

THE ASIAN BUSINESS LAWYER

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Distributed Ledger Technologies in the realm of Intellectual Property Rights: Panacea or Puzzle?

*Namrata Bhowmik**, *Naman Anand***, and *Dr. Ruchi Anand****

ABSTRACT

The 21st century has now increasingly become an age of industrial innovations and technological breakthroughs, resulting in a paradigmatic transition in how entitlements and statutory rules of socio-economic phenomena are treated, as evidenced by the extensive use of digital technology. Blockchain technology and other digital technologies have established a new pattern of human life, upending existing hierarchical institutions and establishing new tangible boundaries. As a result of intellectual operations, the rise of computerized progression and Blockchain exchanges necessitates critical data gathering and investigation. This result is even more true regarding the character traits of changing autonomy and rights and responsibilities of such concerned parties, influencing their interest in the arrangement, thus raising the value of intellectual components and energizing the development of qualities. With numerous governments and enterprises studying their future results and new Blockchain use cases emerging regularly,¹ Blockchain technology and associated distributed record developments have become fascinating lately. Strikingly, DLT, which is widely renowned for its ability to establish chains of secure, immutable, and time-bound information, is gradually being utilized for certain Intellectual Property (IP) operations such as brand enforcement, protection, and marketing technology. This technological advancement is one to have quickly gained traction outside the fintech realm. It is proving to be a boon in IP-sectors where counterfeiting of products and problems with traceability is a real head-scratcher, especially in the pharmaceutical and the automobile sector, not to forget several fashion sectors such as luxury brand “inspirations.”

What makes this technology appealing is the vast variety of procedures it covers - whether it is data security or confidential transaction details - while also addressing other difficulties such as scalability. Regardless of the potential hurdles associated that such a technological advancement might have with legal applications, in the context of

* 4th Year Law Student, Symbiosis Law School, Hyderabad; Head of C&WD, Indian Journal of Projects, Infrastructure, and Energy Law; Legal Intern, Ananda IP, Bangkok

** 4th Year Law Student, Rajiv Gandhi National University of Law, Punjab; Undergraduate Research Assistant, Dr Heather Katharine Allansdottir, Incoming Visiting Fellow, University of Cambridge; Managing Editor, Indian Journal of Projects, Infrastructure, and Energy Law

*** Associate Professor, Department of Commerce & Business Management, DAV College, Punjab University, Chandigarh

¹ D Sumathi, T Poongodi, H Balusamy, H Bansal, et al, *Convergence of Blockchain Technology & E-Business: Concepts, Applications, and Case Studies*, Taylor & Francis (2021).

IP-intensive sectors, distributed ledger technologies such as Blockchain and the like provide significant opportunities for meaningful protection of IP, certification, and documentation, whether at the stage of registration or in a Court of Law. Nevertheless, the need of the hour still remains to comprehensively analyse the pros and cons of this new technological development and to analyze its viability as an accepted mode of carrying out legal procedures, specifically in the field of IP. The question stands as “How does such a highly evolving technological development cater to a sector that deals with a rainbow of elements, mostly creative and abstract in nature?”

KEYWORDS: IP, Blockchain, Distributed Ledger Technology, Brand Protection, Counterfeiting

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I. Understanding the Blockchain Technology Better

In recent years, Blockchain technology has attracted a lot of attention from academics and business - in sectors ranging from Power² to Healthcare.³ It allows transactions to be completed without the need for a trusted intermediary (third party). Business operations may indeed be done quickly and inexpensively as a result of this new technological development. Since it is difficult to tamper with any transactions kept in Blockchains, and all historical transactions are auditable and traceable, the immutability of Blockchains ensures distributed trust.

Due to their decentralised, distributed, horizontal, and open-source character, Blockchain is the newest in a series of digital technologies expected to cause necessary and significant changes in how our existing financial, diplomatic, and institutional relations and institutions are organised. Many now believe Blockchain will enable an open, federated, disintermediated, innovative, anonymous, and cryptographic mode of social organisation, roughly 20 years

² L Diestelmeier, *Changing power: Shifting the role of electricity consumers with blockchain technology – Policy implications for EU electricity law*, Energy Policy 128, at 189-96 (2019).

³ J Roman-Belmonte, H De-La Corte Rodriguez, E Carlos-Rodriguez Merchan, *How Blockchain Technology Can Change Medicine*, Postgraduate Medicine 130(4), at 420-27 (2018).

after the declaration of cyberspace independence⁴ and the crypto-anarchist manifesto,⁵ and 12 years after Yochai Benkler highlighted how interpersonal output and Web 2.0 would facilitate a new frontier in web technology.⁶

These assumptions are situated partially on Bitcoin's relative presentation. Bitcoin utilises Distributed Ledger Technology (DLT) to follow the stockpile and development of a monetary instrument's virtual tokens in a decentralised, disintermediated, and usually safe way - although it is possible to tamper with certain assets (such as e-wallets)⁷ related to it. In the expressions of its baffling creator(s), it is a 'distributed electronic money framework' and nonstop evidence of idea.⁸ In its most uncomplicated depiction, a Blockchain is a DLT, of which each client has a persistently refreshed definitive duplicate. Any individual approaching the record approaches a similar entire exchange history and the capacity to confirm the legitimacy, everything being equal. Modern agreement methodologies guarantee that new passages to this distributed information base may be added if they are predictable with past records. This disseminated information base is fit for putting away any sort of information. On Blockchain, anybody might save any snippet of data, which turns out to be essential for the highly durable record. Records may likewise be utilised to keep track of tokens related to individual accounts and time-stepped exchanges of tickets between accounts. DLTs may subsequently verify that exchanges are steady across time and that tokens are not spent twice. A record/account holder can be a pseudonymous or even anonymous human, a smart contract, a legal entity or any gathering or mix thereof, contingent upon the actual specialised design. Tokens may address almost anything: a virtual cash unit, a resource, an object, or another dynamic element. Besides these fundamental realities, different Blockchains may hold fast to various plan ways of thinking.

Even if Bitcoin fails to establish itself as a secure prominent currency, its fundamental technological architecture enables individuals to trade value tokens anonymously with one another safely and securely, with little or no need of intermediaries such as banks. Due to its prominence in the cryptocurrency space, there has been considerable interest in Blockchain's applicability to other sectors, including Intellectual Property Rights (IPR).

Second generation DLTs might assume a part in the domain of IPR. DLTs utilise upgraded renditions of the Bitcoin innovation to store exchanges of a

⁴ John Perry Barlow, *A Declaration of the Independence of Cyberspace*, ELECTRONIC FRONTIER FOUNDATION, <https://www.eff.org/cyberspace-independence>

⁵ TC May, *The Crypto Anarchist Manifesto* (22 November 1992)

⁶ Y Benkler, *The Wealth of Networks: How Social Production Transforms Markets and Freedom* (Yale University Press 2006)

⁷ M Orcutt, *Once Hailed as Unhackable, Blockchains are Now Getting Hacked*, MIT Tech. Rev., <https://www.technologyreview.com/2019/02/19/239592/once-hailed-as-unhackable-blockchains-are-now-getting-hacked/> (Feb 19 2019).

⁸ S Nakamoto, 'Bitcoin: A Peer-to-peer Electronic Cash System' (2008)

wide range of tokens, including area names, character records, proprietorship deeds, freely available reports, social government assistance installments, ledgers and exchanges of fiat monetary forms. Blockchain advancements of this sort can likewise store executable programming. The code empowers hubs situated within the organisation to cooperate with the information put away on a Blockchain and act independently if a few conditions are met. Simply put, such code comprises what is presently usually alluded to as a smart contract.⁹

Smart contracts were initially proposed by Nick Szabo in the 1990s.¹⁰ If all pre-established circumstances are satisfied, smart contracts will automatically execute contract provisions expressed in computer programmes. Cryptocurrencies like Bitcoin and Ethereum use distributed ledgers to keep track of transactions and preserve them for future reference. Contracts that are performed by a third party, on the other hand, take longer and cost more to execute. A “peer-to-peer market” will become much more feasible with the combination of Blockchain technology and smart contracts.

On the Blockchain, smart contracts ensure the accurate execution of contracts. As a public ledger, Blockchains cannot be manipulated. A Blockchain is a network of blocks that is constantly expanding. Whenever a new block is created, all nodes in the network participate in verifying the block, which is then sent to the Blockchain for confirmation.¹¹ Upon validation, the block is added to the Blockchain. Consensus methods and algorithms are designed to assess the trustworthiness of a block. Which node stores the next block and how it is validated by other nodes are determined by those algorithms.¹² Proof of Work (PoW),¹³ Proof of Stake (PoS), and Practical Byzantine-Fault Tolerance (PBFT)¹⁴ are representative consensus algorithms. It is generally done by people called miners who are the first to solve the Blockchain puzzle. This means that each miner has a copy of the Blockchain. To establish consensus, PBFT takes several rounds of voting. As a result, transactions can be completed without the participation of other parties, such as banks.

This technology immensely helped save the transaction costs and protect the users’ privacy as they can simply be a part of the Blockchain through their

⁹ P Cuccuru, ‘Beyond Bitcoin: An Early Overview on Smart Contracts’ (2017) 25(3) *International Journal of Law and Information Technology*

¹⁰ Szabo, N. *The Idea of Smart Contracts*. Nick Szabo’s Papers and Concise Tutorials. (1997).

¹¹ M Crosby, Nachiappan, P Pattanayak, S Verma, and V Kalyanaraman, *Blockchain Technology: Beyond Bitcoin*, Applied Innovation Rev. Iss 2, Sutardja Centre for Entrepreneurship & Technology (UC Berkeley), <https://j2-capital.com/wp-content/uploads/2017/11/AIR-2016-Blockchain.pdf> (June 2016).

¹² D Oyinloye, J Sen Teh, N Jamil, and M Alawida, *Blockchain Consensus: An Overview of Alternative Protocols*, *Symmetry* 13(8) 1363 (2021).

¹³ Nakamoto, *supra* note 11

¹⁴ Castro, M. Liskov, B. *Practical Byzantine Fault Tolerance*. (1999); King, S. Nadal, S. *Ppcoin: Peer-to-Peer Crypto-Currency with Proof-of-Stake*. (2012).

virtual addresses. Blockchain systems have the potential for multiple nodes to gain consensus simultaneously, resulting in the split (bisected) branches. For example, a side chain that is too short might be desolated. This technique is more efficient since the longer chain is more resistant to malicious attacks than the shorter chain in dispersed systems. Anonymity, persistence, decentralisation, and immutability are the main features of Blockchain technology.¹⁵

As a significant development in Blockchain technology, smart contracts may be viewed as an essential step forward.¹⁶ “Smart contracts” were first suggested in the early 1990s as a computerised transaction protocol that implements a contract’s provisions. Smart contract terms can be executed automatically when a specific criterion is met. Smart contracts are enabled by Blockchains and then turned into computer programmes that can be run. It has also been possible to retain the logical links between contractual provisions in logical flows in programmes. An unchangeable blockchain transaction records the execution of each contract. A suitable access restriction and contract enforcement are ensured by smart contracts. Each function in the contract can have its own set of access permissions, which developers can set. When any condition in a smart contract is met, the triggering phrase will automatically and predictably perform the appropriate function.

In total, there are four phases in the life cycle of smart contracts which are as possible:

- Creation: The first round of negotiations is conducted by several parties to determine commitments, benefits, and limitations on contracts. Deliberations and negotiations may continue several times before an agreement is reached. Initiation of a contract is then facilitated by lawyers or counselors. Computer language experts, including declarative and logic-based languages, transform natural language agreement into a smart contract.¹⁷
- Deployment: Verified smart contracts can then be deployed on blockchain platforms. Due to the immutability of blockchain, contracts placed on them cannot be changed. To make any changes, one must sign

¹⁵ Zheng, Z. Xie, S. Dai, H. Chen, X. Wang, H. *Blockchain Challenges and Opportunities: A Survey*. International Journal of Web and Grid Services. (2018); Tapscott, D. Tapscott, A. *Blockchain Revolution: How the Technology behind Bitcoin is Changing Money, Business, and the World*. (2016).

Li, M. Weng, J. Yang, A. Lu, W. Zhang, Y. Hou, L. Liu, J. Xiang, Y. Deng, R. *CrowdBC: A Blockchain-based Decentralized Framework for Crowdsourcing*. (2018).

¹⁶ Ream, J. Chu, Y. Schatsky, D. *Upgrading Blockchains: Smart Contract use Cases in Industry*. Deloitte Press. (2016).

¹⁷ Idelberger, F. Governatori, G. Riveret, R. Sartor, G. *Evaluation of Logic-Based Smart Contracts for Blockchain Systems*. (2016).

or create a new contract.¹⁸ Blockchain allow all parties to access contracts once deployed, and any party can use the blockchain to access the contract. By freezing the associated digital wallets, the digital assets of both parties to the smart contract are also frozen.¹⁹ As a result, parties can be identified based on digital wallets.

- Execution: Contractual terms get reviewed and assessed after the smart contracts deployment.²⁰ Contractual processes are then automatically implemented as soon as the contracting criteria are met. An intelligent contract consists of a series of declarative assertions linked by logical connections. Thus, it comprises a collection of declarative assertions with logical relationships. As soon as the condition is met, the relevant statement gets performed immediately.²¹ Following that, the committed transactions and modified values are recorded on the blockchains.
- Completion: As soon as a smart contract is performed, all parties are updated with their new statuses.²² As a result, the transactions that occur during smart contracts, and the updated states, get recorded on the blockchain. As a result of this, the digital assets get transferred from one entity to another. As a result, the digital assets of the parties involved get unlocked and can be accessed. The entire life cycle of the smart contract concludes at this stage.

Numerous transactions get completed throughout the execution of the smart contract and then finally get recorded in the Blockchain.

This technology generates an immutable chain of information that is timestamped and is already being used in brand protection and security, marketing, consumer interaction, and other fields.²³ New use cases seem to emerge every day.. Fintech is not the only area in which the technology has gained popularity. Many IP-intensive industries, such as pharmaceuticals, automotive, and luxury, use this technology to follow the flow of goods through the supply chain. This allows the traceability of products to become prominent

¹⁸ S D Levi and A B Lipton, *An Introduction to Smart Contracts and Their Potential and Inherent Limitations*, HARVARD LAW SCHOOL FORUM ON CORPORATE GOVERNANCE, <https://corpgov.law.harvard.edu/2018/05/26/an-introduction-to-smart-contracts-and-their-potential-and-inherent-limitations/> (May 26 2018).

¹⁹ Sillaber, C. Walzl, B. *Life Cycle of Smart Contracts in Blockchain Ecosystems*. (2017).

²⁰ E Solaiman, T Wike, I Sfyrakis, *Implementation and Evaluation of Smart Contracts Using a Hybrid On-and-Off Blockchain Architecture*, *Concurrency and Computation: Practice and Experience* 33(1) (2020).

²¹ Koulu, R. *Blockchains and Online Dispute Resolution: Smart Contracts as an Alternative to Enforcement*. (2016).

²² IBM Corporation, *What are Smart Contracts on Blockchain?*, IBM, <https://www.ibm.com/in-en/topics/smart-contracts> (n.d.).

²³ N Patelli and M Mandrioli, *Blockchain Technology and Traceability in the Agrifood Industry*, *J. of Food Sci.* 85(11) 3670-3678 (2020).

and prevents the circulation of counterfeit goods, which is a real problem.

The organizational and technical components of a Blockchain can be linked to databases or registers of any kind. However, such a comparison is only valid if the structures are compared. In certain ways, the block system differs dramatically from any standard database.²⁴

First and foremost, the subjects of system are equivalent and interact based on social agreement, trustworthiness, and consciousness. Furthermore, Blockchain archives can be used to identify and transfer synchronised, automatic, coded information for everything, in addition to storage. Third, the availability of technological prowess to transmit and digital interchange code between the registered owner and consumer determines the price for the item set by the parties' contracts, and demand reflected by the number of code users. Lastly, operational data based on immaterial holdings necessitate the existence of a single entity accountable for data implementation and maintenance. As a result, any activity performed by right holders on the items in the registry must be delivered to the administering subject. Such structure involves the beliefs of the rights holders in the subject administering the log or other datasets.

Accordingly, Blockchain is another innovative worldview that establishes an actual climate for logical and functional human movement involving the extraction of total worth, interpretation into the advanced structure, and movement through mechanised trade that does not involve outsiders. Many diverse businesses are attracted to blockchain because of its potential benefits. Various data may be uploaded to a blockchain, from Bitcoin to transactional and contractual data to file systems and design documents.

Non-material investments are recorded in registered journals and controlled by those who have access to the secret key. The asset is sold via smart contracts, which eliminates the human aspect and is carried out automatically, followed by the transmission of the private key to the acquiring client. The decentralised system of digital image distribution of material and non-material assets and the form of distributed registers based on third generation IT define the foundations of blockchain operation.²⁵ These include:

- All members have access to data, but nobody has commands over the data;
- The framework does not have a progressive system; among the numerous blockchain nodes, there is no dominant node;
- The exchange system is straightforward and unadulterated; every activity is accessible to everybody who approaches the framework. Anyone with access to the framework has access to all activities;
- Trust in the framework is characterised by the number of clients.

²⁴ M Iansiti and K R Lakhani, *The Truth About Blockchain*, HARV. BUS. REV., <https://hbr.org/2017/01/the-truth-about-blockchain> (Jan 2017)

²⁵ Nakamoto, *supra* note 11

The whole spectrum of blockchain applicability in the IP sector is a little tricky to predict, which is why we decided to focus on existing initiatives. The challenge of creating IP registers for use in the digital ecosystem comprises several interconnected concerns. Beyond everything, the digitisation of IP has resulted in widespread violations of the rights of owners of non-material assets.²⁶ Part of the problem can be explained by the lack of viable legal methods for the exchange of intellectual resources on the Internet that benefits both the owner and the consumer.

II. Why Smart Contracts?

Different methods for risk protection and the ability to show the originality of an idea, software, or artwork at any moment may be found in the field of patent rights. The most “secure” method is to give a notarized copy. This is a time-consuming approach, especially for businesses that generate something new every day or have lines of code that need to be protected.

The 2017-founded company Bernstein, which provides blockchain notary services, has proposed a revolutionary innovative alternative.²⁷ The document published on the platform is kept private, but may be demonstrated afterward, in just the way that it existed at the time of upload, unmodified. It is also feasible for such a document to claim to be a publication and is used for the protection to prevent third parties from registering a patent by means of counterfeiting after it has already been published.

While this technology is relatively modern, it does come with its own set of challenges to combat, for which a robust legal framework is required at its earliest. The UK Ministry of Digital Commerce established the Blockchain Intellectual Property Council (BIPC) in 2017 to combat patent trolls. The goal of BIPC is to create a universal patent protection strategy that will initially prevent patent trolling. Blockstream, Bloq, Chain, Civic, Cognizant, CoinDesk, Deloitte, Digital Asset, Digital Currency Group, Ernst & Young, Gem, IMB, Medici Ventures, Microsoft, TMX, T0.com, and Wipfli are some of the most well-known BIPC members. Notwithstanding the construction of a patent information storage system linked to the Blockchain, the BIPC continues to research other protection strategies.

