the intention behind it.
"Guide to Code Commenting," Code Conquest, December 4, 2022,
https://www.codeconquest.com/advanced-programming-concepts/code-commenting/#:~:text=Code%20commenting%20is%20the%20practice,for%20people%20reading%20your%20code.
[212] H. James de St. Germain, "Commenting," Programming - Commenting, accessed December 1, 2022, https://www.cs.utah.edu/~germain/PPS/Topics/commenting.html.
[213] Law Commission, "Smart Legal Contracts: Advice to Government,", Loc. Cit., 89.
[214] Re BCA Pension Plan [2015] EWHC 3492 (Ch)

Thus, as antecedent agreement, a business process document can be used in interpreting the later agreement written in code. However, if the business process document was intended to be superseded by the coded agreement, it will generally be irrelevant in the interpretation of the latter. As Lord Justice Rix said in HIH Casualty and General Insurance Ltd v New Hampshire Insurance Co:

> "where the later contract is intended to supersede the prior contract, it may in the generality of cases simply be useless to try to construe the later contract by reference to the earlier one. ... Where, however, it is not even common ground that the later contract is intended to supersede the earlier contract, I do not see how it can ever be permissible to exclude reference to the earlier contract."[215]

Natural language explanation of the code

Natural language explanations of smart legal contracts that set out how the parties intend for the code to operate can be useful aids in interpretations. These explanations, as Digital Law Association explained, may include "explanatory addendums to coded terms such as logic maps or process flowcharts to assist with setting out the agreement for how the code should work".[216] According to the Law Commission, if a contract contains coded terms, it is advisable for parties to provide a natural language explanation of how they intend for the code to operate. This will be relevant where a code does not perform as intended by the parties.[217]

Whether the natural language explanation of the smart legal contract could be used to aid courts in interpreting the coded terms will depend on the nature and construction of the natural language explanation as well as whether the explanation

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[215] Law Commission, "Smart Legal Contracts: Advice to Government,", Loc. Cit., 90.
[216] Ibid.
[217] Ibid.

constitutes as part of the parties' contract. If the explanation is part of the contract, then it can be relied upon to interpret the smart legal contract. [218]

If, however, the natural language explanation does not constitute as part of the contract, it is still possible for it to be used in interpreting the coded terms, though it depends how the court construes the explanation and its structure. To illustrate, a natural language explanation that is considered to be a document forming part of the same transaction as the coded agreement may be used as an aid in interpreting the coded agreement. This is because as a rule of interpretation, a document that is formed at the same time, or shortly after, the primary document, may be used to aid in the interpretation of the primary document if it forms part of the same transaction.[219]

Natural language explanations may also be used in interpreting the coded terms if it forms part of the admissible background. This includes facts or circumstances known or reasonably available to both parties which existed at the time the contract was made.[220]

If parties wished to ensure that a natural language explanation of the code will be considered by court when interpreting coded terms, it is advisable for them to state that such explanation constitutes part of their legally binding contract. Alternatively, if the natural language explanation is a document separate to the

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[218] Ibid, 90-91.
[219] Kim Lewison, *The Interpretation of Contracts*, 7th ed. (London: Sweet & Maxwell, 2020).
[220] Arnold v Britton [2015] UKSC 36

contract, the parties could expressly incorporate by reference[221] the terms of the explanation into their coded agreement.[222]

<u>Natural language comments in source code</u>

The Law Commission emphasized that "good coding practice requires that code include natural language comments", and that such comments could be used to define or express contractual terms. Comments may constitute contractual terms of the smart legal contract depending on its contractual interpretation and construction.[223]

If the comments form part of the contract as they are composed of contractual terms, they may be used in the interpreting the contract as a whole. In disputes regarding the coded terms of the contract, the meaning of the terms outlined by the comments would be pertinent to the interpretation of such coded terms in dispute. This is due to a rule of interpretation dictates that the terms of a contract must be interpreted by looking at the contract as a whole.[224]

Where the comments in the code are not contractual terms, the Law Commission is of the opinion that it could still be relevant in interpreting the coded terms of the contract. An example of this is where comments explain the function of a single line of code, in which case the Law Commission analogizes such

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[221] Incorporation by reference is the act of including a second document within another document (e.g. a contract) by only mentioning the second document
Inc. US Legal, "Find a Legal Form in Minutes," Incorporate by Reference Law and Legal Definition | USLegal, Inc., accessed December 1, 2022,
https://definitions.uslegal.com/i/incorporate-by-reference/
[222]Law Commission, "Smart Legal Contracts: Advice to Government,", Loc. Cit., 91.
[223] Ibid, 93.
[224] Ibid.