The number of blockchain-related patents and trademarks is steadily increasing. At present, Europatent’s database has more than 25,000 files, in

²⁶ K Brush, *Definition: Digital Ecosystem*, TECHTARGET, <https://searchcio.techtarget.com/definition/digital-ecosystem> (n.d.).

²⁷ Patsnap, *An IP Perspective on Blockchain: Beyond the Realm of Cryptocurrencies*, PATSNAP, <https://info.patsnap.com/hubfs/Academy/Course%20Material/Technology-Landscape-Blockchain-Example.pdf> (n.d.).

which the terms “blockchain” and “bitcoin” are mentioned. In a few years, these disruptive patents might be enormously valuable. A very valued IP address can be represented in millions of lines of code. One of the most quickly expanding directions in terms of blockchain is IP and material asset protection. Currently, various programs, such as Everledge and Blockverify, have been created to track and identify such items as fashionable products and to prohibit their replication. VeChain is a chain management tool that may track every part of a contract involving an IP network.²⁸ In the interests of IPR holders and interested individuals, smart contracts will increase the stability of digital networks. On the other hand, Agrello, founded in Estonia, is now causing quite a stir. The firm handles requests for execution legally binding IP contracts created using digital technology and recorded on the blockchain network.

While talking about smart contracts and their applicability, it becomes crucial to analyse why shall a country opt for a system so very advanced and technologically mature for carrying out its simple time-to-time requirements, which brings us to the following:

1. Risk reduction: Smart contracts cannot be modified in arbitrary forms of amendment after being disclosed due to the immutability of blockchain. Furthermore, according to the company, all transactions recorded and copied throughout the distributed blockchain system may be tracked and audited. Consequently, malicious activities, such as financial scams, can be significantly reduced or even eliminated.
2. Cost-effectiveness: The decentralized consensus method of blockchain ensures the trustworthiness of the whole system without the need for a central broker or intermediary. The decentralised nature of blockchains allows smart contracts to be automatically invoked. Administrative and service costs owing to the third-party intervention might be considerably reduced as a result of this.
3. Business efficiency: The efficiency of corporate processes may be significantly improved by eliminating the need for a middleman. Once the preset condition is satisfied, the financial settlement will be performed automatically in a peer-to-peer method. Consequently, the turnaround time can be decreased by a great deal.

From the Internet of Things to financial services, smart contracts revolutionise many industries and application fields. Several problems need to be overcome before smart contracts can genuinely transform the way business works. While blockchains can provide a certain degree of anonymity to the contracting parties, they may not offer privacy throughout their whole

²⁸ E Rosenberg, *VeChain (VET) Explained*, THE BALANCE, <https://www.thebalance.com/vechain-explained-5197295> (last updated November 13, 2021).

execution, as all transactions are publicly visible.²⁹ However, the vulnerability of computer programmes to faults and failures makes it difficult to verify the accuracy of smart contracts.

As a result, technologies that use blockchains tackle various transaction-related issues, such as privacy, reliability, correctness, reduction in costs, automated registration of smart contracts, payments, cooperation, and so on. The inability to check the rights of ownership for the digital object from the client is the most significant issue with the activity of contemporary blockchain platforms.

III. The Cons

Contract generation is a crucial step to utilising smart contracts. To create their own contracts, users must write their own code and publish it to multiple blockchain platforms. Smart contracts on blockchains likewise cannot be changed after deployment since blockchains are immutable. Consequently, developers must carefully handle the difficulties listed below:

A. The Stage of Creation

1. Readability concerns: Most smart contracts are developed in languages like Java, Kotlin, Solidity, and Go, and it is then compiled and run.³⁰ As a result of this, programmes have distinct types of code in different time frames. The question of how to make programmes understandable in each form remains a significant issue for the software industry.
2. Functionality issues: Existing smart contract platforms have a variety of functional problems such as-
 - Re-entry indicates that a function that has been halted can be securely re-entered. As described, cybercriminals may exploit this vulnerability to steal electronic money.³¹

²⁹ Dai, H.; Zheng, Z.; Zhang, Y. *Blockchain for Internet of Things: A Survey*. IEEE Internet of Things Journal IEEE Internet Things J. Internet of Things Journal, IEEE. 6(5):8076-8094, 2019

Moin, S.; Karim, A.; Safdar, Z.; Safdar, K.; Ahmed, E.; Imran, M. *Securing Iots in Distributed Blockchain: Analysis, Requirements and Open Issues*, In *Future Generation Computer Systems* November 2019 100:325-343, 2019

³⁰ H West, *Prograamming Smart – A Look into DAML, Kotlin, Java*, DAML, at <https://daml.com/blog/engineering/programming-smart-contracts-a-look-into-daml-kotlin-java>, 2020

³¹ Li, X.; Jiang, P.; Chen, T.; Luo, X.; Wen, Q. *A Survey on the Security of Blockchain Systems*, In *Future Generation Computer Systems* June 2020 107:841-853, 2017

- Lotteries and betting pools, for example, may need randomisation of produced blocks. A block timestamp can be used to generate pseudo-random numbers. However, the pseudo-random generator may be used by maleficent miners for fabricating blocks. Thus, attackers can manipulate the distribution of possible outcomes.³²
- Due to the under-optimisation of smart contracts, smart contracts might overcharge their users. Dead code and costly operations in loops consisting of repetitive calculations are all characteristics of these overcharged patterns, known as dead code patterns.³³

B. Deployment

1. Smart contracts will be implemented on blockchain platforms when they have been developed. Smart contracts must be thoroughly examined to avoid any flaws. The smart contract's authors must understand the contract's interaction patterns to prevent any possible losses due to maleficent conducts.

Evaluating smart contracts before official deployment is therefore of paramount importance. Since smart contracts are complicated to model, it is difficult to verify their validity.³⁴

2. Even if smart contracts deployed are immutable, the same thing cannot be said about their control flow. A smart contract can interact with other contracts, and the control flow of a smart contract must be appropriately established during the contract's development process. Interactions between smart contracts can lead to a rise in the number of contracts that are related throughout. Most current approaches focus on detecting possible problems with dynamic control flow in programmes despite unreliable execution environment.

C. Execution

The execution step of smart contracts is essential, as it defines their ultimate state. During the execution of smart contracts, several concerns need to be resolved, which are as follows:

³² Joseph Bonneau, Jeremy Clark, and Steven Goldfeder. *On Bitcoin as a Public Randomness Source*, IACR Cryptol. ePrint Arch. 2015: 1015, 2015

³³ Chen, T.; Li, X.; Luo, X.; Zhang, X. *Under-Optimized Smart Contracts devour your Money*. 2017 IEEE 24th International Conference on Software Analysis, Evolution and Reengineering (SANER) Software Analysis, Evolution and Reengineering (SANER), 2017 IEEE 24th International Conference on. :442-446 Feb, 2017

³⁴ J Stephens, K Ferles, B Mariano, S Lahiri, and I Dillig, *SmartPulse: Automated Checking of Temporal Properties in Smart Contracts*, 2021 IEEE Symposium on Security and Privacy (SP) 1 555-571, 2021

1. Without real-time information, smart contracts cannot function. This means that a smart contract is intended to operate in an isolated environment. An agent detects and validates real-world events and passes this information to the smart contract in a smart contract. As a result, determining which oracles are trustworthy becomes a problem.
2. Invoking functions in a smart contract requires users to transmit transactions, which miners bundle into blocks. This is because the sequence of transactions on the blockchain is not predetermined. Inconsistency in order-dependent transactions can be caused by this type of uncertainty.
3. Miners execute smart contracts in serial. This means that a miner will not enter into a new contract with any other company until his current contract is finished. Execution serialisation reduces the system's performance in a significant way. Since several smart contracts exchange data, it is difficult to execute them simultaneously.³⁵ Examining the contract data without a specified interface is also crucial for increasing the smart contract execution performance. It eliminates the need to redeploy a new contract and allows for more efficient execution.

D. The Completion Stage

When smart contracts are executed, the changes to system states are packaged as a transaction, then propagated to each node in the network. Numerous concerns are raised by the emergence of smart contracts.

1. Privacy-preserving measures are lacking in most smart contracts and blockchain systems, especially when it comes to transaction privacy. They are dispersed over the whole blockchain network, and as a result, all transactions on the networks are accessible to everyone. Even though specific blockchain systems use pseudonymous public keys to increase anonymity, most transaction data is still publicly accessible.³⁶
2. Blockchains and smart contracts are subject to harmful assaults by scammers since they are a relatively new technology. Since it allows them to terminate their investments early and avoid unnecessary loss, the identification of scams is of considerable relevance for contract users in particular.³⁷

³⁵ D Sumathi, T Poongodi, H Balusamy, H Bansal, et al, *supra* note 4

³⁶ L Peng, W Feng, Z Yan, Y Li, et al, *Privacy Preservation in Permissionless Blockchain: A Survey*, *Digital Communications and Networks* 7(3) at 295-307, 2021.

³⁷ E Bird, J Fox-Skelly, N Jenner, R Larbey, E Wietkamp, and A Winfield, *The Ethics of Artificial Intelligence: Issues and Narratives*, EUROPEAN PARLIAMENTARY RESEARCH

IV. Intellectual Property Rights and Contracting

Intellectual Property Rights (IPR) is a field of law that deals with extending legal protection for creative innovations, inventions, designs, music, and artistic works. These regulations aim to encourage individuals to abide by rules that benefit society by assuring that anyone producing art, design, concept, or technology can do so without fearing repercussions. Thus, this field involves the drafting and execution of several contracts and agreements, which are discussed in detail hereunder:

- **IP Assignment Agreements:** Agreement to assign IPR and their transfers, in whole or in part, from the original author to some other individual or persons or organisation in exchange for compensation. In this arrangement, the original owner transfers their right to develop or sell the intellectual property in question to another person or legal body. It is possible to assign patents, trademarks and copyright under the Patents Act of 1970, Trademark Act of 1999 or the Indian Copyright Act of 1957. Hence, the assignment can be copyright, a patent, a trademark, a Geographical Indication (GI), design(s), or even confidential know-how.
- **Non-Disclosure Agreements:** When discussing commercial partnerships, one may need to engage in non-disclosure agreements (NDAs) to safeguard the information that falls under the intellectual property branch, but they are also vital to the running of the business, such as trade secrets, business plans, technologies, business structures, and codes. To safeguard any future exposure of sensitive information, even if the more significant transaction is unsuccessful, NDAs are typically entered into by parties anticipating a deeper commercial partnership. There are still specific non-disclosure duties under the NDA. Other contracts, such as employment or consulting agreements, also include clauses similar to those included in NDAs.
- **Technology Transfer Agreements:** Under the terms of this agreement, an IP owner permits a third party to utilise the technology produced by that owner for a fee or other compensation that has been mutually agreed upon in advance between the parties. In this approach, technical knowledge gets transferred. For the manufacture and promotion of a product, small firms might get technological licences from larger corporations. Several joint ventures in the car business in India have featured similar partnerships, where the Indian company

has access to the foreign partner's technology knowledge and combines it with local distribution skills in India's marketplace.

- **Franchising Agreements:** If someone owns a trademark, one can license or franchise it to other companies or entities.³⁸ As long as the business and its goods and/or services maintain the same quality, another entity can benefit from the goodwill gained by using such a mark.
- **Copyright Licensing Agreements:** Copyright licenses allow copyright owners to provide permission to others to economically exploit the copyright by making reprints or reproductions of the original works.³⁹ In some cases, a license may only be granted to develop just a translated version, limited to a period of only two years, and be limited in terms of territory or region. A royalty or other compensation is given to the owner in return for such rights for a limited time - the copyright is not permanently transferred.
- **Inventions Assignment Agreements:** An employee's creations created during his work are protected by this contract, which grants the employer ownership rights over those creations. All employee creations are considered the product of the employer's business unless otherwise stated in the employment contract. The sensitive information of the firm is likewise protected by these agreements and provisions. In an employer-employee relationship, intellectual property rights are automatically transferred to the employer under the Copyright Act, but not in the case of patents and trademarks. An inventions assignment agreement must be added separately for this purpose.
- **E-book Publishing Agreements:** When an e-book is published by an author or owner of the written manuscript, the rights to the e-book are usually acquired by that publisher. The e-book publisher is granted the right to publish the written text as an e-book under this agreement. These authors are compensated by offering a royalty on the sale of their e-books. However, they may also be compensated in some other way. According to the publisher, it may be integrated with a print publishing deal or a distinct arrangement.
- **Music License Agreements:** In exchange for a payment, a music licensing agreement gives the third party the right to publish or distribute the music in multiple forms.

³⁸ WIPO, *Module 12 (Trademark Licensing)*, WIPO Workbook, at https://www.wipo.int/export/sites/www/sme/en/documents/pdf/ip_panorama_12_learning_points.pdf, 2016

³⁹ WIPO, *Understanding Copyright and Related Rights*, WIPO, at https://www.wipo.int/edocs/pubdocs/en/wipo_pub_909_2016.pdf 2016.

- **Research and Development Agreements:** Companies enter into such agreements with any individual or organization to research and develop goods, ideas, or services to develop them. Research concerning manufacturing hardware goods, or academics who undertake research at universities or scientists working at universities, are the most common types of research that are entered into. There are terms in the contract that enable the firm or university to retain ownership of any intellectual property produced by them.
- **Work For Hire Agreements:** Usually, companies hire an artist to perform specific work or develop a work that it expects to have copyright over, which is why these agreements are entered into. When assigning intellectual property rights to a work, it is necessary to identify the work.

V. Essential Elements of IP Contracts

A wide variety of rights can be transferred or leased to another person or corporation under a contract to protect IPR. This means that the terms in such contracts need to have a lot of prudence.

The following are the essential elements of every IP contract:

- **Confidentiality:** A confidentiality clause is essential to shield the intellectual property rights of the IP owner. There has been a considerable increase in technical know-how, and therefore extra security measures ought to be implemented to safeguard the creation. As a result, some forms of intellectual property (trademarks, patents, copyrights) are publicized and openly available. To achieve commercial outcomes, they are typically combined with other confidential know-how – which must be kept confidential.
- **Accessing Confidential Information:** Employees, consultants, or representatives of the parties must meet specific requirements to gain realistic access to know-how and sensitive information. To ensure that private information is kept safe, it is feasible to specify security requirements.
- **Ownership and Duration of IP:** The contract must be crystal clear about who owns the intellectual property during the relationship. Even if the partnership is dissolved, the ownership of the intellectual property should be defined. Once the invention is complete, the employee quits their job and wants to take the creation with him because he made it. Arrangements regarding these circumstances must be specified in every contract, although it was formed during their employment.

- **Documentation of IP:** More advanced contracts may include mechanisms for recording and documenting intellectual property produced throughout a partnership in a way that allows it to be identified. So, intellectual property may be valued more accurately in the future. Depending on their objectives, the parties have more chances to monetize the intellectual property through a whole or partial assignment.
- **Termination of IP:** Lastly, the contracts must specify the consequences of a breach of the contract. A watertight contract regarding penalty provisions is thus a requirement, and there should be no room for doubt.

VI. Blockchain in the World of IPR

If the nature of the IP warrants it, smart contracts and blockchain technology can handle many routine transactions in the IP sector.⁴⁰ IPRs can benefit from blockchain technology by keeping IP registries and assigning rights to be governed from the blockchain since they can easily and quickly be put into by the user, reducing the time and effort required.

Especially in the case of copyright, blockchain and smart contracts may be used as a repository of information regarding IP. According to the Indian Laws, a work's copyright is formed at its creation, not when registered with a government agency. Authorities face the daunting challenge of determining when the work was created, as there is always doubt regarding their existence at a given point in time. An electronic ledger would function as a permanent record of the property and allow the parties involved to know who created the work, its nature, and when it was created. This would resolve many conflicts at an early stage. Everyone throughout the supply chain, from the creators to all the licensees, would allow them to verify the product's authenticity, protecting IP rights.

Weighing in on the fact that smart contracts are capable of dealing with standardized terms and conditions. Together with blockchain technology, they may become the appropriate instruments to manage licensing, the permission of access, and/or any other agreement with reasonably defined parameters. An essential characteristic of smart contracts is that they are self-executing in nature. As soon as the required condition is met, the contract's obligations are immediately performed. All royalties must be paid in line with the licensing agreement and based on whatever calculations must be included in the contract code for this feature to work. It is possible to utilize smart contracts to automate

⁴⁰ B Clark, *Blockchain and IP Law: A Match Made in Crypto Heaven?*, WIPO MAGAZINE, at https://www.wipo.int/wipo_magazine/en/2018/01/article_0005.html 2018

the flow of cash when a specific point has been reached in a project or when a goal has been achieved.

A large-scale legal application of blockchain might face several obstacles. Despite this, blockchain and similar distributed ledger technologies (DLTs) provide the clear potential for IP protection and registration, as well as evidence, both at the registry stage and in court, especially in businesses that rely heavily on IP protection.

It's also a cost-effective approach to speed up such operations, according to its proponents. Smart contracts may be used to establish and enforce IP agreements, licenses, digital rights, and exclusive distribution networks, as well as to control and track the dissemination of (un)registered IP, as well as to provide evidence of genuine and/or first use in trade or commerce. Blockchain technology may be utilized for authentication and provenance reasons for the identification and/or recovery of counterfeit, stolen, and parallel-imported products.

Employing blockchain technology to handle IP rights has an enormous potential. Instead of a typical database, recording IP rights in a distributed ledger may effectively transform them into "smart IP rights."⁴¹ IPR offices may build "smart IP registries"⁴² by employing distributed ledger technology. This would produce an immutable record of events throughout a registered IP right's life and be managed by IP offices as responsible authorities. Also, it would provide a viable solution for gathering, preserving, and delivering such evidence.

Numerous benefits would result from the capacity to trace the whole life cycle, including a more straightforward audit process for IP rights. In mergers and acquisitions, for example, it might help reduce the due diligence required for IP deals. An opt-in approach might also satisfy the worries of IP owners about confidentiality.

The information stored in a ledger is helpful for brand owners as it gives them a reference for their rights and the amount to which those rights are being exploited in the marketplace. The amount of usage of a mark or data about its first use is essential. This technology might be instrumental in disputes or other procedures concerning recognizing well-known marks or defending against a non-use-revocation action.

Using a blockchain-based trademark registry, for example, would allow the relevant IP office to be alerted almost instantaneously of the use of a trademark in trade or commerce. Thus, a trademark would be used in commerce with a verifiable time stamp, which would be significant for establishing first use, genuine usage, acquired distinctiveness, secondary meaning and goodwill

⁴¹ Clark, B. *Blockchain and IP Law: A Match made in Crypto Heaven?*, WIPO MAGAZINE, https://www.wipo.int/wipo_magazine/en/2018/01/article_0005.html, 2018

⁴² *Id.*

of a brand. DLTs may also be used to publish technologies as legal precedence to prevent others from using them.⁴³

“Smart contract performance”⁴⁴ might be of relevance for digital rights management and other IP operations since specific blockchain systems can retain, implement and audit contractual codes. For example, “smart information” regarding IP rights might be stored in digital form in protected material, and smart contracts could also be used to negotiate and execute IP agreements such as licencing and transmitting payments to IP owners in real-time. Kodak’s recent announcement of a blockchain-based picture rights management system and its own cryptocurrency shows that these ideas are rapidly becoming popular.⁴⁵

A. Applications

With its accountability, security, transparency, and immutability, Blockchain can substantially influence the field of IP, as has been established previously. Since blockchain technology is still in its infancy, we might possibly see many more advanced applications of blockchain technology for IP in the future, some of which are listed hereunder:

1. When a predefined condition is satisfied in a transaction, a smart contract is immediately performed. Transactions in IP, such as acquiring a patent, entail several procedures such as verifying that it was assigned, confirming its validity, negotiating, paying, and lastly, notifying the relevant patent offices about the same. Using smart contracts, all of these procedures can be streamlined.
A smart contract is a digitalised and secure transaction mechanism that establishes trust between persons without compromising security. Especially for content such as songs, photos, etc., Smart Contracts are proving to be highly beneficial in the automated commencement of legally binding contracts.
2. This technology may be utilised as a trustworthy platform for validating the legitimacy of ownership of intellectual property works. An inventor might go to the patent office and file for a patent to safeguard intellectual property. In the absence of any formal evidence, the onus of establishing creative work’s ownership falls on the artist

⁴³ Managing IP Correspondent, *Blockchain, IP and the Fashion Industry*, at <https://www.managingip.com/article/b1kbpknf78y8tz/blockchain-ip-and-the-fashion-industry>, 2017.

⁴⁴ WIPO, *supra* note 41

⁴⁵ Kuhn, D. *Kodak Launches a Blockchain-Enabled Document Management System*. at <https://www.coindesk.com/markets/2019/06/07/kodak-launches-a-blockchain-enabled-document-management-system/2019>

in the case of copyright. Exercise of copyright has grown increasingly difficult in the digital age, when anybody may download anything such as music, an image, a painting etc., and use it at their own discretion without any restriction.

There is a requirement in the system to provide evidence of ownership towards intellectual assets and their security, given the growing digitalisation and industry 4.0 technologies. By offering protection and proof of ownership towards intellectual assets, Blockchain is one such technology that might fulfill the system's requirement for both. To secure digital assets, many firms have already started offering blockchain-based timestamping and validation systems.⁴⁶

3. Nodes (computers) in the DLT record, share and synchronise transactions in their own independent electronic ledgers. Inventors can submit their digital works in ledgers with brief descriptions, therefore creating a marketplace for IP. As a result, innovators and patent holders may utilise Blockchain to discover potential licensees for relevant know-how.

How information can be exchanged has been massively transformed by DLTs. As a result, this new manner of exchanging knowledge will have a broader impact in every sector. Given the blockchain technology, we may envision a possible application in IPR related data exchange.

4. Unification of the patent system between countries would also be solved by Blockchain, thanks to the DLT and its ability to store large amounts of data. This may significantly increase the efficacy of IP management, speed up the invention process in organisations, and facilitate the sharing of information inside them.⁴⁷

Blockchain is slowly being accepted as “admissible evidence” by a growing number of governments and patent offices.⁴⁸ For example, blockchain receipts accompanied by an individual's written statement attesting to the specifics of the transaction are accepted in Vermont, according to a 2016 legislation and the Vermont Rules of Evidence (under 12 VSA §1913).⁴⁹ In India, Section 65B (Acceptability of electronic records) of the Indian Evidence Act, 1872, is crucial for the

⁴⁶ Zheng, Z.; Xie, S.; Dai, H.; Chen, X.; Wang, H. *An Overview of Blockchain Technology: Architecture, Consensus, and Future Trends*. (2017)

⁴⁷ J-M Riviere, *Blockchain Technology and IP – Investigating Benefits and Acceptance in Governments and Legislations*, Jr. Mgmt. Sci. J. 3(1) 1-15 (2018).

⁴⁸ The United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT). *White Paper Blockchain in Trade Facilitation*, available at https://unece.org/DAM/cefact/cf_plenary/2019_plenary/ECE_TRADE_C_CEFAC2019_08E.pdf, 2019

⁴⁹ <https://legislature.vermont.gov/statutes/section/12/081/01913>

enforcement and jurisdiction concerning transactions through a blockchain network in India.⁵⁰

This is because blockchain technology can become a worldwide tool for preserving digital assets because of its immutability, security, and transparency. Different laws and governments are slowly recognising and using Blockchain as a means of providing proof of ownership.⁵¹ Most countries may eventually recognise Blockchain as a technology that underlies their policies, unifying the whole intellectual property framework.

5. A system is needed to link different versions of digital assets over their lifespan. Examples include copyrights, publications, patents, etc. Blockchain's ledger technology may connect all copies of a digital asset and possibly utilise it for end-to-end lifetime management of the concerned asset.⁵²

This technique prohibits someone from patenting an idea by releasing it publicly and establishing prior art for it. Each file has a unique fingerprint, duplications are eliminated, the platform enables versioning, and each network node may select which material it is hosting. The database is also indexed and searchable, and each node can pick which content it is hosting.

A blockchain-based system has opened up many possibilities for collaboration and sharing ideas as it integrates numerous digital assets and promptly regulates them.

VII. Oracle Networks- An Imperfect but Possible Way Ahead

An imperfect, yet possible answer to this whole situation is oracle networks.⁵³

⁵⁰ A Jaipurkar, A Nagar, V Kalway, and S Ganguly, *A New Digital Order– Unveiling The Interplay Of Law & Blockchain Technology - Part B | Blockchain Technology & Legal Framework: Analysing India's Blockchain Preparedness*, MONDAQ, at <https://www.mondaq.com/india/fin-tech/975778/a-new-digital-order-unveiling-the-interplay-of-law-blockchain-technology--part-b-blockchain-technology-legal-framework-analysing-india39s-blockchain-preparedness>, 2020

⁵¹ E Ganne, *Can Blockchain Revolutionize International Trade?*, WTO, available at https://www.wto.org/english/res_e/booksp_e/blockchainrev18_e.pdf, 2018

⁵² Boston Consulting Group and World Economic Forum, *Digital Assets, Distributed Ledger Technology, and the Future of Capital Markets*, WORLD ECONOMIC FORUM: INSIGHT REPORT, https://www3.weforum.org/docs/WEF_Digital_Assets_Distributed_Ledger_Technology_2021.pdf (May 2021).

⁵³ G Tremble, *What is an Oracle Network (in 60 Seconds)*, MEDIUM, <https://medium.com/crypto-in-60-seconds/what-is-an-oracle-network-in-60-seconds->

An autonomous collection of oracles that deliver data to a blockchain constitutes a decentralised oracle.⁵⁴ As a part of the decentralised oracle network, every node autonomously obtains data from an off-chain source and delivers it onto the Blockchain. A deterministic value of validity is then determined for each data piece. It is the decentralised oracle that resolves the oracle issue.

It is possible to add randomisation, off-chain data, and additional processing resources to smart contracts by utilising oracle networks. Data is written in the Blockchain by validators in the oracle networks. A single validator cannot manage the oracle feed since it aggregates inputs from numerous validators. To further improve robustness, validators can potentially utilise alternative techniques to generate the data they publish.

Using an oracle network doesn't involve abandoning the benefits of decentralization provided by Blockchain. A hybrid smart contract incorporates such an oracle network. They can begin to replace traditional contracts as soon as they gain access to off-chain data through an oracle network. A blockchain may be used to create any contract that pays out depending on real-world occurrences, provided that an oracle network is available to supply that off-chain data.

They can also incorporate processes with higher computational complexity than their non-hybrid counterparts. Multiple on-chain gaming and gambling matches are supported by random number generators in oracle networks. These networks can also support randomized algorithms and processes that are more efficient than non-random equivalents.

However, it must be noted that Oracle Contracts are not devoid of hurdles either. This is true especially in light of the recent rise of Oracle Contracts in the world of Decentralized Finance (DeFi), as specific Oracle Networks have used unverified and unsecured data channels to provide data as early as 2019.⁵⁵ The consequences of a poorly designed oracle could be catastrophic for this sector. However, there is hardly any academic literature that focuses on this problem.⁵⁶ This issue was coined as "The Oracle Problem" by Egberts in

23a65b22539a#:~:text=Oracle%20networks%20provide%20real%20world,and%20the%20simulated%20machine%20world. (April 27 2020).

⁵⁴ A Beniiche, *A Study of Blockchain Oracles*, Arxiv, <https://arxiv.org/pdf/2004.07140.pdf> (Jul 2020).

⁵⁵ S Zheng, *Compound Launches an Open Oracle System for Decentralised Pricing Data*, THE BLOCK, <https://www.theblockcrypto.com/post/36460/compound-launches-an-open-oracle-system-for-decentralized-pricing-data> (August 19 2019).

⁵⁶ G Caldarelli and J Ellul, *The Blockchain Oracle Problem in Decentralised Finance – A Multivocal Approach*, Appl. Sci. J. 11(16) [Spl. Iss. On New Trends in Blockchain Technology] 7572 (18 August 2021).

2017,⁵⁷ with a book released on the same in 2021.⁵⁸ As rightly noted by Liu, Szalachowski, and Zhou - “*Although oracles play a critical role...the underlying mechanics of oracles are still vague and unexplored.*”⁵⁹

VIII. Why use Hybrid Smart Contracts instead of the Traditional Ones?

Since Blockchain enforces smart contracts, there is no need for a separate judicial system to implement them. It is cheaper to sign contracts in the absence of an expensive judicial system. As a result, more peer-to-peer transactions may be regulated by agreements instead of trust.

Contracts between companies with locations across borders may be complicated, and navigating several courts costs money, and courts in one country generally have limited authority over corporations in other countries. It is a flaw that hybrid smart contracts are not reliant on any of these factors.

The cost of enforcing traditional contracts through the courts is high, and the outcome is unclear. Every now and again, lawyers will find some esoteric loophole that renders the contract null and invalid. Contracting parties depend on their government’s continuing goodwill to ensure contract enforcement, even when the contract is watertight.

They are quicker, more efficient and less prone to legal loopholes. They are less costly and can go across borders just as readily as they do within them.

IX. Managing Rights Digitally

The IT sector has spurred the dematerialisation of legally registered assets and items through digitisation in the late 20th century. Datafication reached a critical threshold during the early 21st century. This has not gone unnoticed in terms of IPR or even copyright law specifically. The advent of these phenomena has resulted in the “flowability” of digital subject material, resulting in a paradigm change that has created issues for a legal framework that had previously been based on physical assets. In theory, digitised documents

⁵⁷ A Egberts, *The Oracle Problem – An Analysis of How Blockchain Oracles Undermine the Advantages of Decentralised Ledger Systems*, SSRN, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3382343 (18 June 2019).

⁵⁸ G Caldarelli, *Blockchain Oracles and the Oracle Problem* (1st Ed), ISBN 979-1220083386 (Amazon: 2021).

⁵⁹ B Liu, P Szalachowski, and J Zhou, *A First Look into DeFi Oracles*, IEEE Int. Conf. on Decentralised Applications and Infrastructures (DAPPS), <https://ieeexplore.ieee.org/abstract/document/9566195> (23-26 Aug 2021)

may be duplicated, blended, and shared more readily. Simultaneously, the dematerialisation of copyrighted content has increased its accessibility. As a result, the private sector has utilised the normative power of code to reflect its own aims and ambitions, sometimes to the disadvantage of public policy objectives, resulting in a retreat of law in favour of private ordering and self-enforcement.⁶⁰ Digital Rights Management (DRM) is exemplary of the same.

Domestic and international legislation has been enacted to limit users' ability to circumvent specific DRM mechanisms. The World Intellectual Property Organization (WIPO) treaties on copyright and associated rights, enacted in December 1996,⁶¹ require responsibilities to provide appropriate legal immunity and judicial remedies against the circumvention of effective Technological Protection Measures (TPMs) and the erasure or change of RMI.⁶² The use of technical methods to defend the interests of right holders in this regard is something to focus more upon and attend to at the moment.⁶³ These requirements are similar to the substantive regulations preserving copyright and copyright-related rights, and they ensure the effective functioning of technical means allowing copyright exercise in the digital world.⁶⁴ TPMs are specific technologies that safeguard compositions and other content, whereas DRM, as defined above, refers to more sophisticated protection systems that combine technical, administrative, and legislative safeguards.⁶⁵

There is no overarching DRM legislation. Countries that have fulfilled their international responsibilities have enacted national legislation, such as the EU Information Society Directive (InfoSoc Directive)⁶⁶ or the United States' Digital Millennium Copyright Act.⁶⁷ Legislative measures were enacted to put the WIPO Treaties into effect. The most general anti-circumvention clause in the European legal framework as per Article 6 of the InfoSoc Directive. The InfoSoc Directive also unifies several areas of European copyright law.

The legislation in the United States and Europe exceeds international standards. It has been criticised for various reasons, including a failure to clearly identify the required functional relationship between technological

⁶⁰ Caso R and Pascuzzi G (2016) Il diritto d'autore dell'era digitale. In: Giovanni P (ed) Il diritto dell'era digitale. Il Mulino, Bologna

⁶¹ WIPO Copyright Treaty (WCT), Articles 11–12 WIPO Performances and Phonograms Treaty

⁶² Bechtold S (2016) Information Society Directive. In: Dreier T, Hugenholtz PB (eds) Concise European copyright law. Kluwer Law International, The Hague.

⁶³ Senftleben M (2016) WIPO Copyright Treaty. In: Dreier T, Hugenholtz PB (eds) Concise European copyright law. Kluwer Law International, The Hague

⁶⁴ *Ibid.*

⁶⁵ *Supra* 39

⁶⁶ Caso R (2006) Digital rights management. Il commercio delle informazioni digitali tra contratto e diritto d'autore. Digital re-release, Trento.
http://eprints.biblio.unitn.it/4375/1/Roberto.Caso_DRM.pdf

⁶⁷ DMCA Pub. L. No. 105–304, 112 Stat. 2860, 1998

mechanisms protection and copyright laws.⁶⁸ The concern is thus an overabundance of protection for technological measures that extends beyond the limitations of exclusive rights.⁶⁹ Regardless, both methods impose severe penalties for individuals who break anti-circumvention laws. While the legal protection of technological measures is strong, the law on the opposite scenario, in which contractual and technical means are used to circumvent copyright restrictions, is inadequate. The existing legislative framework cannot provide practical ways to prevent private ordering dependent on agreements and technological mechanisms, regardless of their ability to overcome copyright exclusivity constraints.⁷⁰

Suppose we keep our regard for legitimately passable employments of the secured topic and overlook, for instance, the absolute safeguarding of non-ensured content that ought to be in the public space. In that case, one primary issue is whether and how officials accommodate lawfully allowable utilisations with DRM. As a general rule, the specialised boycott of such uses — for instance, the utilisation of works for logical or instructive purposes — is one of the most well-known techniques in which right holders endeavour to expand eliteness past the domain of copyright insurance.⁷¹

To begin with, it is unclear to what degree global copyright treaties enable contracting parties to safeguard technological measures, even when the act of use that such standards prohibit is authorised under a copyright limitation. It has already been claimed that the treaties might be construed as permitting contracting parties to prioritise technological solutions except where the impacted restriction is required.⁷² Nevertheless, global copyright treaties only identify a few examples of copyright-permitted applications.⁷³ At the national level, copyright regulation sometimes lacks a clear difference between whether an authorised user is required. Contract law may control deviations from copyright-permitted applications, and copyright-permitted components may be overturned by technological or contractual techniques.⁷⁴

In terms of the European legislative structure, the InfoSoc Directive provides minimal and, to some extent, ambiguous responses to the exploitation

⁶⁸ t. <https://ssrn.com/abstract=320961> or <http://dx.doi.org/10.2139/ssrn.320961>

⁶⁹ Hugenholtz PB, Guibault L, Westkamp G et al. (2007) Study on the implementation and effect in Member States' laws of Directive 2001/29/EC. Report to the European Commission, DG Internal Market. University of Amsterdam, IVIR, Amsterdam

⁷⁰ Hilty RM (2018) IP and private ordering. In: Pila J, Dreyfuss R (eds) *The Oxford handbook of intellectual property law*. Oxford University Press, Oxford.

⁷¹ Guibault L (2002) Copyright limitations and contracts. An analysis of the contract overridability of limitations on copyright. Kluwer Law International, The Hague

⁷² Senftleben M (2016) WIPO Copyright Treaty. In: Dreier T, Hugenholtz PB (eds) *Concise European copyright law*. Kluwer Law International, The Hague.

⁷³ Art. 10(1) of the Bern Convention. Art. 7 of the Marrakesh Treaty

⁷⁴ Hilty RM, Ne'risson S (2012) *Balancing copyright a survey of national approaches*. Springer, Berlin

of technical protection measures.⁷⁵ Article 6 of the InfoSoc Directive implements Articles 11 and 18 of the WIPO Copyright Treaty (WCT) and WIPO Performances and Phonograms Treaty (WPPT). As previously stated, Article 6(4) governs the ties to copyright exceptions or limits. First and foremost, Article 6(4) expressly prohibits the beneficiaries of copyright exceptions or limitations from bypassing technical safeguards and spreading the tools required for such circumventions on their own. Even if the customer circumvents the TPMs to get an exemption or restriction, they would still violate the law.⁷⁶ The European solution is stringent in comparison to other anti-circumvention rules throughout the world. The United States, for example, has only explored exempting the user where the circumvention is related to sound, fair use.⁷⁷ Article 6(4) specifies several exemptions that the Member States must guarantee their beneficiaries can benefit from even if TPMs are in place.⁷⁸ More specifically, the Directive's first principle is to entrust right holders with the obligation of balancing TPMs with exceptional protection. The ideal approach appears to be implementing "voluntary measures"⁷⁹ by right holders, in the absence of which the Member States must take adequate steps to guarantee that users can benefit from the mentioned exceptions, even if TPMs pertain. Legislators' action is consequently secondary to that of right bearers. Nonetheless, as previously stated, the requirement mentioned above does not apply to all exceptions and limits but only to those named in Article 6(4). Furthermore, the Directive does not specify the voluntary actions that right holders must take. According to some observers, 'Creating copyright exemption by design' is one type of "voluntary measure."⁸⁰ The owners of the rights might design technical solutions to accommodate various copyright exceptions and limitations. This technique, however, has been questioned for its viability, given that copyright-permitted applications need a detailed awareness of contextual and external factors that inflexible computer systems cannot provide.⁸¹

It is also worth noting that Article 6(4) has a minimal reach. In truth, the copyright limits or exceptions stated in the InfoSoc regulation are entirely

⁷⁵ Dusollier S (2001) Exceptions and technological measures in the European Copyright Directive of 2001. IIC 34(1).