comments to headings in traditional contracts, which are generally accounted for when interpreting the meaning of a clause (unless the contract stipulates otherwise). That said, it is not permissible for headings to override clear language or create an ambiguity if none would otherwise exist.[225]

In the case where the comments in a code reveal the parties' subjective declarations of intent or pre-contractual negotiations, they will not be allowed as aids for contractual interpretation.[226]

According to the Law Commission, a way to ensure that natural language comments in the code are relevant in the court's interpretation of coded terms is for the parties to expressly disclose that such comments form part of the smart legal contract.[227]

4.1.7.6 Implied terms in English contractual interpretation

In English law, it is possible for a contractual term to be implied. The test for doing so is outlined in Marks & Spencer Plc v. BNP Paribas Securities Services Trust Co (Jersey) Ltd. A term may be implied if:

1. it is necessary to give the contract commercial or practical coherence;

2. it can be clearly expressed;

3. it does not contradict an express term;

4. reasonable parties would have agreed the term was needed; and

5. it passes the officious bystander test.

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[225] Kim Lewison, 107.
[226] Law Commission, "Smart Legal Contracts: Advice to Government,", Loc. Cit., 94.
[227] Ibid.

It is possible for terms to be implied into a contract in one of three ways. The first is where the term is so obvious that it "goes without saying", or where it is necessary to give "business efficacy" to the contract.[228] In employment contracts, for example, mutual trust and confidence is a generally an implied term.

Second, terms can also be implied into a contract if it derives from the custom or practice of the relevant trade, market, or locality.[229] In Cunliffe-Owen v Teather & Greenwood, the Court held that stock exchange rules was implied in the agreement due to customary trade usage.[230] Such terms must be notorious, certain and reasonable, and not contrary to law in order to have binding effect.

Third, a term can be implied by legislation which may overrule an expressed term of the contract.[231] For instance, section 14(1) of the Sale of Goods Act 1979 excludes all other implied terms as to quality or fitness of goods supplied under a contract of sale, unless they are mentioned in sections 14 and 15 of the Act.[232]

4.1.7.6.1 Implied terms in smart legal contracts

The Law Commission is of the opinion that implied terms can and should apply to smart legal contracts as they do in conventional contracts. However, the Commission notes that certain types of implied terms would likely be less relevant in the context of the smart legal contract or difficult to establish.[233] For example, in

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[228] Andrew Burrows, *A Restatement of the English Law of Contract*, 2nd ed. (Oxford, United Kingdom: Oxford University Press, 2020), 93.; Ali v Petroleum Company of Trinidad and Tobago [2017] UKPC 2, 5.
[229] Andrew Burrows, Op. Cit.
[230] Cunliffe-Owen v Teather & Greenwood [1967] 1 WLR 1421.
[231] Andrew Burrows, Op. Cit.
[232] Law Commission, "Smart Legal Contracts: Advice to Government,", Loc. Cit., 95.
[233] Law Commission, "Smart Legal Contracts: Advice to Government,", Loc. Cit., 95.

a conventional contract, an implied term may exist where the parties shall cooperate to ensure the performance of the agreement.[234] However, this implied term would likely not be necessary in the context of a smart legal contract given the automaticity of it performance by which "trust and cooperation are neither required nor nurtured".[235]

Therefore, it may be necessary for courts and tribunals to consider a new set of implied terms that specifically applies to smart legal contracts. For example, it has been suggested that terms may be implied into consumer algorithmic contracts to protect consumer privacy.[236]

4.1.7.7 The current approach to interpretation and compatibility with smart legal contracts

The Law Commission concluded their opinion that the current approach used by courts as to contractual interpretation is flexible enough in accommodating smart legal contracts. At this point in time, the Law Commission does not see any need for reform in the approach other than a slight development in regard to the test for interpreting coded terms (i.e. the "reasonable coder" test). In their study, it was found that the majority of consultees also agreed that the current approach to interpretation will not create issues in relation to smart legal contracts. According to DLA Piper, in regard to addressing disputes of interpretation, new legislation

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[234] H. G. Beale, Joseph Chitty, and Joseph Chitty, *Chitty on Contracts*, 34th ed. (London: Sweet & Maxwell, Thomson Reuters, 2021).