Reichman JH, Dinwoodie GB, Samuelson P (2007) A reverse notice and takedown regime to enable public interest uses of technically protected copyrighted works. UC Berkeley Public Law Research Paper No. 1007817

⁷⁶ Dusollier S (2001) Exceptions and technological measures in the European Copyright Directive of 2001. IIC 34(1).

⁷⁷ Fitzpatrick S (2000) Copyright imbalance: US and Australian responses to the WIPO Digital Copyright Treaty. Eur Intell Prop Rev 22.

⁷⁸ *Supra* 48

⁷⁹ *Supra* 52

⁸⁰ *Id.*

⁸¹ *Id.*

discretionary for the Member States. If the Member States do not execute the exclusions provided for in Article 6(4), the methodology established in this Article is rendered ineffective.⁸² In each situation, the application of exceptions and limits directly depends on the means of public dissemination specified by the right holder.⁸³ According to Article 6(4), where works and other topics are made available on request and access is contingent on the arrangement of an agreement, right holders are not required to take any action to ensure that clients can profit from the exceptional cases and limits, regardless of if they are accounted for by law.⁸⁴ Overall, and this is the most crucial restraint, the Member States are not permitted to undertake any authoritative step if the right holders offer mechanically assured content over the Internet and access is contingent on the conclusion of an agreement.⁸⁵

This transition of copyright legislation from public to private ordering, supported by contractual and technical tools, is contentious.⁸⁶ Many academics questioned the European legislator's approach, claiming that it contradicts the fundamental essence of exclusions and restrictions.⁸⁷

As a result, the copyright domain verifies computer code's potential to act as a private ordering mechanism. Its implementation has changed the reality of the availability of current legal safeguards. This has also enabled the condensation of external constraints to copyright law found in other practice areas such as consumer protection⁸⁸ and competition law.⁸⁹ In reality, right holders may employ DRM as a lever to affect market patterns.⁹⁰ To create strategic barriers even in secondary markets, code, in addition to a contract and the laws safeguarding the technology that permits its usage, can represent a strategic barrier to entry.⁹¹

As a result, the employment of computer code to enforce copyright rules has resulted in various limits and concerns. Given these flaws, blockchain-

⁸² *Id.*

⁸³ Quintais JP Copyright in the age of online access. Alternative compensation systems in EU law. Kluwer Law International, The Netherlands (2017).

⁸⁴ Art. 5, para. 3, and 6 of Dir. 91/250/EEC, Art. 7 Directive 2009/24/EC

⁸⁵ *Supra* 38

⁸⁶ Elkin-Koren N (2005) What contracts cannot do: the limits of private ordering in facilitating a creative commons. *Fordham L Rev.*

⁸⁷ *Supra* 51

⁸⁸ Lucchi N (2007) Countering the unfair play of DRM technologies. *Texas intellectual property law journal*, vol 16, No. 1; NYU Law School, Public Law Research Paper No. 07-02. <https://ssrn.com/abstract=970995>.

⁸⁹ Montagnani ML (2007) *Dal peer-to-peer ai sistemi di digital rights management: primi appunti sul melting pot della distribuzione on line*. Giuffrè Editore, Milan.

⁹⁰ *Inc. v. Game Masters*, 87 F. Supp. 2d 976 *Stevens v. Kabushiki Kaisha Sony Computer Entertainment*, HCA 58 (2005) *UK v. Kabushiki Kaisha Sony Computer Entertainment v. Ball*, EWHC 1738 (2004)

⁹¹ *Id.*

based smart contracts are being suggested as a new type of code to be considered a viable replacement to current systems.

X. Gazing beyond the Crystal Ball: Here's What the Future Holds

Participants in the industry and blockchain developers will have to work together more as blockchain technology becomes widespread to create standards and interoperability standards. Various groups are discussing global standards for self-executing contracts like smart contracts. This is extremely important because smart contracts are also prone to errors, which can be highly unforgiving to businesses. Any form of vulnerability or glitches in the code can have disastrous consequences.

An excellent example of the same is when The DAO raised approximately 150 Million USD, and an individual found out a glitch in the code and siphoned off almost 70 Million USD worth of Ether. Interestingly, the hacker did not maliciously hack the code but instead used the terms of the existing smart contract itself. Thus, it can be seen that the risks exposed by the incident mentioned above raise numerous concerns about the functioning and safety of smart contracts. In a nutshell – the characteristics and foundational principles that make smart contracts an attractive choice for Corporates must be questioned.⁹²

The roots of blockchain technology and DRMs are unique. Whilst the former arose from the peer-to-peer crypto-anarchist Bitcoin ecosystem, the latter is the consequence of industry attempts to advance corporate interests. However, the same issues that occurred in DRM and copyright law are likely to resurface in the case of copyright-management systems based on smart contracts. This is a crucial factor to remember as these solutions progress. DLT is still a young and hence adaptable technology at this point.⁹³ Recent efforts are still in the proof-of-concept phase, making it impossible to forecast how copyright-related uses evolve. The ramifications are further dependent on whatever solutions are created, and the design of the DLT infrastructure adopted. However, this immaturity and accompanying malleability also present a chance to design systems that are less likely to repeat previous errors and more capable of establishing an adequate balance of the interests of diverse players.

Undoubtedly, there is a risk that blockchains, like DRM, would be utilised

⁹² B Singh and K Jain, *Self Executing Crypto Contracts: The Advent of Smart Law*, THE DAILY GUARDIAN, <https://theguardian.com/self-executing-crypto-contracts-the-advent-of-smart-law/> (June 19 2021).

⁹³ Finck M (2018) *Blockchain regulation and governance in Europe*. Cambridge University Press, Cambridge

mainly for private ordering, with little regard for public policy aims. This is an essential consideration in light of the current reconsideration of copyright regulations and associated concerns about required allowed uses. Furthermore, when blockchain standards are produced, it is critical to ensure that they advance public policy objectives. This is a significant and fundamental point because, in the digital economy, norms are progressively taking on the function of legislation. To overcome these problems and ensure ethical innovation, we need to advocate interdisciplinary research in the sector and multi-stakeholder talks to ensure that all these new technologies do not just become DRM 2.0 but rather enhance the existing situation.

It is only a matter of time until regulations are enacted to address smart rights enforceability, data security, and privacy problems when it comes to smart contracts. However, whether these rules and definitions hinder or hike their wide-scale legal implementation remains to be seen.

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Corporate Governance or Family Governance? Re-examining the Regulation of Family-Controlled Public Companies in Hong Kong*

*Alvin Hoi-Chun Hung***

ABSTRACT

This article examines how the predominantly family-controlled public companies and their associated pyramidal ownership structures are monitored under Hong Kong's corporate governance regulatory framework. The study scrutinizes the state of corporate governance regulations in Hong Kong and observes that it suffers from inherent limitations in protecting minority shareholders from potential expropriation. The findings and subsequent analysis contribute to a better understanding of the underlying nature of the governance mechanism in Hong Kong by providing relevant rationale and justification that certain Western Anglo-Saxon mechanisms of market governance and control are ineffective in fostering good corporate governance practices of family-controlled public companies. The article concludes by proposing recommendations for the regulatory regime of Hong Kong to move forward and better safeguard the interests and rights of market participants, especially the minority shareholders.

KEYWORDS: Corporate Governance, Regulation, Family Business, Pyramidal Ownership Structure, Minority Shareholder, Hong Kong

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** DPhil Candidate, University of Oxford. Correspondence to Alvin Hoi-Chun Hung, Lady Margaret Hall, Norham Gardens, Oxford OX2 6QA, United Kingdom. Email address: hoi-chun.hung@law.ox.ac.uk or alvinrshung@gmail.com.

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I. Introduction

The predominance of family-controlled public companies is a common and intriguing characteristic shared by many East Asian economies.¹ It is estimated that more than half of all publicly traded corporations in East Asia are family controlled.² Across individual countries, over 80% of publicly traded corporations in Korea and Malaysia have key management positions reserved for members of the controlling family, while the corresponding figures are about 79% in Taiwan and about 53% in Hong Kong.³ As family-controlled public companies make up most of the multinational conglomerates in East Asia, the wealthiest families in East Asia control tremendous value of listed corporate assets, and exert immense influence on the local economies.

Family-controlled enterprises offer a number of strengths compared with those of dispersed ownership. When family owners hold the majority of shares and key management positions of the company, a low degree of separation between ownership and management is maintained. Family owners are more incentivized than non-family shareholders to scrutinize management and ensure that capital is put to efficient use, resulting in improved company performance.⁴ The prevalence of family owners passing on their businesses to descendants creates more stable ownership, and orients investment decisions towards increasing company value and earnings quality in the long term.⁵

¹ "East Asian" in this context also includes ASEAN countries such as Indonesia, Malaysia and Singapore.

² Stijn Claessens, Simeon Djankov & Larry HP Lang, *The Separation of Ownership and Control in East Asian Corporations*, 58 J. Financial Econ. 81, 103 (2000).

³ *Id.* at 92. Key management positions are defined as the chief executive officer, board chairman or vice-chairman.

⁴ Tina T.He, Wilson X.B. Li & Gordon Y.N. Tang, *Dividends Behavior in State- Versus Family-Controlled Firms: Evidence from Hong Kong*, 110 J. Bus. Ethics 97, 99 (2012).

⁵ Harvey S.James, *Owner as Manager, Extended Horizons and the Family Firm*, 6 Int. J. Econ. Bus. 41, 53 (1999).

On the other hand, the nature of family-controlled public companies also presents multiple problems, which can be explained in terms of principal-agent relationship.⁶ When investors place financial resources into a family-controlled company, they enter into a principal-agent relationship with the company's owners and managers. As ownership and management powers are concentrated in the hands of the controlling family, there is divergent interest and asymmetric information between investors and family owners, giving rise to the risks of moral hazard and adverse selection problems.⁷ The family owners may use their private knowledge to maximize own return and act against the interest of non-family investors.⁸ They can take advantage of insider information and management discretion to distort the company's actual performance,⁹ and make overly conservative investment decisions to impose capital constraint on company growth, and prevent the company from seeking innovative ventures.¹⁰ Most importantly, the family can use their control rights to expropriate corporate resources at the expense of minority shareholders.¹¹ In family-controlled corporate groups, control is frequently enhanced through the use of pyramidal ownership structures, which enables controlling family to exercise dominant power over all levels of management of the affiliated companies, while at the same time leaves non-family investors susceptible to expropriation.¹²

Corporate governance plays a vital role in mitigating conflict of interests and protecting the interest of shareholder investors against the agency problems of moral hazard and adverse selection. As a system relying on internal and market mechanisms to direct companies and achieve corporate control, corporate governance provide checks and balances to ensure corporate decision-makers are held accountable to other stakeholders.¹³

⁶ Kathleen M Eisenhardt, *Agency Theory: An Assessment and Review*, 14 Acad. Manag. Rev. 57 (1989).

⁷ James J.Chrisman, Jess H.Chua & Reginald A.Litz, *Comparing the Agency Costs of Family and Non-Family Firms: Conceptual Issues and Exploratory Evidence*, 28 Entrep. Theory Pract. 335, 336-337 (2004).

⁸ Randall Morck, Andrei Shleifer & Robert W.Vishny, *Management Ownership and Market Valuation: An Empirical Analysis*, 20 J. Financial Econ. 293 (1988).

⁹ Joseph P.H Fan & T.J. Wong, *Corporate Ownership Structure and the Informativeness of Accounting Earnings in East Asia*, 33 J. Account. Econ. 401 (2002); William S. Schulze, Michael H. Lubatkin, Richard N. Dino, Ann K. Buchholtz , *Agency Relationships in Family Firms: Theory and Evidence*, 12 Organ. Stud. 99 (2001).

¹⁰ Randall Morck, David Strangeland & Bernard Yeung, *Inherited Wealth, Corporate Control, and Economic Growth The Canadian Disease?*, in Concentrated Corporate Ownership 319 (Randall Morck ed., 2000).

¹¹ Rafael La Porta, Florencio Lopez-de-Silanes & Andrei Shleifer, *Corporate Ownership around the World*, 54 J. Finance 471, 511 (1999).

¹² Claessens, Djankov & Lang, *supra* note 2.

¹³ Alvaro Cuervo, *Corporate Governance Mechanisms: A Plea for Less Code of Good Governance and More Market Control*, 10 Corp. Gov. 84, 84-5 (2002); Jill Solomon,

However, most corporate governance mechanisms are created for contemporary Western settings, and implementation largely depends on the corporate environment specific to the country. East Asian economies, characterized by their long-standing predominance of family-controlled public companies, create significant challenges in regulating corporate governance. For example, it is noted by the International Monetary Fund and World Bank that the predominance of family-controlled companies and their affiliated firms was a primary cause of the Asian financial crisis in 1997, and one of the biggest obstacles to the improvement of corporate governance in East Asian countries like Korea.¹⁴

This article explores the implications of the predominance of family-controlled public companies to the regulation of corporate governance. By studying corporate governance system in the case of Hong Kong, an East Asian financial hub well known for its influential family-controlled conglomerates,¹⁵ this article offers an analytical perspective to understand the limitations of Hong Kong's corporate governance regulatory mechanism, and concludes with some possible reforms that can be implemented to address the potential grievance of minority shareholders.

The article is structured in the following manner. Section II illustrates a general picture of Hong Kong's corporate governance regulatory regime. Section III describes the corporate environment of Hong Kong, highlighting its characteristics and outlining the primary issues that needs to be addressed by corporate governance regulations. Section IV presents an analysis of the challenges and limitations faced by Hong Kong's corporate governance regulatory mechanism. Section V concludes by delivering some recommendations in response to the problems.

II. Corporate Governance Regulatory System in Hong Kong

It is very often suggested that the framework of *corporate governance* depends on the legal tradition of a given economy.¹⁶ Common law countries such as the United Kingdom tend to provide better creditor protection, while civil law countries such as Germany may provide better

Corporate Governance and Accountability 46 (2nd ed. 2007); Masdiah Abdul Hamid, Irene Wei Kiong Ting & Qian Long Kweh, *The Relationship between Corporate Governance and Expropriation of Minority Shareholders' Interests*, 35 *Procedia Econ. Financ.* 99, 101 (2016).

¹⁴ Yo Han An & Tony Naughton, *The Impact of Family Ownership on Firm Value and Earnings Quality: Evidence from Korea*, 9 *International Business Management* 625, 670 (2015).

¹⁵ Examples include the Li Ka-shing, Cheng Yu-tung and Lee Shau-kee families.

¹⁶ Prabirjit Sarkar, *Common Law vs. Civil Law: Which System Provides More Protection to Shareholders and Creditors and Promotes Financial Development* (August 21, 2011), available at <https://ssrn.com/abstract=1913624>.

protection for minority shareholders.¹⁷ Even within the common law world, the differences between countries are also profound because of the diverse socio-political situation.¹⁸ As a former British colony, Hong Kong's legal system is modelled after the common law system of the United Kingdom, and therefore has presumably inherited some possible weaknesses in minority shareholder protection.

The corporate governance regulatory framework in Hong Kong consists of a few pillars. There is the common law, and there are legal statutes like the Companies Ordinance (Cap. 622) and the Securities and Futures Ordinance (Cap. 571). There are also the non-legally-binding rules such as the SEHK Listing Rules (Listing Rules) consisting of Main Board Listing Rules (Main Board Rules) and GEM Listing Rules (GEM Rules),¹⁹ and the Corporate Governance Code which forms part of the Listing Rules and is the chief instrument for regulating good corporate governance practices.

A. Common Law

The common law sets out some basic principles of good corporate governance. For example, some important duties of company directors include the duty to exercise reasonable care, skill, and diligence,²⁰ duty to act *bona fide* in the best interests of the company as whole and not for any collateral purpose,²¹ duty to exercise power for proper purpose²² and duty to avoid conflict of interest and secret profit.²³ Although directors' duties to a certain degree have been codified in the Corporate Governance Code, they are still governed by common law case precedents.

B. Companies Ordinance (Cap. 622)

The Companies Ordinance (Cap. 622) is the primary legislation regulating companies in Hong Kong, and it applies to all companies formed

¹⁷ *Id.* at 97.

¹⁸ Christopher M. Bruner, *Corporate Governance in the Common-Law World: The Political Foundations of Shareholder Power* 35 (2013).

¹⁹ The Main Board is for larger and more established companies which can satisfy the higher profit requirement. GEM has lower entry criteria and is designed for raising small but emerging companies.

²⁰ *Re City Equitable Fire Insurance Co* [1925] Ch 407; *Norman v Theodore Goddard* [1991] BCLC 1028; *Law Wai Duen v Baldwin. Construction Co Ltd* [2001] 4 HKC 403.

²¹ *Re Smith & Fawcett Ltd* [1942] Ch 304.

²² *Hogg v. Cramphorn Ltd* [1967] Ch 254.

²³ *Sanders v Parry* [1967] 1 WLR 753; *Kishimoto Sangyo Co. Ltd et al v. Akihiro Oba et al* [1996] 2 HKC 260.

and registered under that ordinance.²⁴ The current version of the ordinance was enacted in 2014 to enhance corporate governance and modernize the legal framework for regulating companies in Hong Kong. Public companies are defined as companies with articles that allow shares to be subscribed and freely transferred and do not limit the number of members.²⁵

Sections regulating corporate governance practices are mainly set out in Part 10 (Directors and Company Secretaries), Part 12 (Companies Administration and Procedure) and Part 14 (Remedies for Protection of Companies' or Members' Interests). Some important requirements include: disclosure of company profitability and state of company's affairs,²⁶ disclosure of directors' emoluments and compensations before the general meeting (GM),²⁷ appointment of director and auditor by the GM,²⁸ declaration of material interests in the transaction, arrangement or contract by directors,²⁹ removal of director by ordinary resolution passed by shareholders,³⁰ and the ratification of conduct of directors require disinterested shareholders' approval.³¹

Section 86 of the Companies Ordinance provides that a company's articles once registered have effect as a contract under seal.³² The articles represent a contract between the company and its members, who are contractually bound to observe all the provisions.³³ The common law provides as well the nature of articles as statutory contracts with legally binding effect.³⁴ Therefore, despite that the common law, legally-binding statutes and non-legally-binding rules may intervene and regulate the incidents of relationships within companies, the internal workings of companies, especially the unlisted public companies, can be seen as depending essentially on the articles.³⁵ In addition, since most listed companies on the Stock Exchange of Hong Kong (SEHK) are incorporated

²⁴ The Companies Ordinance primarily governs companies incorporated in Hong Kong, but it is also applicable to non-Hong Kong companies registered in Hong Kong, although not in the context of corporate governance. *See* Companies Ordinance, Part 16 (March 3, 2014).

²⁵ *Id.* Sections 11-12.

²⁶ *Id.* Sections 388-391.

²⁷ *Id.* Section 577.

²⁸ *Id.* Sections 396, 460.

²⁹ *Id.* Section 536.

³⁰ *Id.* Section 462.

³¹ *Id.* Section 473.

³² *Id.* Section 86.

³³ G. D. Goldberg, *The Controversy on the Section 20 Contract Revisited*, 48 MOD. LAW REV. 158-166 (1985).

³⁴ *See* Mutual Life Insurance Co of New York v The Rank Organisation Ltd [1985] BCLC 11.

³⁵ R. R. Drury, *The Relative Nature of a Shareholder's Right to Enforce the Company Contract*, 45 CAMB. LAW J. 219-246 (1986).

overseas, the regulatory significance of the Companies Ordinance is generally limited to local small and medium enterprises.³⁶

C. Securities and Futures Ordinance (Cap. 571)

The Securities and Futures Ordinance (Cap. 571) applies to all companies listed on the SEHK. According to the ordinance, issuers are subject to disclosure obligations, including disclosure of insider information about the corporation, shareholder or officer that would materially affect the price of the listed securities,³⁷ and disclosure of interests of senior management, directors and substantial shareholders in the issuer's shares.³⁸ The ordinance also criminalizes market misconduct, with civil remedies available for potential claimants.

D. Listing Rules

The Main Board Rules and GEM rules, issued by the Hong Kong Exchanges and Clearing Limited (HKEx),³⁹ apply to all companies listed on the SEHK notwithstanding country of incorporation. The Listing Rules impose additional disclosure and reporting requirements, but unlike the legally binding statutes, the Listing Rules adopt a non-binding "comply-and-explain" approach.

Some important requirements as stated in the Main Board Rules include⁴⁰: the disclosure of "notifiable transactions," of which major transactions, very substantial disposals, acquisitions and reverse takeovers need to obtain shareholder approval by ordinary resolution,⁴¹ and the disclosure of "connected transactions," of which any transactions between an issuer and a connected person (*e.g.* senior executives, directors or substantial shareholders and their associates) must be disclosed and subject to the approval of disinterested independent shareholders.⁴² As a form of minority shareholder protection, the Listing Rules require any shareholder to abstain from voting if he has a material interest in such transactions.⁴³

³⁶ Benita Yu & Laurence Rudge, *The Hong Kong Corporate Governance Framework* in Hong Kong Corporate Governance: A Practical Guide 42 (Benita Yu & Laurence Rudge ed., 2014).

³⁷ Securities and Futures Ordinance Section 245 (April 1, 2003)

³⁸ *Id.* Section 310.

³⁹ The Hong Kong Exchanges and Clearing Limited is the holding company and operator of SEHK.

⁴⁰ The Main Board Rules are discussed for the purpose of this article, since the vast majority of listed companies in Hong Kong are listed on the Main Board.

⁴¹ Main Board Listing Rules, Chapter 14 (September, 30 2019).

⁴² *Id.* Chapter 14A.

⁴³ *Id.* Chapter 14 and 14A. There is slight difference between the rules for "notifiable transactions" and "connected transactions" in this respect. For the former, both shareholders

E. Corporate Governance Code

The Corporate Governance Code sets out the main principles of good corporate governance for issuer companies. Directors of issuer companies need to produce a report explaining the company's compliance with the Code. Some important principles in the Code for the Main Board include⁴⁴:

1. Director

The board should assume responsibility for leadership and control, and for promoting success of the company.⁴⁵ There should be a clear division of responsibility between the chairman and chief executive, and the board should have a balanced composition of executive and non-executive directors⁴⁶ who possess diverse skills and experience for independent decision-making.⁴⁷ A nomination committee chaired by the chairman of the board or an independent non-executive director (INED) constituting a majority of INEDs should be established.⁴⁸

2. Remuneration

Directors' remuneration policy should be disclosed, with formal and transparent procedure for setting remuneration packages, and no director should be allowed to decide his or her own remuneration.⁴⁹ Remuneration committee should be established to make recommendations and review remuneration policies.⁵⁰

3. Accountability and audit

The company should present a balanced, clear and comprehensible assessment of company performance, position and prospects.⁵¹ Internal control mechanism should be established to safeguard shareholders'

and his close associates must abstain from voting, and for the latter only the shareholders are required to abstain.

⁴⁴ There are two sets of corporate governance codes for the Main Board and GEM respectively, but they are usually referred together as the "Corporate Governance Code." Since the vast majority of listed companies in Hong Kong, including the larger and more established family-controlled public companies, are listed on the Main Board, "Corporate Governance Code" or "the Code" in this article refer exclusively to the corporate governance code for the Main Board.

⁴⁵ Main Board Listing Rules Appendix 14 (Corporate Governance Code and Corporate Governance Report) A.1.

⁴⁶ *Id.* A.4.1.

⁴⁷ *Id.* A.3.

⁴⁸ *Id.* A.5.1.

⁴⁹ *Id.* B.1.

⁵⁰ *Id.* B.1.2.

⁵¹ *Id.* C.1.

investment and company's assets.⁵² Audit committee should be established to review the company's financial position and oversee internal auditing and financial reporting systems.⁵³

4. Delegation

A schedule of matters reserved for board approval should be prepared,⁵⁴ and board committees should be formed to review corporate governance practices and training policies for directors and senior executives.⁵⁵

5. Communication with shareholders

The board should maintain on-going dialogue with shareholders and use annual general meetings (AGMs) or other GMs to communicate with them and encourage their participation.⁵⁶ Chairman should attend AGMs.⁵⁷

As part of the Listing Rules, the Code also adopts a “comply-or-explain” approach. It is divided into three levels, namely Principles, Code Provisions and Recommended Best Practices. Companies are expected to comply, but since the Code is not legally binding in nature, companies are allowed to deviate from strict compliance, provided that reasonable explanations are given to justify adopting other means to comply with the Principles.⁵⁸ Hence, the Code does not demand a “one size fits all” approach, and companies may even devise their corporate governance code.⁵⁹ Companies are given flexibility in structuring their corporate governance systems depending on the company size, management culture and nature of operation.

SEHK is responsible for monitoring listed companies' compliance with the Listing Rules as well as the Corporate Governance Code. If non-compliance is uncovered, the SEHK in theory can undertake a series of disciplinary procedures including issuance of public statements of criticisms, forced removal of directors from office, sanctions on directors and the issuers, and even delisting from the stock market. Nevertheless, in most cases, SEHK adopts a rather lenient approach that merely requires accused companies to explain before any potential sanction takes place. The aim of the “comply-or-explain” approach ultimately is to leave enforcement to people who are

⁵² *Id.* C.2.

⁵³ *Id.* C.3.3.

⁵⁴ *Id.* D.1.

⁵⁵ *Id.* D.3.

⁵⁶ *Id.* E.1.

⁵⁷ *Id.* E.1.2.

⁵⁸ *Id.* Preamble.

⁵⁹ *Id.*

genuinely interested in conformity with the Code.⁶⁰ Shareholders are encouraged to evaluate disclosed information and engage in constructive dialogue with the company for improving corporate governance.⁶¹ When necessary, shareholders can act in concert to acquire/sell shares or exercise voting rights as the means to expand their influence and exert pressure on the board to adopt changes.⁶² It is also assumed that investors can purchase shares of issuers with satisfactory compliance and sell shares of those with bad compliance record, as a result share prices of the former would rise while the latter would plummet, forcing directors to change policies in view of the threat of hostile takeover and replacement of board.⁶³ The Code therefore envisages shareholder empowerment, instead of institutional control, as the means to monitor issuer companies.

III. Governance of Family-Controlled Public Companies in Hong Kong

Hong Kong has been rated the world's freest economy for many consecutive years. Known as an international financial center with free flow of goods and capital, Hong Kong enjoys the reputation as a competitive market economy built upon longstanding non-interventionist policies.⁶⁴ Economic freedom is the cornerstone of Hong Kong's prosperity, and any government intervention to steer the economy and allocate resources is generally perceived as damaging to the market.⁶⁵ Therefore, the government of Hong Kong exercises great restraint in its approach of regulating businesses, effectively providing companies in Hong Kong with a high degree of freedom in managing and controlling their affairs.

⁶⁰ Andrew Keay, *Comply or Explain in Corporate Governance Codes: in Need of Greater Regulatory Oversight?* 34 Leg. Stud 279, 280-2.

⁶¹ *Id.* at 284.

⁶² Eric Cafritz, James Gillespie & Frederique Jais, *Will Eurotunnel inspire French proxy battles?*, 23 INT. FINANC. LAW REV. 33-34 (2004).

⁶³ See Antoine Faure-Grimaud, Sridhar Arcot, & Valentina Bruno, *Corporate Governance in the UK: Is the Comply or Explain Approach Working?* 30 Int. Rev. Law Econ.193 (2010).

⁶⁴ Alex Lau Kun-Luen, John Nowland, & Angus Young, *In Search of Good Governance for Asian Family Listed Companies: A Case Study on Hong Kong*, 28 The Company Lawyer 306, 306-7 (2007).

⁶⁵ Phillip Hadden-Cave, *Introduction: the Making of Some Aspects of Public Policy in Hong Kong in The Business Environment in Hong Kong* (David G Lethbridge & Ng Sek Hong ed., 4d ed. 2000).

A. Family-controlled public companies

Amidst Hong Kong's astonishing economic freedom, one distinguishing characteristic of the city's corporate environment is the dominance of family-controlled enterprises. A study suggested that Hong Kong has the highest percentage of family-controlled public companies among 27 developed economies.⁶⁶ In another study of over 400 publicly listed companies in Hong Kong, it was discovered that about 61% have a family controlling at least 30% of voting rights.⁶⁷ Notwithstanding being a highly developed and open market economy, the vast majority of enterprises in Hong Kong do not share the same characteristic of dispersed ownership as commonly observed in the Western countries. Ownership remains tightly held by the wealthy families, who embrace a mentality of treating companies as their own family businesses.

The practice of retaining family ownership and control over companies in Hong Kong is profoundly influenced by traditional cultural values, especially Confucianism.⁶⁸ Such cultural influence is also observed in other East Asian economies such as Korea and Taiwan, where there is a similar prevalence of concentrated ownership at the hands of family groups.⁶⁹ According to Confucianism, the philosophical and ethical thought that holds significant influence across East Asia, an ideal society of peace and stability is achieved when leadership is centered upon a hierarchical relationship of families.⁷⁰ The embeddedness of a tightly knitted family network is extolled, and there is great emphasis on the family being the core of social life,⁷¹ with the expression of love, care and loyalty to family members taking priority over the interest of outsiders. Shaped by these cultural values, family-controlled public companies are committed to a managerial ideology of explicit vertically hierarchical obligatory reciprocity and benevolent autocracy.⁷²

⁶⁶ La Porta, Lopez-de-Silanes & Shleifer, *supra* note 11. The study used 20% ownership as the criterion for family control.

⁶⁷ Chen Zhilan, Yan-Leung Cheung, Aris Stouraitis, & Anita WS Wong, *Ownership Concentration, Firm Performance, and Dividend Policy in Hong Kong*, 13 *Pacific-Basin Finance Journal* 431, 436 (2005).

⁶⁸ See Michael H Bond & Ambrose YC King, *Coping with the threat of Westernization in Hong Kong*, 9 *Int. J. Intercult. Relat.* 351 (1985).

⁶⁹ See John Nowland, *Are East Asian Companies Benefiting from Western Board Practices?* 79 *J. Bus. Ethics* 133 (2008).

⁷⁰ See Alex Lau Kun-Luen & Angus Young, *Corporate Governance in Hong Kong: The State of Affairs*, 1 *Compliance & Regulatory Journal* 39 (2006).

⁷¹ Suwina Cheng & Michael Firths, *Family Ownership, Corporate Governance and Top Executive Compensation*, 27 *Manage Decis. Econ.* 550 (2006).

⁷² Eric WK Tsang, *Internationalizing the Family Firm: A Case Study of a Chinese Family Business*, 39 *J. Small Bus. Manag.* 88, 88 (2001).

The organizational structures and management styles of Hong Kong's family-controlled public companies reflect the managerial philosophy of family businesses. Even in large listed corporations, organizational structures are kept relatively simple, and power is highly centralized. Typically, key strategic decisions remain a family affair conducted behind closed doors and beyond the reach of non-family members.⁷³ There is no separation of roles between the chairman of the board of directors and chief executive of the management, with the head of family taking up both positions and exercising final authority over all company affairs. To enable the family to exert tight control over the company, family members are appointed to the board of directors and at the same time, occupy and dominate most top-level management positions, with limited power shared to outsiders, and few mechanisms of accountability such as board committees to constrain managerial authority.⁷⁴ Family owners tend to be reluctant to disclose sensitive company information,⁷⁵ and communication is made discreetly and exclusively between insider family members to protect the family's interests.

In managing businesses, family owners in Hong Kong are very concerned with long-term success, and much effort is devoted to the company's reputation and other non-financial returns.⁷⁶ This is largely due to the concern for maintaining *guanxi*, a Chinese cultural phenomenon of extensive social networks and social capital.⁷⁷ Internally, *guanxi* places great emphasis on interpersonal relationships and forging bonds amongst managers and employees.⁷⁸ Externally, businesses are conducted based on long-term mutual trust and understanding as they provide the means to enforce compliance or sanction violators of contracts,⁷⁹ and boards are used for political, social, business networking purposes or reputational bonding.⁸⁰ Connections, relationships, personal bond, reciprocity and sense of shame are the socio-cultural forces shaping business dynamics in Chinese societies like

⁷³ *Id.*

⁷⁴ See CF Wu, *The Study of the Relations among Ethical Considerations, Family Management and Organizational Performance in Corporate Governance*, 68 J. Bus. Ethics 165 (2006).

⁷⁵ Cheng & Firths, *supra* note 71.

⁷⁶ See W. Gibb Dyer Jr & David A Whetten, *Family Firms and Social Responsibility: Preliminary Evidence from the S&P 500*, 30 Entrepreneurship Theory and Practice 785 (2006).

⁷⁷ See Garry D Bruton, David Ahlstrom & Johnny Wan, *Turn around in East Asian Firms: Evidence from Ethnic Overseas Chinese Communities*, 7 Strat. Mgmt. 519 (2003); Junsheng Dou & Shengxiao Li, *The Succession Process in Chinese Family Firms: A Guanxi Perspective*, 30 Asia Pac. J. Manag. 893 (2013).

⁷⁸ Nowland, *supra* note 69.

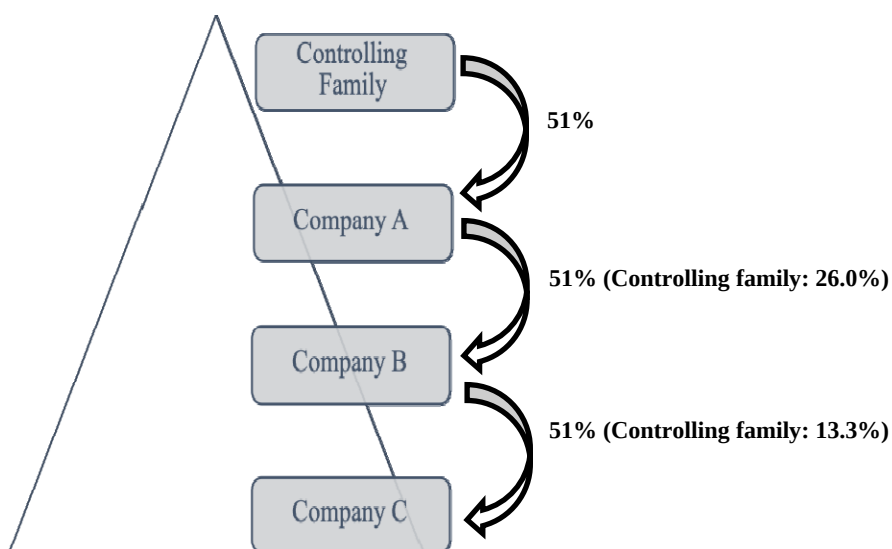
⁷⁹ Mike W Peng & Yadong Luo, *Managerial Ties and Firm Performance in a Transition Economy: The Nature of a Micro-Macro Link*, 43 Acad. Manag. J. 486, 487-8 (2000).

⁸⁰ Faure-Grimaud, Arcot & Bruno, *supra* note 63.

Hong Kong,⁸¹ and *guanxi* is a crucial socio-economic determinant of a firm's performance, especially its market access and growth.⁸²

B. Pyramidal ownership structure

The extreme popularity of pyramidal ownership structure is another distinguishing aspect of Hong Kong's corporate environment, being a phenomenon closely related to the predominance of concentrated family ownership. It is estimated that in Hong Kong, about 95% of publicly listed companies adopt a pyramidal ownership structure.⁸³ The pyramidal ownership structure is common among East Asian countries, of which an estimated 40% of all listed companies are controlled through this arrangement.⁸⁴



(SOURCE: Economic Analysis Co-Relating the Performance of Listed Companies with their Shareholders' Profile Consultancy Report)⁸⁷

⁸¹ Xue Peng, *A Study on Corporate Governance of Chinese Privately Owned Enterprises Listed in Hong Kong - From the Perspective of the Government-Business Relations*, 15 Asian Bus. Law. 151, 166-8 (2015).

⁸² Yadong Luo, *Guanxi and Business* 141 (2d ed. 2007).

⁸³ Larry HP Lang, CK Low & Raymond W So, *Economic Analysis Co-Relating the Performance of Listed Companies with their Shareholders' Profile Consultancy Report (Draft IV)* (2003).

⁸⁴ Claessens, Djankov & Lang, *supra* note 2.

⁸⁷ Lang, Low & So, *supra* note 83.

In a pyramidal ownership structure, shares are held in a hierarchical manner down a chain of ownership relations. For example, a controlling family A at the top of the hierarchy would hold the majority of shares of company X, with company X holding the majority of shares of company Y, and company Y holding the majority of shares of company Z at the bottom of the hierarchy. In such a successive ownership chain, a network of ownership and control is extended from the ultimate controlling shareholder down the entire structure.⁸⁸ From the example, it is, therefore, possible for family A to substantially magnify the degree of control over company Z despite maintaining relatively low share ownership. Powerful families in Korea exercise control while owning only about 9% of shares among the top ten business groups, and the Li Ka-Shing family in Hong Kong substantially control a company at the bottom of the ownership hierarchy with only 2.5% of cash flow rights.⁸⁹ Through the use of pyramidal ownership structures, wealthy families desiring highly concentrated power are given the means to significantly enhance control over group companies for achieving their business and personal objectives.