[235] Sarah Green, "Smart Contracts: Interpretation and Rectification," Lloyd's Maritime and Commercial Law Quarterly, no. 2 (May 10, 2018): pp. 234-251, 245.

[236] Law Commission, "Smart Legal Contracts: Advice to Government,", Loc. Cit., 96.

will only necessary "if, as things develop, it becomes clear that there are gaps in the common law that prove impossible to close in practice."[237]

Stephan Smoktunowicz stated that the current approach will not create any issues as long as interpretation is aided by sufficient "experienced subject matter experts". This is because the "reasonable coder" test proposed by the Law Commission would entail a greater reliance on expert coders to interpret coded terms judges would likely be unable to interpret.[238]

4.1.5. Recognition of smart contracts in the United States

Because smart contracts are such a new technology, many jurisdictions around the world have yet to recognize them through legislation, although a few have made strides. In 2017, the state of Arizona has passed a legislation that allowed smart contracts to exist in commerce. The revised statute states: "A contract relating to a transaction may not be denied legal effect, validity or enforceability solely because that contract contains a smart contract term."[239] In 2018, the state of Tennessee has also passed a similar legislation, recognizing the legal authority of smart contracts in conducting electronic transactions.[240] In the Arizona statute, smart contract is defined as an "event-driven program, with state, that runs on a

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[237] Ibid, 97.
[238] Ibid.
[239] "2021 Arizona Revised Statutes :: Title 44 - Trade and Commerce :: § 44-7061 - Signatures and Records Secured through Blockchain Technology; Smart Contracts; Ownership of Information; Definitions," Justia Law, accessed September 29, 2022,
https://law.justia.com/codes/arizona/2021/title-44/section-44-7061/.
  "California SB786," TrackBill, accessed September 29, 2022,
[240] "Tennessee SB1662: 2017-2018: 110th General Assembly," LegiScan, accessed December 1, 2022, https://legiscan.com/TN/bill/SB1662/2017.

distributed, decentralized, shared and replicated ledger and that can take custody over and instruct transfer of assets on that ledger."[241] It is important to note that while these laws recognize smart contracts as lawful in business transactions, they do not recognize smart contracts as legally binding agreements themselves. Additionally, no government has yet distinguished in legislation the concept of a legally binding smart contract (i.e. smart legal contracts) from smart contracts in general. Nevertheless, territorial jurisdictions may have contract laws and principles in place that could apply to and encompass smart contracts within their legal frameworks.

In an article posted on Harvard Law School Forum on Corporate Governance, Alex Lipton and Stuart Levi states that with the recognition of electronic contracts in existing legal frameworks in the US, it is likely that courts would recognize the validity of a code executing a smart contract. They elaborate that there is also precedent that perhaps indicate a solely-code smart contract would be given similar legal protection.[242]

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[241] "2021 Arizona Revised Statutes :: Title 44 - Trade and Commerce :: § 44-7061 - Signatures and Records Secured through Blockchain Technology; Smart Contracts; Ownership of Information; Definitions," Loc. Cit.

[242] Alex Lipton and Stuart Levi, "An Introduction to Smart Contracts and Their Potential and Inherent Limitations," The Harvard Law School Forum on Corporate Governance, May 26, 2018, https://corpgov.law.harvard.edu/2018/05/26/an-introduction-to-smart-contracts-and-their-potential-and-inherent-limitations/.

4.2 Does a smart contract constitute a legally valid and enforceable contract in accordance with Article 1320 of the Civil Code?

As smart contracts become more widespread, it is increasingly pertinent to address its status within the context of contract law and whether or not it forms a legally binding contract. As Satjipto Raharjo stated in relation to his theory of progressive law, the law is not stationary but a moving institution that always changes due to the developments of society.[243] As such, the law must adapt to the constantly changing climate of technological advancements.

One such way in which the idea of progressive law can be observed in Indonesia is the recognition of electronic contracts in the ITE Law, a law that was introduced by the government in response to the developments of information technology, which made the use of electronic contracts in business transactions ubiquitous.[244] As electronic contracts introduced a type of contract that is different in form to traditional contracts, this created pertinent legal issues as to the validity and enforceability of these new form of contracts. As such, lawmakers saw it necessary to update the current body of law to address this issue and recognize electronic contracts as a form of legally binding contracts. Government Regulation no. 71 of 2019 (Article 46) further expands on the law surrounding electronic contracts as introduced in the ITE law, elaborating that electronic contracts will be valid so long as it fulfills the conditions mirroring those outlined in Article 1320 of

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[243] Satjipto Rahardjo, *Hukum Progresif: Sebuah Sintesa Hukum Indonesia* (Yogyakarta: Genta Pub., 2009), 6.
[244] See Law no. 11 of 2008 regarding Electronic Information and Transactions, Consideration point C.

the Civil Code. That is, (1) consent, (2) capacity, (3) specific subject matter, and (4) admissible cause.