The popularity of pyramidal ownership structures can be explained and well justified. It is argued that under unified leadership and control, corporate groups are more efficiently managed and achieve better economic performance.⁹⁰ When the cost of external financing is high, especially in economies with limited investor protection, a coordinated internal capital market established between group companies can mitigate the difficulties in obtaining external finance.⁹¹ Internal funds and retained earnings of group companies serve as important sources of finance for the ultimate controlling shareholder to set up new ventures, and group companies in financial distress can benefit from intra-corporate insurance provided by the mechanism.⁹²

However, by enabling the ultimate controlling shareholder to exercise disproportionate voting rights, the pyramidal ownership structure magnifies the separation between control rights and cash flow rights, resulting in a higher risk of investor expropriation. Through activities known as “tunnelling,” the controlling family may abuse their power to benefit themselves or their directly controlled companies, at the expense of minority

⁸⁸ See Rita Cheung, *Corporate Governance in Hong Kong: on Certain Issues of Minority Shareholders' Rights and Protection in Listed Companies*, 19 Int. Co. Comm. Law Rev. 181 (2008).

⁸⁹ An & Naughton, *supra* note 14, at 625-7; Yohanes E Riyanto & Linda A Tolsema, *Tunneling and Propping: A Justification for Pyramidal Ownership*, 32 J. Bank Finance 2178, 2178-80.

⁹⁰ *Id.*

⁹¹ Lijun Xia, *Founder Control, Ownership Structure and Firm Value: Evidence from Entrepreneurial Listed Firms in China*, 1 China Journal of Accounting Research 31, 35 (2008).

⁹² Riyanto & Tolsema, *supra* note 86.

shareholders in companies belonging to the same corporate group. In the form of related party transactions, tunnelling enables the controlling family to absorb valuable assets from companies sitting at the pyramid,⁹³ expropriating them like “stalking horses for cash” and forcing them to forego profitable investment opportunities for lack of equity financing.⁹⁴ Analyzing connected transactions conducted by publicly listed companies in Hong Kong, studies have reported direct evidence of minority shareholders suffering significant value losses from expropriation.⁹⁵ It has also been revealed that economic performance of a company is negatively correlated to its location in the pyramid structure, suggesting the negative impact of expropriation on company performance.⁹⁶

The problem of expropriation indicates that in respect of enterprises controlled by families in pyramidal structures, the pressing corporate governance issue is not the conflict between shareholders and management. Rather, the primary concern in Hong Kong, and also in other East Asian economies dominated by family-controlled enterprises, is the agency conflict between controlling family owners and minority shareholders. With minimum public float set at only 25%,⁹⁷ non-family investors in Hong Kong are bound to be minority shareholders prone to various forms of expropriation.

In the Western Anglo-Saxon business world, corporate governance primarily relies on the activism of shareholder investors in controlling managerial power.⁹⁸ Nevertheless, in Hong Kong’s corporate environment where shares of most listed companies are not widely held, and an overwhelming number of controlling shareholders are family members,⁹⁹ Anglo-Saxon market control mechanisms are generally ineffective. When the majority of shares are held by the controlling family, it is very difficult for minority shareholders to utilize the threat of hostile takeover to pressure the

⁹³ *Id.*

⁹⁴ Say H Goo, Rolf H Weber, *The Expropriation Game: Minority Shareholders’ Protection*, 33 Hong Kong Law Journal 71, 71-3 (2003).

⁹⁵ See Yan-Leung Cheung, P Raghavendra Rau and Aris Stouraitis, *Tunneling, Propping and Expropriation: Evidence from Connected Party Transactions in Hong Kong*, 82 J. Financial Econ. 343 (2006).

⁹⁶ See Vera Diyanty, *Does the Pyramidal Ownership Mechanism Negatively Affect the Firm’s Performance?* 19 Journal of Economics, Business, and Accountancy Ventura 205 (2016).

⁹⁷ “Minimum public float” is the minimum percentage of shares required for a listed company to be held by the general public at all times.

⁹⁸ Azmi Abd Hamid, Mohd Nizal Haniff, Muhammad Rahimi Othman, Ahmad Saiful Azlin Puteh Salin, *The Comparison of the Characteristics of the Anglo-Saxon Governance Model and the Islamic Governance of IFIs*, 10 Management and Accounting Review 1 (2011).

⁹⁹ Lau, Nowland, & Young, *supra* note 64; Michael N Young, David Ahlstrom, Garry D Bruton & Eunice S Chan, *The Resource Dependence, Service and Control Functions of Boards of Directors in Hong Kong and Taiwanese Firms*, 18 Asia Pac. J. Manag. 223, 234 (2001).

management.¹⁰⁰ Effects of exercising voting rights to influence management is limited, given the weak position of minority shareholders and the near cult status enjoyed by powerful business families in Hong Kong.¹⁰¹

Investors in the Hong Kong market are more concerned with short-term returns rather than stable long-term value, therefore they prefer targeting high-profile family businesses for their track record in generating high returns.¹⁰² But their minority shareholder status and passive investor attitude inevitably leaves them in a vulnerable position, as they face constant threats of expropriation under Hong Kong's highly competitive and family-concentrated corporate environment.

IV. Challenges to Hong Kong's Corporate Governance System

As we have noted the characteristics of Hong Kong's corporate environment and the associated risk of shareholder expropriation, Hong Kong's corporate governance regulatory system in its current form is to a large extent ineffective in addressing these problems. To foster good corporate governance practices, there has been efforts to extend regulation of Companies Ordinance and the Corporate Governance Code to more aspects of the corporate environment. Nonetheless, they continue to have limited impact in solving the deep-rooted problems of the city's corporate environment.

A. Deviation from Code Provisions

The SEHK publishes report on a regular basis to analyze compliance with the Corporate Governance Code, in reliance on information disclosed by listed companies. According to the reports published from 2012 to 2018, it is revealed that on average only about 35% of the issuers complied with all Code Provisions.¹⁰³ Several key provisions recorded consistently low rate of compliance, and the problems with family-controlled public companies can be illustrated from the recorded deviations.

¹⁰⁰ See Yan-Leung Cheung, J. Thomas Connelly, Ping Jiang and Piman Limpaphayom, *Does Corporate Governance Predict Future Performance? Evidence from Hong Kong*, 40 *Financ. Manage.* 159 (2011); Paul McGuinness, *A Guide to the Equity Markets of Hong Kong* 238 (2000).

¹⁰¹ Lau, Nowland, & Young, *supra* note 64. Examples are the Li Ka Shing family and the Cheng Yu-tung family.

¹⁰² *Id.*

¹⁰³ Hong Kong Exchanges and Clearing Limited, *Analysis of Corporate Governance Practice Disclosure in 2012 Annual Report 2* (2013).

Code Provision A.2.1 requires the separation of the roles of chairman and chief executive with clear division of responsibilities.¹⁰⁴ In explaining the deviation from this provision, companies frequently cite their desire for strong, consistent leadership¹⁰⁵ and more effective planning and execution of long-term strategies,¹⁰⁶ contending that the leader possesses profound experience and knowledge in business operations.¹⁰⁷ The explanations suggest the dominant status of family member leaders in enterprises, and any rules diluting their power are unable to attract widespread compliance in Hong Kong's corporate environment.

Likewise, since it is common practice for boards to be entrenched by family members, Code Provisions A.4.1 requiring non-executive directors to be appointed for a specific term subject to re-election, and A.4.2 requiring directors to be subject to election by shareholders and retirement by rotation at least once every three years,¹⁰⁸ are not welcomed by many companies.¹⁰⁹ Instead deviations are lauded as the key element to successful implementation of long-term business strategies.¹¹⁰

The recorded deviations also exemplify the lack of effective monitoring of directors and management in Hong Kong's listed companies. Code Provision A.5.1 requires corporate issuer to establish a nomination committee comprising a majority of INEDs.¹¹¹ In reality, many companies do not have nomination committees. Instead the duties of directors' nomination are discharged collectively by board members. Audit, remuneration and nomination committees have crucial roles in a company's internal control mechanism, and Code Provision E.1.2 obliges the attendance of board and committee chairmen at AGM, the major corporate event for shareholders to communicate with the board.¹¹² But in many companies, the chairmen fail to even attend AGMs, citing "other business engagement" as the justification.¹¹³ The limited monitoring and control function of companies can be further illustrated by a lack of transparency in their operations: the percentages of

¹⁰⁴ *Supra* note 45, A.2.1.

¹⁰⁵ Hong Kong Exchanges and Clearing Limited, *supra* note 101, at 11.

¹⁰⁶ *Id.*

¹⁰⁷ Hong Kong Exchanges and Clearing Limited, Analysis of Corporate Governance Practice Disclosure in June and December Year-End 2017 and March Year-End 2018 Annual Reports 15 (2018).

¹⁰⁸ *Supra* note 45, A.4.1 & A.4.2.

¹⁰⁹ Hong Kong Exchanges and Clearing Limited, *supra* note 101, at 12-3.

¹¹⁰ *Id.*

¹¹¹ *Supra* note 45, A.5.1.

¹¹² *Supra* note 45, E.1.2.

¹¹³ Hong Kong Exchanges and Clearing Limited, Analysis of Corporate Governance Practice Disclosure in 2016 Annual Reports 13 (2017).

disclosure of internal audit function, publication of quarterly financial results, and establishment of whistleblowing policy remain consistently low.¹¹⁴

B. Resistance towards stricter governance approaches

Aside from Code Provision deviations, Hong Kong's corporate sector had demonstrated conservative attitudes and even resistance towards more prescriptive and stricter approaches of governance. This reluctance to change can be illustrated by the results of a series of consultations regarding reform of the Listing Rules and Corporate Governance Code.

To minimize conflict of interest in a corporate environment where many companies are family-controlled, a proposal was made to require INEDs to chair the nomination committee.¹¹⁵ However, the proposal was opposed for being unreasonable in restricting the right of controlling shareholders to choose board members, and it was argued the board chairman should chair the committee instead.¹¹⁶ A proposal for mandating the establishment of corporate governance committee, an independent body responsible for evaluating corporate governance practices and making recommendations to the board, was widely opposed and companies preferred corporate governance to remain a responsibility of the board instead of it being delegated to committees.¹¹⁷ Eventually in later consultations, these proposals were all dropped and replaced by more lenient requirements.

Following the footsteps of the United Kingdom's approach in corporate governance regulation, proposal was made to upgrade the recommended practice of annual board performance evaluation by external adviser to a compulsory comply-or-explain provision. Although there are plentiful benefits of board evaluation such as assessment of balance of skills, knowledge and experience on the board,¹¹⁸ review of current board practices¹¹⁹ and generating information for shareholders concerning board function,¹²⁰ a significant majority of companies opposed the proposal, suggesting that established corporate and cultural values¹²¹ would turn performance evaluation into superficial box-ticking exercises, rather than a meaningful practice that would extend beyond compliance to reflect on

¹¹⁴ Hong Kong Exchanges and Clearing Limited, *supra* note 101, at 9.

¹¹⁵ Hong Kong Exchanges and Clearing Limited, Consultation Conclusions on Review of the Corporate Governance Code and Associated Listing Rules Hong Kong 30 (2011).

¹¹⁶ *Id.* at 31.

¹¹⁷ *Id.* at 34.

¹¹⁸ Institute of Directors, Board Evaluations and Board Effectiveness: An Outline of the IoD Services and Approach (2010).

¹¹⁹ *Id.*

¹²⁰ *Id.*

¹²¹ Hong Kong Exchanges and Clearing Limited, *supra* note 113, at 40.

leadership, role clarity, accountability, decision-making, communication and operations of the board.¹²²

Influenced by traditional values, existing business practices and the desire to maintain control, Hong Kong's enterprises are reluctant to subject themselves to increased transparency and accountability. The "comply-or-explain" principle of the Corporate Governance Code largely rests upon the presumption that shareholders will take up the role in monitoring compliance with regulatory requirements. Nevertheless, in a corporate environment where share ownership is concentrated and compliance is communicated through brief and uninformative statements,¹²³ engagement by shareholders is lacking, and shareholders are placed at the discretion of directors whose power is subject to limited constraint.

C. Insufficient protection for minority shareholders

For a stock market to secure confidence from investors, it is of paramount importance to establish shareholder rights and protect shareholders from potential expropriation and insider abuse of power,¹²⁴ hence shareholder investors can feel more assured about investing funds into the growing capital market. In Hong Kong, while the corporate environment has granted controlling shareholders, directors and management with disproportionate power, minority shareholders find themselves in a weak position due to their shortcomings in three major aspects: shareholder engagement, protection from potential expropriation, and legal remedies for seeking redress.

In Western Anglo-Saxon corporate governance systems, it is believed that shareholders as owners of the company should be empowered to take a constructive role and engage with governance of companies, as the stock market may not always provide efficient outcomes.¹²⁵ This is facilitated by the growth of long-term institutional investors in the form of pension and insurance funds within Western Anglo-Saxon stock markets. Since they hold a large percentage of tradable shares in the market and have emerged as powerful market participants, when they actively exercise governance rights with view of enhancing long-term returns,¹²⁶ they are in a strong position to influence corporate governance to protect themselves from potential expropriation. This shareholder engagement model is made possible by the

¹²² Tracy Long, *This Year's Model: Influences on Board and Director Evaluation*, 14 Corp. Gov. 547, 551 (2006).

¹²³ Keay, *supra* note 60.

¹²⁴ Standing Committee on Company Law Reform, Corporate Governance Review 40 (2001).

¹²⁵ See Eva Micheler, *Facilitating Investor Engagement and Stewardship*, 14 European Business Organization Law Review 29 (2013).

¹²⁶ *Id.*

nature of Western Anglo-Saxon stock markets, where share ownership of listed companies is widely dispersed among public investors.

There is a different story in Hong Kong. Most listed companies are family-controlled, with public investors forming only a small percentage of total ownership stake, hence unable to establish themselves as influential parties within the ownership structure. Ownership stakes of institutional investors in Hong Kong remain comparatively small. To make the matter worse, Hong Kong investors are famously known for their short-term orientation.¹²⁷ Lacking interest in long-term value of companies, they lack access to facts, make investment decisions based on rumors, and their attempt to avoid bad governance is to hold stocks for only a few days or even hours.¹²⁸ Due to inactive shareholders' engagement, in practice the voice of public investors are overwhelmed by the employee shareholders, who are often under the direct instructions of management or controlling shareholders.¹²⁹

Since the use of pyramidal ownership structures allows controlling shareholders to exercise control without being subject to director's duty of loyalty,¹³⁰ the Listing Rules set out specific provisions to address the problem of potential expropriation by prohibiting related-party transactions without prior shareholder disclosure and approval. As comprehensive as the rules can get, compliance remains merely on a "comply-or-explain" basis, and there is no statutory backing of the Listing Rules empowering enforcement agency to hold the parties criminally liable. Although listed companies in theory can be suspended or even delisted for breaching the Listing Rules, studies have shown that in practice any such measures are likely to harm the minority shareholders' interests that the Listing Rules seek to protect.¹³¹ Therefore SEHK often resorts to measures like issuing private reprimand, public statement, criticism or public censure,¹³² which are considered far too lenient to deter controlling shareholders and listed companies from engaging in lucrative related transactions.

Conferred with insufficient protection from potential expropriation, minority shareholders in Hong Kong are left with ineffective legal remedies

¹²⁷ See Isaac Otchere & Jonathan Chan, *Short-term Overreaction in the Hong Kong Stock Market: Can a Contrarian Trading Strategy Beat the Market?* 4 The Journal of Behavioral Finance 157 (2003).

¹²⁸ David Webb, *Corporate Governance as a factor in Hong Kong's Competitive Position* in Hong Kong Democratic Foundation News Letter (March 20, 2001)

¹²⁹ *Id.*

¹³⁰ As a common law jurisdiction, Hong Kong recognizes the legal principle established in case precedents like *Aberdeen Railway Company v Blaikie Bros.*, whereby directors are subject to fiduciary duties, in particular the duty of loyalty mandating directors to avoid self-dealings and conflicts of interest.

¹³¹ Say H Goo, *Minority Shareholders in Hong Kong: A Legal Conundrum* in Building Value in Asia: Corporate Governance and Compliance for a New Era 80 (Nick Ferguson ed., 2000).

¹³² *Supra* note 37 Section 194, 196.

for seeking redress. Shareholders may bring derivative action either under common law when fraud on the minority is perpetuated by controlling directors or majority shareholders, and alternatively under the Companies Ordinance when fraud, negligence or breach of duty is concerned.¹³³ It is also possible for shareholders to petition for court order when they allegedly become victims of “unfair prejudice”. All these options nonetheless come with enormous difficulties, with costs being the primary issue. Court proceedings and petitions are notorious for their protracted, burdensome and expensive nature.¹³⁴ A shareholder bringing derivative suit is potentially liable for the costs of litigation, yet legal aid is not available for shareholder disputes, and damages are only awarded to the company instead of the shareholder.¹³⁵ For many years, there was not even a single case where the plaintiff of derivative action ended up winning the litigation and obtaining relief.¹³⁶

V. Conclusion

This article has explained the features of Hong Kong’s corporate governance system and how minority shareholders are placed in a relatively vulnerable position with assets and investment susceptible to expropriation by powerful controlling families. Hong Kong’s position as leading financial center is facing increasing challenges and there are now more suggestions for reform, especially with regard to guiding and materializing good corporate governance practices.

One suggestion is to rewrite the Corporate Governance Code to incorporate stricter rules regarding board committees and board evaluation. In a corporate environment where company directors are mostly associates affiliated with controlling family members, independent board committees can facilitate a transparent and objective evaluation of the needs, composition and performance of the board. When the nomination of NEDs and INEDs is reserved as the exclusive responsibility of an independent nomination committee, choice of candidates will be less influenced by personal connections but more by their actual knowledge, skills and experience. Studies have long revealed the significant relationship between board

¹³³ *Supra* note 24 Section 731.

¹³⁴ Cheung, *supra* note 85.

¹³⁵ Goo & Weber, *supra* note 92.

¹³⁶ Félix E Mezzanotte, *The Unconvincing Rise of the Statutory Derivative Action in Hong Kong: Evidence from Its First 10 Years of Enforcement*, 17 *Journal of Corporate Law Studies* 469 (2017).

independence and shareholder wealth.¹³⁷ A more independent board can restraint and limit shareholders' expropriation, and thus alleviate the effects of ownership disparity on both shareholders and the company.

INEDs are the backbone of impartial board committees. To improve the quality and competence of INEDs, one possible way is to establish a professional licensing system, hence people aspiring to be INEDs must undergo a series of training and receive qualification from accredited professional bodies before taking up role as INED in listed companies. Suitable candidates can be more actively sought overseas to bring international experience to companies in Hong Kong, and foreign talents can also introduce new concepts to connect Hong Kong's corporate governance system with leading examples in the world.

Weaknesses with minority protection have spawned discussions, and among the various suggestions for improvement, cumulative voting stands out as a good approach to ensure the voice of minority shareholders are heard. At present, Hong Kong law does not permit cumulative voting.¹³⁸ Under cumulative voting rules, shareholders with ownership exceeding a certain threshold can vote for one or more directors to the board, and it is possible to accumulate votes to cast them for a selected number of directors.¹³⁹ Therefore, even if some candidates are vehemently opposed by the controlling majority shareholders, cumulative voting allows the substantial minority to cumulate their voting power to ensure that directors representing their voice are elected.¹⁴⁰ This mechanism does not change the basic principle of representation being proportional to ownership stake, but it allows directors representing minority interest to enter the board as corporate watchdogs to monitor the management of companies dominated by controlling family shareholders.¹⁴¹

Last but not least, the regulatory role of SEHK can be strengthened by implementing the strategy of enforced self-regulation.¹⁴² In developed economies like the United Kingdom, regulatory functions are carried out by a single regulatory agency called the Financial Services Authority without any

¹³⁷ See Bernard Black, & Woochan Kim, *The Effect of Board Structure on Firm Value: A Multiple Identification Strategies Approach Using Korean Data*, 104 J. Financial. Econ. 203 (2012).

¹³⁸ David C Donald, *A Financial Centre for Two Empires: Hong Kong's Corporate, Securities and Tax Laws in its Transition from Britain to China* 124 (2014).

¹³⁹ See Sanjai Bhagat & James A Brickley, *Cumulative Voting: The Value of Minority Shareholder Voting Rights*, 27 The Journal of Law and Economics 339 (1984).

¹⁴⁰ Bruce Welling, *Corporate Law in Canada: The Governing Principle* Toronto 960 (2d ed. 1991).

¹⁴¹ See Jeffrey N Gordon, *Institutions as Relational Investors: A New Look at Cumulative Voting*, 94 Colum. L. Rev. 124 (1994).

¹⁴² See John Braithwaite, *Enforced Self-Regulation: A New Strategy for Corporate Crime Control*, 80 Michigan Law Review 1466 (1982).

profit-making companies' participation in the market¹⁴³ and the Authority is equipped with extensive disciplinary powers.¹⁴⁴ If market regulators in Hong Kong become independent authorities empowered to review corporate governance reports, evaluate deviations from the Corporate Governance Code and impose sanctions for breaches and failure to rectify, the self-regulatory nature of "comply-or-explain" mechanism can be supplemented by effective enforcement to foster better corporate governance.

Despite the uncertainties caused by a series of social unrests since 2019, Hong Kong remains an international financial center of irreplaceable importance to mainland China, as exemplified by the listing of Alibaba Group, the world's largest e-commerce conglomerate, on the Hong Kong Stock Exchange. With more mainland Chinese companies getting listed and expanding their operation in Hong Kong, the dominance of family-controlled companies is likely to persist. Improving the corporate governance system, especially the mechanism for minority shareholder protection, will help Hong Kong further consolidate its position as a financial hub of East Asia.

¹⁴³ This is in contrast with the Hong Kong Exchanges and Clearing Limited, who is the holding company and operator of the Stock Exchange of Hong Kong, and it got listed on the Stock Exchange itself in 2000. SEHK acts as the regulator to monitor listed companies, yet at the same time its parent company is a profit-making company listed on the market itself, benefiting from the reputation and performance of the market. The conflict roles have been subject to criticism, as the SEHK may refrain from strenuous enforcement and disciplinary actions at the risk of market downfall.

¹⁴⁴ Financial Services and Markets Act (June 14, 2000).

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Korea Oil Pollution Damage Compensation Scheme and Major Oil Spill Case Review

- Focusing on Hebei Spirit Incident and Wuyisan Incident -

*Yo Sub Park**

ABSTRACT

Major oil pollution incidents, although infrequent, have been occurring consistently in the Korean peninsula during the last 2 decades and this trend will likely continue due to Korea's active maritime trade and Korea's position as being one of the world's leading crude oil importers. Inevitably, there is a significant risk of catastrophic level oil pollution incidents to occur in Korea with recent track record supporting the expectation: Hebei Spirit oil pollution incident in 2007 as the largest oil spill in Korea, affected 350km of the Korea's coastline, and Wuyisan incident in 2014 affecting the southern coast, being the 2nd largest oil pollution in Korea.

Having dealt with such large oil pollution incidents as a country, Korea's applicable compensation regimes and systems have been practically trialed & tested, giving us a chance to review what worked and where improvements are required.

In this paper, we reviewed the oil pollution compensation framework in Korea and how it had applied to the 2 largest oil spill accidents to date. With the writer's involvements in the 2 cases as claims surveyor/assessor, the paper aims to share insights from a claims handler's perspective on the oil pollution compensation process experienced.

KEYWORDS: Compensation for Oil Pollution Damage Guarantee Act, Hebei Spirit Oil Spill Incident, Wuyisan Incident, Oil Pollution Compensation, Shipowners Limitation of Liability

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** Executive Director, Spark International.

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- VII. Wuyisan incident compensation process from the viewpoint of claims assessor/handler.
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I. Introduction

Put amongst the various types of maritime casualties, major oil spill incidents are considered casualties with one of the highest quanta of claims with often, difficulties in the smooth & quick implementation of compensation to the claimants. Before the advance of technology that allows large quantity of oil transportation by sea, major oil spill pollution had not been a mainstream issue of concern in the industry. Therefore, discussions and developments of conventions regarding oil pollution compensation are a concern of the modern era. However, starting with the *Torrey Canyon* incident in 1967 as the first major oil spill incident of the century, it was evident that the existing compensation regime would not be sufficient to cover the damages occurred. This led to an active discussion between the international bodies and IMO, resulting in the formation of 1967 Civil Liability Convention (CLC) and the 1971 Fund Convention (FC), which was then followed by 1992 CLC, 1992 FC protocol and the Supplementary Fund and Bunker Convention. Such conventions were one of the first to introduce compulsory insurance and rights

of direct action against the liability insurers¹ which reflected the expected high level of compensation required in major oil spills. The conventions also included strict liability, channeling of liability to registered owners and a tier compensation system.

Compensation regime for oil pollution can be largely broken down into 2 categories: One being the compensation for oil pollution (persistent oil) arising from oil tanker which is covered by the CLC, FC and Supplementary Fund.² On the other hand, oil pollution arising from bunker fuel is mainly covered by the Bunker Convention. The compensation for damages arising from oil pollution at sea is normally subject to the local law of the affected state but as many of the countries have become signatories to the international conventions incorporating the conventions to domestic law, the compensation framework is quite consistent across nations, with few exceptions such as OPA90 of USA.

Korea has seen its fair share of large-scale oil pollution in the 21st century through the *Hebei Spirit* oil spill incident in 2007, followed by the *Wuyisan* oil spill incident in 2014. The magnitude of the *Hebei Spirit* oil spill was catastrophic. The claim amount (USD 3.57 Billion) in this one case exceeded the claim amount of all previous oil spill incidents handled by the IOPC Fund combined. The *Wuyisan* oil spill on the southern coast was much smaller in comparison to the *Hebei Spirit* but still considered one of the largest oil spills in Korean history. *Wuyisan* case is considered unique since the international oil pollution liability regime of Civil Liability Convention (CLC) And the Fund Conventions (FC) were not applicable because the polluting oil originated from the oil refinery. The incident is worthy of review for the issue of ‘enhanced limitation’ and for the comparative analysis of oil pollution compensation as per the Korean Civil law not subject to the CLC and FC. Aside to the 2 aforementioned cases, considering that there have been around 270 marine pollution cases occurring in Korea on a yearly basis³ with average 1.7 major pollution cases (over 100kl of pollutant spilt),⁴ oil pollution compensation regime is a key issue for Korea requiring due attention.

The paper will briefly review the existing oil pollution compensation framework in Korea, specifically focusing on ‘Compensation for Oil Pollution Damage Guarantee Act’ highlighting the differences from the CLC and FC and will also touch upon the limitation proceeding. The key legal issues addressed by the Korean court regarding *Hebei Spirit* oil spill compensation and insight on the compensation process from the claims handler’s perspective will be

¹ International Group of P&I Clubs. Module 6 Collision FFO & Pollution, at 65 (2020).

² Kim, In Hyeon, *Maritime Law*, 6th edition, 2020, at 465.

³ Lee, Tae Ho, Jung, Bong Kyu, A Study on Marine Pollution Accident Risk Evaluation of Each Sea Area and Improvement Plans, *Journal of Fisheries and Marine Sciences Education*, Volume 33, No. 1, The Korean Society Fisheries and Sciences Education (2021), at 81.

⁴ Kim, Jin Su, Marine Pollution Accident Management Status and Improvement, *Issue and Points*, Volume 1288, National Assembly Research Service (2017. 3.)

reviewed. Lastly, summary of the *Wuyisan* oil spill incident and the compensation framework applicable will be shared, ending with comparative insight on the compensation process from the claims handler's perspective.

II. Overview of the Oil pollution compensation framework in Korea

Korea ratified the '69 CLC on 18th December 1978 and also became party to '71 FC on 8th December 1992, and to incorporate these international conventions into domestic law, Korea enacted the 'Compensation for Oil Pollution Damage Guarantee Act' (KOPCA from hereon) on 8th December 1992, which came into effect on 1st January 1993.⁵ On 7th March 1997, Korea ratified 92' CLC and '92 FC protocol which came into effect on 16th May 1998 and accordingly, amendments to the KOPCA was passed by the National Assembly in December of 1996 and the revised KOPCA came into effect on 13th January 1997. KOPCA went through various further amendments in 2003 and 2007 which resolved some of the discrepancies that existed between the KOPCA and the international regime and lastly in the year 2009, relevant amendments were made to KOPCA to reflect the Bunker convention which came into effect in Korea on 21st November 2008.

In the *Hebei Spirit* incident in 2007, the 92' CLC and 92' FC were not able to sufficiently compensate losses arising from the *Hebei Spirit* oil spill incident and accordingly, this encouraged Korea to become party to the Supplementary Fund, which was achieved in 2010 extending the IOPC Fund limit to SDR 750 million per incident. The relevant changes required to KOPCA were already in progress and was included in KOPCA 2009 amendment. In the meanwhile, as the losses incurred in the *Hebei Spirit* incident could not be fully covered by the standing conventions (Supplementary Fund joined after the incident therefore not applicable), the Korean government passed a special law 'Support of Affected Inhabitants and the Restoration of the Marine Environment in respect to the *Hebei Spirit* Oil Pollution Incident' which ensured that the amount exceeding the limits of the CLC and FC would be compensated by the Korean government. In addition to payment of compensation exceeding the limit, the special law enabled claimants to receive payment from the Korean government in advance when the claims submitted was accepted by the Owner, Insurer or the IOPC Fund⁶ and also when the assessment of claim was delayed

⁵ Jung, Hae Duk, *Maritime Law*, 2020, at 473.

⁶ Moon, Kwang Myeong, *Improvement of Compensation Scheme and Compensation Procedure for Oil Pollution Damage Focusing on Implications of Hebei Spirit Oil Pollution Accident*, *The Journal of Korea Maritime Law Association* Volume 40, No.2, The Korea Institute of Maritime Law (2018. 11.), at 161.

for more than 6 months from the submission of claims.⁷ However, the special law created a controversy that the amount exceeding the limit being compensated by the Korean government would mean that the Korean people would be the ones unfairly bearing the burden of compensation instead of the responsible party.

Although the relevant International Conventions (CLC, FC, Bunker Convention) and its amendments form the foundation of the KOPCA mirroring the contents of the conventions, there are a few important differences to note which in general, are more favorable to the claimants. Firstly, KOPCA applies a stricter compulsory insurance limit of 200 tons (Article 14) in contrast to the Conventions' 2,000-ton limit.⁸ Secondly, if a vessel is of the foreign registry but the bareboat is chartered by the national of the Republic of Korea, both the registered owner and the bareboat charterer would be deemed as the shipowner under the Act (Article 2) and held jointly liable. Lastly, KOPCA allows priority rights of a ship (Article 51) to the limited claimants which are non-existent in the CLC and Bunker convention.⁹ However, there is a difference in opinion as to whether this priority right would practically be needed as the claimants of the oil spill have the right to directly claim against the insurer of the vessel as per the KOPCA. Nevertheless, KOPCA also allows the insurer to void liability if oil pollution damages resulted from the intentional misconduct of the owner of the oil tanker (Article 16), and also with the breaking of limitation being possible, such priority right may well be necessary.¹⁰

III. Limitation Proceeding

The Compensation for Oil Pollution Damage Guarantee Act (KOPCA) allows the limitation of liability for the shipowners/insurers in respect to oil pollution and addresses how the limitation would proceed in conjunction with 'Act on the Procedure for Limiting the Liability of Shipowners, etc.' (Limitation Procedure Act)¹¹

The limitation proceeding is commenced by the Shipowner's/insurer's submission of an application for the initiation of the procedure for limiting liability to the court as per the 'Act on the Procedure for Limiting the Liability of Shipowners, etc.' The application must be submitted within six months from the date when the Owner receives a written claim for compensation from the

⁷ Kim, In Hyeon, *Maritime Law*, 6th edition, 2020, at 466.

⁸ Kim, In Hyeon, *op.cit.*, at 457.

⁹ Kim, In Hyeon, *op.cit.*, at 458.

¹⁰ Kim, In Hyeon, *op.cit.*, at 459.

¹¹ Jung, Hae Duk, *op.cit.*, at 502.

claimant,¹² which states the amount exceeding the limit of liability determined in the KOPCA. Any case filed for the initiation of the procedure for limiting liability fall under the exclusive jurisdiction of the district court which has jurisdiction over the location where the oil pollution damage by an oil tanker took place.¹³

Where the application for the initiation of the procedure for limiting liability is deemed appropriate, the court orders the applicant to deposit the amount equivalent to the aggregate amount of the liability under KOPCA plus interest on the said amount calculated at an annual interest rate of 6% over the period from the date of the incident, or any other date designated by the court as the initial date, to the due date of deposit within a period not exceeding 14 days.¹⁴ With permission of the court, a written guarantee of deposit including P&I Club's letter of Guarantee may be submitted in place of cash deposit.¹⁵

Upon review of the application, proceedings for limiting liability become effective when a decision to commence the proceedings is made by the court. Once the limitation proceeding is commenced, the court appoints an administrator of the proceeding and decides the period for reporting limited claims, (specified period cannot be less than 30 days and more than 90 days from the date of decision) and the period for investigating the limited claims (not less than seven days but not more than 30 days after the expiration of the reporting period).¹⁶ With the decision on the commencement of the limitation proceeding, the claimants submit their limited claims to the court within the reporting period and the administrator will investigate the claims submitted.

Thereafter, the relevant parties (petitioner, for-profit debtors, intervenors) and their representatives are given an opportunity to make an appearance at the proceedings for the investigation of limited claims and may raise their objections against the reported claims. If no objection is raised, the reported claim is determined as a limited claim. For reported claims with objections raised by the relevant parties, the court will make a judgment of the assessment. A person who is dissatisfied with the judgment of assessment (excluding the administrator) may file a challenging lawsuit within 14 days from the date on which the decision is served.¹⁷

Upon closing of the investigation proceeding, the administrator prepares a dividends distribution statement and upon obtaining approval from the court, will begin distributing the dividends.

¹² KOPCA, Article 7.

¹³ KOPCA, Article 32(2).

¹⁴ KOPCA, Article 34(1).

¹⁵ KOPCA, Article 34(3).

¹⁶ Limitation Procedure Act, Article 20.

¹⁷ Limitation Procedure Act, Article 59.

IV. Korean court's position on various legal issues of *Hebei Spirit* incident compensation

With the *Hebei Spirit* incident in 2007, the international conventions and KOPCA were put to their test as they were applied to the compensation process. With the objections raised in the limitation proceeding by the relevant parties, the court made various judgment of assessment addressing some key issues in the compensation standard. A brief summary of the incident and some of the issues addressed are explained as follows: -

A. Background¹⁸

On 7th December 2007, the Hong Kong-registered tanker *Hebei Spirit* (146,848 GT) in a laden condition of some 209,000 tonnes of crude oil and at anchor at about five nautical miles off Taean on the west coast of the Korea peninsula, was struck by a drifting crane barge Samsung N°1. It was originally towed by two tugs (Samsung N°5 and Samho T3) but the tow line broke under poor weather conditions. As a result of the collision, three of the port cargo tanks of the *Hebei Spirit* tanker were punctured but due to poor weather conditions, repairs to the punctured tanks took around 4 days to complete. It was calculated that a total of 10,900 tonnes of oil had been spilled into the sea, affecting 350km of Korea's coast line.

M/T '*Hebei Spirit*', owned by the Hebei Spirit Shipping Company Limited, was insured by the Skuld Club (IG P&I Club) and managed by V-Ships Limited. Samsung Corporation and its subsidiary Samsung Heavy Industries Co., Ltd (SHI) under the Samsung Group, owned and operated the crane barge and the two tugboats.

the Republic of Korea is a Party to the 1992 CLC and the 1992 Fund Convention but had not ratified the Supplementary Fund Protocol at the time of the *Hebei Spirit* incident. M/T '*Hebei Spirit*' (146,848 GT) was in excess of 140,000 GT and accordingly, the limitation amount was calculated to be the maximum under the 1992 CLC of SDR89.77 million. The amount available for compensation in total under the 1992 CLC and the 1992 Fund Convention was SDR203 million as per the 1992 Fund Convention limit. The amount was converted to KRW 321 billion using the exchange rate of SDR1 = KRW1,584.330 on 13 March 2008. In addition, a special law 'Support of Affected Inhabitants and the Restoration of the Marine Environment in respect of the *Hebei Spirit* Oil Pollution Incident,' was passed by Korea's national assembly to allow compensation of claims exceeding the limitation amount under the conventions.

¹⁸ IOPC Fund Website <<https://iopcfunds.org/incidents/incident-map#3276-07-December-2007>>.

Limitation proceedings were commenced by the owner and insurers of the *Hebei Spirit* whereby the end, some 127,483 claims with aggregate claim amount of KRW 4,227 billion (approx. USD 3.57 billion), were submitted with the court administrator appointed to review the claims. Limitation Court made a judgment in January 2013, granting KRW 736 billion (approx. USD 620 million) in compensation to the claimants of the *Hebei Spirit* incident. Claimants were granted two weeks to submit objections to the Limitation Court's decision as per the Korean law, resulting in 149,714 objections filed to Seosan Court. This consisted of 86,578 objections by the claimants and 63,163 objections by the Club/Fund. By the end of the procedure, all objected claims were resolved with a total of KRW 432.9 billion (USD366 million) being awarded as compensation to the claimants.

B. Binding power of the Claims Manual^{19 20}

The IOPC Fund's Claims Manual is used as a general guideline of the standard compensation applicable and the requirements of an admissible claim. Daejeon District Court judged that the Claims Manual is only an internal standard of the IOPC Fund which was not legally binding in respect to the claims submitted by the claimants of the *Hebei Spirit* incident and accordingly, the compensation standard must follow *lex fori*, being the law of the Republic of Korea regarding compensation for damages. The court explained the basis of the judgement as the Claims Manual's introduction states that the manual is designed to only 'assist claimants by giving a general overview of the Fund's admissibility criteria and does not address legal issues in detail and should not be seen as an authoritative interpretation of the relevant international Conventions'. Further, KSC viewed that the Claims Manual is fundamentally not a convention in itself as the countries party to CLC and FC have applied different compensation standards in the previous incidents and this position is further supported by the existence of independent compensation standards such as OPA90 in USA. Lastly, neither CLC nor FC stipulate in the conventions, the compensation standard/scope.²¹

C. Illegal revenue

Among the 127,471 individual claims submitted to the limitation proceeding, various kinds of violations of law were found. In regards, the issue

¹⁹ Daejeon District Court 2015.11.11 Docket 2013gahap750 ruling.