Likewise, it is also relevant to address the validity of smart contracts given the increasingly advancing technology and the potential it has to revolutionize business transactions in many different industries. Given the recognition of electronic contracts in the law, many experts have concluded in articles and academic journals that smart contracts constitute a form of electronic contract. The definition of an electronic contract in Article 1(17) of the ITE is law is an "electronic agreement of parties entered through an electronic system". This legal definition would certainly encompass the concept of a smart contract, which as Nick Szabo defined as "a set of promises, specified in digital form, including protocols within which the parties perform on these promises."[245] The digital form of a smart contract entails that is entered through an electronic system. Thus, as electronic contracts, it is possible for a smart contract to constitute as a valid and enforceable contract. Whether a smart contract will be considered a valid contract, then, will depend on whether it fulfills the conditions stated in Article 46 of Government Regulation no. 71 of 2019, which derives from Article 1320 of the Civil Code.

As stated, for a contract to be valid under the law, it must fulfill the requirements of Article 1320 of the Indonesian Civil Code, which outlines the following four conditions:

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[245] Nick Szabo, "Smart Contracts: Building Blocks for Digital Free Markets," Extropy Journal of Transhuman Thought, 1996.

1.   there must be consent of the individuals who are bound thereby;

2.   there must be capacity to conclude an agreement;

3.   there must be a specific subject;

4.   there must be an admissible cause.

With respect to the first requirement (consent), Article 19, states that parties conducting electronic transactions that are stated electronic contracts must use an agreed-on electronic system.[246] In the case of smart contracts, the agreed-on electronic system would likely be a in the form of a blockchain or a distributed ledger such as Ethereum. In addition, the element of consent entails an offer and acceptance to form an agreement. This element can be seen in Article 20(1) of the ITE law which states that the approval of the offer must be carried out with an electronic acceptance statement. This article affirms the adoption of the Acceptance Theory (Onvans Theorie), wherein a contract is born when the letter of acceptance from the offeree has arrived to the offeror, regardless of whether he knows of or has read the acceptance.[247]

With respect to the second requirement (capacity), it is required for business actors offering products through an electronic system must provide complete and correct information regarding the terms of the contract, the manufacturer, and the products being offered. This information includes information containing the identity and status of legal subjects and their competencies, both as producers, suppliers, operators and intermediaries (vide Article 9 of the ITE Law and its

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[246] Muhammad Syaifuddin, Op. Cit., 335.
[247] Yahya Ahmad Zein, *Kontrak Elektronik & Penyelesaian Sengketa Bisnis e-Commerce Dalam Transaksi Nasional & Internasional* (Bandung: Mandar Maju, 2009), 56.

Explanation). For smart contracts involving sales and purchase this could ensure the capacity of the seller as well as serve to protect the consumer.[248]

In terms of the third requirement (specific subject matter), Article 9 of the ITE law is also pertinent as "complete and correct information" also includes information that describes the goods and/or services offered, such as names, addresses, and descriptions of goods/services. This article ensures certain that determinable objects or subject matters can be ascertained by the parties making electronic contracts as the products offered online must be described correctly and completely.[249]

As to the fourth requirement (admissible cause), the ITE law sets out several prohibitions that violates law, order and decency that may make a cause in an electronic contract in admissible. These prohibitions are laid out in Article 27(1), (2), (3) and (4), Article 34(1), Article 36, and Article 37. To determine whether the cause of a smart contract to be admissible, one must observe these laws and ensure that the smart contract does not violate the law.[250]

With no consent, a smart contract would not simply not exist as a legally binding contract. With defective consent or capacity, the smart contract would be voidable and subject to cancellation[251], and without a specific subject or a lawful cause, the smart contract will simply be null and void by law.[252] The same principles that govern traditional contract thus applies to smart contracts.

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[248] Muhammad Syaifuddin, Op. Cit., 265.
[249] Ibid, 266.
[250] Ibid.
[251] Vincensia Esti Purnama Sari, Op. Cit., 192.
[252] Annalisa Yahanan, Muhammad Syaifuddin, and Yunial Laili Mutiari, Op. Cit., 21.

A smart contract must contain the same essential elements that make up a traditional agreement. Natural elements and accidental elements may also exist in a smart contract, although the current technology surrounding smart contracts may not be as sophisticated as to program complex functions other than simple transactions.

In addition, smart contracts must observe the principles of contract law. Under the principle of freedom of contract, individuals and legal persons are free to make agreements so long as they are capable to do so.[253] Under the principle of consent, parties to a smart contract must reach a meeting of minds to which the consent must not be obtained by error, obtained by duress or by fraud (vide Article 1321 Civil Code).[254] Furthermore, due to the automaticity of smart contracts, the principle of pacta sunt servanda is automatically observed. There will be no need to invoke the binding power of the contract to ensure its objectives are fulfilled.

Therefore, as electronic contracts, smart contracts can be considered valid and legally binding agreements so long as they fulfill the validity requirements of Article 1320 of the Civil Code. As with traditional contracts, a legally valid smart contract must constitute the essential elements that make up a contract and observe the principles of contract law. In determining whether a smart contract constitutes a valid contract, it may be pertinent to distinguish smart contracts (which are, in essence, not contracts by themselves) and smart legal contracts.

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[253] See Article 1338 of the Civil Code.
[254] I Ketut Oka Setiawan, Op. Cit., 58.

4.3 How will smart legal contracts with ambiguous meanings be interpreted under Indonesian law?

Within the Indonesian body of academic legal literature, there have been several experts who have addressed the validity of smart contracts and their placement within the Indonesian legal contract. However, not many have engaged in the issues surrounding the interpretation of smart contracts. To address this issue, the author will draw upon the findings of the UK Law Commission in their report regarding smart legal contracts, which applicably tackled questions of interpretation surrounding smart legal contracts and provided advice to the government on the matter. The author will then examine the methods of interpretation as suggested by the Law Commission through the lens of Indonesian contractual interpretation to determine how Indonesian courts would interpret smart legal contracts.

    4.3.1   Interpreting smart legal contracts under English law according to the Law Commission

In their report regarding smart legal contracts, the Law Commission suggests tweaking the traditional "reasonable person" test to a "reasonable coder" test when interpreting coded terms. In other words, the courts would look at what the language would mean to a person with knowledge and understanding of code, the reason being that average persons would unlikely be able to interpret coded terms.[255] The "reasonable coder" test will allow a more accurate interpretation of

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[255] Law Commission, "Smart Legal Contracts: Advice to Government,", Loc. Cit., 80-81.

smart legal contracts that is still consistent with the current approach that aims to ascertain the parties' objective intent.

In addition, the Law Commission emphasizes the importance of contextual analysis in contractual interpretation. In the context of smart legal contracts, this means considering the context in which the coder used the coded term instead of simply observing the performance of that code.[256] The Law Commission also advocated for the use of natural language aids in interpreting coded terms, particularly in the forms of business process documents, natural language explanations of how the coded terms are intended to operate, and natural language comments within the code itself.[257] Furthermore, the Law Commission also expressed the opinion that implied terms could exist in smart legal contracts as they do in traditional contracts.[258]

The Law Commission concluded that the court's current approach in interpreting contracts is sufficient and flexible enough in accommodating smart legal contracts. Furthermore, the Law Commission does not see a need to reform the approach at this point in time other than a slight tweak in the objective test to interpretation (from "reasonable person" to reasonable coder").[259]

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[256] Ibid, 87.
[257] Ibid, 88-89.
[258] Ibid, 95.
[259] Ibid, 97.

4.3.2 Interpretation of smart legal contracts under Indonesian law

In Indonesian contract law, the rules of contractual interpretation are outlined in 1342 to 1351. Judges must apply these provisions in cases surrounding disputes as to interpretation.

Although the Indonesian and English legal systems contain various differences in principles and approaches, the findings in the Law Commission report can still be helpful in determining the placement of smart contracts and smart legal contracts within Indonesian legal framework.

First, the "reasonable coder" test suggested by the Law Commission would not be applicable in Indonesian contract law because the law in Indonesia propagates a subjective approach rather than an objective one. A subjective approach to contractual interpretation considers the parties' state of mind upon entering an agreement

However, the Law Commission also suggests the use of expert coders to help interpret the code to determine the objective intent of the contract. Perhaps Indonesian courts could also allow the aid of expert coders as evidence to help determine the meaning of the code and the subjective intent behind it. The problem in this, however, is that expert evidence is not encompassed as admissible evidence according to Article 1866 Civil Code, which states that evidence shall comprise of written evidence, evidence presented by witnesses, the inference, the confession, the oath. Nowhere in the Civil Code does it state that expert evidence qualifies as evidence presented by witness. Thus, as expert opinions cannot stand alone as

evidence in Indonesian civil procedure, the position of experts only serves to strengthen or add to existing evidence. [260]

One way in which Indonesian courts can adapt the findings of the Law Commission is by examining the contextual and factual backgrounds of smart legal contracts to determine the intent of the parties when forming these terms. In Indonesian contract law, when the words are open to various interpretations can courts consider the intent of the parties involved (Article 1343), interpret the words in the sense that they produce some effect (Article 1344), or interpret them to correspond most with the nature of the agreement (Article 1345). Ascertaining the parties' intent if there is ambiguity within the language is in line with Article 1343 of the Civil Code, but whereas the UK courts use an objective approach as to interpretation, Indonesian courts use a subjective approach. In disputes regarding interpretation of smart legal contracts, contextual analysis will be necessary to determine the parties' subjective intent.

Nevertheless, there are still many uncertainties as to smart contracts and their interpretation under Indonesian contract law, which will need to be remedied through new regulations. The first issue that needs to be addressed is the distinction between smart contracts and smart legal contracts. If ever regulations regarding the interpretation of smart contracts are passed, this will imply that smart contracts can be legally valid contracts. To do this, it is important to establish terminology that

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[260] Antonio A Bagaskara, "Kedudukan Ahli Dalam Hukum Acara Perdata," LBH "Pengayoman" UNPAR, August 15, 2022, https://lbhpengayoman.unpar.ac.id/kedudukan-ahli-dalam-hukum-acara-perdata/.

distinguish between standard smart contracts, which are not legally binding contracts themselves, and the type of smart contract that do constitute legally binding contracts (i.e. smart legal contracts).

Next, it is important to distinguish between the type of smart legal contracts that could exist, i.e. natural language contracts with automatic performance by code, hybrid contracts, and contracts recorded solely in code. The first type of smart legal contract, natural language contracts with automatic performance by code, is unlikely to create novel issues of interpretation as the provisions of contract are mostly written in natural language with the code merely playing a performative function. Hybrid contracts and solely code contracts, however, would certainly create new issues of interpretation lawmakers must address.

One way to prevent these issues of interpretation would be for the parties to include natural language aids, as suggested by the Law Commission, such as business process documents, natural language explanations of how the coded terms are intended to operate, and natural language comments within the code itself. These documents could serve as written evidence under Article 1866 Civil Code if disputes occur regarding interpretation. These natural language aids can serve to explain the provisions of the contract and help ascertain the intent of the parties.

Nevertheless, much regulation is still needed in order to address these legal uncertainties. Although English law was concluded by the Law Commission to be flexible enough encompass smart legal contracts, the current breadth of Indonesian contract law is unlikely to resolve many issues regarding the interpretation of smart legal contracts. For example, according to Article 31 of Law no. 24 of 2009 and

Article 26(1) of President Regulation no. 63 of 2019, Indonesian must be used to construct a contract "involving state institutions, government agencies of the Republic of Indonesia, Indonesian private institutions, or individual Indonesian citizens."[261] For smart legal contracts that contain terms written in code, this will certainly create issues as these terms are not written in the Indonesian language. It is possible for the parties to provide a translation of the code in Indonesian, but as the Law Commission points out, merely providing a translation may not be enough for person without knowledge of code to fully understand the meaning behind the code.

As smart contracts become more widespread, it will be a matter of time before smart legal contracts become ubiquitous as new form of contract in Indonesia. When that happens, disputes will surely regarding the interpretation of smart legal contracts. Therefore, lawmakers of Indonesia will need to create new legislation in order to address and resolve these legal issues.

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[261] Mochammad Januar Rizki, "Mengenal Kewajiban Penggunaan Bahasa Indonesia Dalam Perjanjian Bisnis," hukumonline.com, accessed December 1, 2022, https://www.hukumonline.com/berita/a/mengenal-kewajiban-penggunaan-bahasa-indonesia-dalam-perjanjian-bisnis-lt5f6aada1062c1/.