²⁰ Korean Supreme Court 2004.4.28. Docket No. 2001da36733 ruling.

²¹ Park, Sung Won, Legal issues arising from the Hebei Spirit oil pollution case, *The Journal of Korea Maritime Law Association* Volume 40, No.2, The Korea Institute of Maritime Law (2018. 11.), at 109-110.

was whether revenue generated from such violation of law should be considered as part of the basis of the claim assessment resulting in compensation. KSC had previously determined that despite the existence of a violation of law and the illegal revenue generated, the purpose behind the law the degree of condemnation of such illegal activity and the level of illegality must be comprehensively reviewed, and each case judged individually.²² Consequently, revenue generated in violation of various law & regulations were in fact, allowed to be used as a basis of claims assessment resulting in compensation once they were deemed to be of minor illegality.

D. Consolation compensation²³

IOPC Fund Claims Manual states that quantifiable economic loss is admissible for compensation,²⁴ so consolation compensation is expected to be not admissible as per the standard of the IOPC Fund. However, as mentioned above, the losses incurred from the *Hebei Spirit* oil spill incident must be compensated following the law of the Republic of Korea and Korea's civil law stipulates that 'Non-economic damages' must be compensated if incurred from a tortious act from another person. Article 751 (Compensation for Non-Economic Damages) of the Civil Code states that a 'person who has injured the person, liberty or fame of another or has inflicted any mental anguish to another person shall be liable to make compensation for damages arising therefrom.' Claim for the KOPCA does not bar the rights of the claimants to claim compensation as per the Civil Code. In respect to loss not admissible under KOPCA (*i.e.* convention standard), those losses may well be accepted under the Civil Code provision which includes Consolation compensation. Henceforth, consolation compensation may be theoretically possible but, in fact, there wasn't a case in the *Hebei Spirit* incident where compensation for mental anguish was accepted. Rather, in the lawsuits filed by the claimants against the limitation court's judgment of assessment, the Korean court viewed that the alleged mental anguish claimed would have been recovered with the compensation for the economic losses and accordingly, dismissed the claim submitted.²⁵

²² Korean Supreme Court 2004.4.28. Docket 2001da36733 ruling.

²³ Daejeon District Court 2015.12.30 Docket 2013gahap590 ruling.

²⁴ IOPC Fund website <https://iopcfunds.org/wp-content/uploads/2018/12/2019-Claims-Manual_e-1.pdf>.

²⁵ Daejeon District Court 2015.12.30 Docket 2013gahap590 ruling.

V. Hebei Spirit Compensation process from the viewpoint of claims assessor/handler

The main difficulty regarding compensation following a major oil spill across the globe is inevitably the issue of prompt and fair compensation. There have been concerns that IOPC Fund system do not meet the goal of prompt compensation, calling for establishment of domestic regime to better assist the process.²⁶ In practice, prompt and fair compensation is made difficult by the sheer volume of claims submitted, the complicated & long legal procedures involved before payment can be made, and the claimant's difficult burden of proving the loss. The *Hebei Spirit* incident is no exception to these issues, resulting in the compensation process which took around 10 years to be completed.

Some issues worthy of note include the large difference observed between the claimed amount and the amount finally compensated. A number of reasons could be attributable to this outcome but from the standpoint of the claims assessor, one of the striking issues were how ill-prepared the claimants and their representatives were (including their lawyers & surveyors) in submitting their claim accurately and at an acceptable level to that of the IOPC Fund Claims Manual. Most of the claims submitted lacked evidence and the process of acquiring necessary documents/evidence was time-consuming and often not successful. This compounded with the different perspective on the key aspects such as the admissible period & affected area for compensation inevitably resulting in slow assessment & lower compensation level. In hindsight, one of the crucial issues that required improvement was the lack of preservation of evidence or failure to collect necessary evidence in the initial stages, which resulted in significant delay in assessment of the claims by the court.

It is the IOPC Fund's goal that the Claims Manual is strictly applied to claim assessments to ensure that the same standard of assessment is applied across different incidents. However, the claimants would often be unable to meet the standard of the manual resulting in poor or no compensation but as the Korean court viewed that the IOPC Claims Manual was not legally binding and the compensation must be made as per the Korean law, the claimant could rely on the judgement assessment and lawsuit to obtain a more lenient compensation assessment contrary to the initial assessment. Examples of such would be the initial rejection by the Fund of the compensating losses arising from illegal revenue and the usage of models to quantify losses when there were insufficient documents. This process of strictly applying the Manual but later revising the assessment as per the court's decision, allowed the IOPC Fund to avoid making

²⁶ Kim, In Hyeon, Recent Development of Oil Pollution and Wreck Removal Law in Korea, *The Asian Business Lawyer* Volume 2 No.0, The Korea University Legal Research Institute (2008), at 47

unwanted precedence and to continue applying the same Claims Manual standard for future oil spill incidents as well, albeit the additional delay it may cause in compensation.

Specifically, as to the limitation proceeding, it had taken 5 years from the incident date and 4 years from the commencement of the limitation proceeding for the court to render judgement of assessment for the limited claims. This slow process was caused by the sheer large volume of claims and the lack of evidence that is available for the court to make assessments. Such slow process raised a question in the industry where if the judgment of assessment cannot be accurately or promptly be carried out due to the limiting circumstances causing significant delays and unreliable assessment, whether an amendment to the law is necessary to allow the limited claimants to bypass the procedure and directly file a lawsuit.²⁷ Such change would indeed be helpful in reducing the delay in compensation only in the right circumstances.²⁸

Lastly, there is growing support in the proposal of setting up a National Fund to allow prompt compensation of the claimants providing quick relief, then for the government to take recourse action against the Owners of the vessel & IOPC Fund. This may be possible through the passing of new law or amending the KOPCA where the Fund can be managed by government organizations funded by the Oil receivers and the government.²⁹ Examples of similar types of oil pollution compensation set up are that of 'Ship-source Oil Pollution Fund, SOPF' of Canada and 'Pollution Maritime, POLMAR' of France. Although this will require a significant change to the existing framework, if such National Fund has been tested and proven to work in example countries, it may well be an impactful improvement to the current setup.

VI. 2014 Wuyisan Oil pollution Incident on the southern coast of Korea

Being one of the major oil spills in the Korean peninsula in the 21st century, the Wuyisan oil spill incident is worthy of study as a comparative case against the Hebei Spirit incident, especially in terms of the compensation process that

²⁷ Daejeon District Court, Large Scale Maritime Pollution Accident Trial Practice -Focus on Hebei Spirit Oil Pollution Accident Loss Compensation-, 2017, at 188.

²⁸ Moon, Kwang Myeong, Improvement of Compensation Scheme and Compensation Procedure for Oil Pollution Damage Focusing on Implications of Hebei Spirit Oil Pollution Accident, *The Journal of Korea Maritime Law Association* Volume 40, No.2, The Korea Institute of Maritime Law (2018. 11.), at 181.

²⁹ Kim, In Hyeon & Choi, Se Ryoun, Canadian Oil Pollution Compensation Fund Regime and its Implications for Korea, *The Journal of Korea Maritime Law Association* Vol. 32, No.2, The Korea Institute of Maritime Law (2010. 11.), at 167-73.

was applied.

A. Background

Fully laden Crude oil tanker M/T ‘Wuyisan’ (164,169GT), whilst approaching Yosu GS Caltex oil refinery jetty on the morning of 31st January 2014, as a result of pilot error, collided with the refinery jetty dolphin at 0935 hours as the tanker had approached the jetty too fast at 7.6 knots losing control. The pipelines of the jetty were ruptured from the collision and the oil and chemicals present in the pipelines were spilled into the adjacent sea and bay area. It was later found that a total of some 800~899 tons of pollutants had been spilled comprising of 483 tons of crude oil, 284 tons of Naptha, and 32-131 tons of oil mixture. This resulted in major contamination of the Kwangyang and Yosu bay areas and a total of some 59 coastlines were polluted. However, no oil was spilled from the oil tanker itself.

The damages suffered by the inhabitants of the region ranged from environmental damage, fishery damages, tourism damages and property damages. Aside from the damages directly suffered by GS Caltex oil refinery (jetty damage *etc.*), the incident resulted in some 6,500 claims submitted by the claimants against the oil refinery with a final compensation amount of some KRW 30 Billion (approx. USD26 million). With the losses suffered directly by the oil refinery, the total damages incurred from the incident was found to be around KRW 90 Billion (approx. USD 77 million).³⁰

B. Compensation framework

Although Korea is a signatory to the 92’ CLC and 92’ FC, and the existence of KOPCA, these regimes would not be applicable to the incident as the polluting oil had originated from the oil refinery on land and not from the involved crude oil tanker. Consequently, the compensation would have to be made as per the Korean Civil Code, requiring compensation following joint tortious act³¹ (Article 760) by the Owners of the tanker and the GS Caltex oil refinery, making both parties joint and severally liable for compensation.

However, the owners of the M/T ‘Wuyisan’ would still be able to limit their liability as per the Limitation of Liability of Maritime Claims (LLMC) and with the vessel being of a Singaporean flag, 76’ LLMC limit was applicable (approx. USD25 million). As the initial estimation of quantum of liability exceeded the limit of liability of the vessel, the Owners of the vessel and their P&I insurer, pursued their limitation option and came to settle with the oil refinery at an amount of 1.5 times the value of the vessel limitation amount (approx. USD38

³⁰ Statistics based on GS Caltex oil refinery internal data.

³¹ Kim, In Hyeon, *Transport Law in South Korea*, 3rd edition, 2017, at 139.

million).

The reason behind the increased amount above the limitation amount was due to the issue of ‘enhanced limitation.’ With Korea not being a contracting state to any limitation conventions (although LLMC has been incorporated into domestic law), there have been a precedence of duplicate limitation fund being established in different countries where countries like China, Korea, or Japan, would not acknowledge the establishment of a limitation fund in the other countries.³² It is suspected that the oil refinery was ready to pursue duplicate limitation funds possibly in China, Korea or Japan, albeit the jurisdiction issue would have to be determined, and the Owners of M/T ‘Wuyisan’ assessed such risk and found it reasonable to settle the liability at 1.5 times the normal limit of liability as per 76’ LLMC.

Upon reaching settlement with the Owners of M/T ‘Wuyisan’, the interest of the GS Caltex oil refinery and their insurers (KB insurance - facility insurance & Iron Horse as reinsurer), took initiative in compensating the claimants of the pollution. 99.9% of the claims submitted were amicably settled within 18 months without going to court.

VII. Wuyisan incident compensation process from the viewpoint of claims assessor/handler.

As the CLC & FC and KOPCA would not apply to the compensation process, the compensation for the damages would have to be made as per compensation standard following the general tort of the Korea’s Civil Code. Oil pollution compensation conventions exist to protect the claimants, and the initial concern was whether the claimants would receive fair and proper compensation without these ‘safeguard’ regimes active. However, the result was in fact quite satisfactory to the majority of the claimants where claimants accepted the compensation without pursuing the claim in court. Having been involved in the *Hebei Spirit* incident compensation process where the damages incurred were similar in nature, the team of experts appointed knew from the onset the documents & investigation required and worked closely & quickly with all the concerned parties to make a prompt and fair assessment of the losses. As the claims submitted were amicably settled not going to court, the claimants did not have to go through complicated legal procedures, greatly helping the quick settlement of the claims.

The following are some of the reasons that assisted the process:-

³² Incheon District Court 2013. 5. 21. 2011GaHap17126, 2011GaHap17133 ruling.

A. No limitation of liability available to the oil refinery and their insurers

As the oil refinery is not subject to any limitation conventions and as the claimants were able to claim directly against the oil refinery for the damages sustained, the claimants could be compensated in full without any limitation of liability being applied through the claim being made against the oil refinery and not the Owners of the tanker.

B. GS Caltex reputation & relationship with local interest

GS Caltex oil refinery is a Korean & local conglomerate that must be wary of its reputation and relationship with the local inhabitants and the government. Accordingly, it was evident from the onset that the oil refinery's attitude was to minimize reputation damage and to resolve the matter as amicably as possible. This attitude itself aided a better relationship & cooperation with the claimants and aided in the reasonable and prompt compensation of the claims submitted. On the other hand, it should also be noted that the assessment of the claims had to be considered fair & reasonable by the insurers of the oil refinery for them to approve the payment. The assessments made were accepted as satisfactory to both the insurers and the claimants upon review by the experts appointed by the claimants and the oil refinery insurers.

C. Flexibility in the assessment of claims

Although the claimants are still required to prove their losses as same as any cases of oil spill incidents, there was no need to strictly apply the IOPC Fund Claims Manual to the assessment. Accordingly, there were some flexibilities allowed in the assessment of claims from the onset including usage of modeling to quantify losses in cases where there was insufficient documentation available. With the application of accurate and reliable modelling, this flexibility assisted in prompt assessment was acceptable to claimants and the insurers.

VIII. Conclusion

Hebei Spirit incident provided good insight as to how the oil pollution compensation framework in Korea translates to the actual compensation process in conjunction with the international oil pollution compensation regimes. Through the incident, the Korean court addressed some key issues pertinent to compensation criteria which provided a good reference point of the court's position and how compensation may proceed in future cases. On the

other hand, the *Wuyisan* oil spill incident was able to show that compensation of oil pollution claims may also be completed satisfactorily despite the absence of application of international oil pollution compensation regimes and KOPCA.

Although there are still rooms for improvements and issues to be addressed in respect to compensation criteria following a major oil spill, Korea can be viewed to be in a relatively better position to deal with another major oil spill, should it happen. However, it is still questionable if the compensation will be prompt & efficient as the same fundamental issues remain, including the long legal procedure (limitation proceeding, judgement of assessment, lawsuit objecting to court assessment *etc.*) required before the compensation distribution. To overcome such difficulty, it will be worthwhile to seriously review whether the National Fund compensation setup such as those of Canada & France, be a realistic answer to resolving the problem of delayed compensation. Claimants are inevitably in a weaker position than their counterpart (Owners & insurers) in these oil spill incidents and help from the government through such set up on top of the international regimes present, will be an impactful change in facilitating prompt & fair compensation.

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Practical Issues in Relation to Liability for Oil Pollution Damages in Japan

*TAKUTO KOBAYASHI**

ABSTRACT

Japan has ratified the Bunker Convention and the Nairobi Convention in July 2020. In accordance with those international regimes, the Oil Pollution Act has also been amended and took effect on October 1, 2020.

Under the amended Oil Pollution Act, some issues have been resolved, for instance protecting victims of bunker pollution damages or abandoned ships by allowing them a direct claim against the insurer of the ship owner. However, there are some new legal and practical issues. One such issue is whether time charterers are “operators,” who are held liable for the damages under the current Oil Pollution Act. In global practice, the word “operator” does not include time charterers. Meanwhile, in Japan, sometimes it could imply a time charterer. However, in principle, “operator” should not include time charterers, and if an exception is to be made, the content of the contract between the shipowner and the operator should be carefully investigated to see whether such operator has a right to control the vessel management to prevent the oil incident.

The other issue, among many potential issues, may arise in relation to the construction projects of wind power generation. In such projects, the contractor would enter into EPC contract with its client and would be a charterer of the various types of vessels on the basis of, for example, BIMCO WINDTIME. Under these circumstances, the issue for the owners of the vessel is whether they have a right to limit their liability under the Oil Pollution Act with regard to the recourse claim for the liquidated damages incurred by the charterers under their own EPC contract. The outcome depends on the facts and the interpretation of Article 3(1)(iii) of Limitation of Shipowner Liability Act, which is slightly different from LLMC96. In any case, a fair and reasonable explanation is required for the outcome, especially if such outcome is different from those under LLMC96.

KEYWORDS: Time Charter, Operator, Oil Pollution Liability, Wind Power Projects, WINTIME, Knock for Knock, LLMC96

* TMI Associates/Attorney-at-law, E-mail: tkobayashi@tmi.gr.jp, Telephone: +81-3-6438-5461

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I. Introduction

Japan has ratified the Bunker Convention¹ and the Nairobi Convention² in July 2020, and further amended the Oil Pollution Act in order to make it in line with those conventions.

This article will examine the practical and legal issues in relation to liability for oil pollution damage, particularly damage caused by bunker oil, under the amended Oil Pollution Act.

II. Major Changes in the Amended Oil Pollution Act

A. Brief History and Judgment

There have been incidents caused by abandoned vessels, and the damages incurred by the relevant stakeholders were not fully compensated by the liable parties under the old Oil Pollution Act³ of Japan. There is a judgment related to this issue⁴:

The dredger vessel owned by Hongkong company had been grounded off Miyazaki-city and has been abandoned. The claimant, a fisher claiming the infringement of his fishing right due to the abandoned vessel, tried to file a claim against the vessel's insurer but found that the vessel was not

¹ International Convention on Civil Liability for Bunker Oil Pollution Damage, 2008.

² The Nairobi International Convention on the Removal of Wrecks, 2007.

³ The Act on Liability for Oil Pollution Damage (Act No. 95 of 1975).

⁴ Judgment of Tokyo District Court on 3rd March 2016, Hanrei times No.1450 - 183.

covered by insurance due to non-payment of the premium to be paid under the Oil Pollution Act. Therefore, in turn, the claimant tried to fire a claim against the state for its failure to check and confirm whether the insurance coverage was valid and effective with full payment of the premium when it issued the certificate of contract based on the insurance as per the Oil Pollution Act. The court held that, under the Oil Pollution Act, there was no duty for the state to investigate whether the insurance premium was actually paid by the insured, hence the state is not liable for the damage of the claimant.

Due to these issues, Japan decided to ratify the Bunker Convention and the Nairobi Convention. The purpose of joining these world-wide liability regimes included: (i) to enable victims of oil pollution damage caused by bunker oil or abandoned ships to make direct claims against the insurer and (ii) to restrict the defenses of the insurer only to those the vessel owner could raise against the victim. Under these new regimes, the insurer cannot claim the non-payment of the insurance premium against the victim in the above case (although this conclusion may be altered depending on the specific case).⁵

Since the ratifications of these international conventions, the Oil Pollution Act of Japan has also been amended to be in line with the conventions and has taken effect on October 1, 2020.

B. Right of Direct Claim Against the Insurer and the Effect of Foreign Judgments

As mentioned above, direct claim from the victim against the insurer of the vessel is one of the most important changes in the amendment of the Oil Pollution Act. Previously, such direct claims were only allowed for victims who incurred damages due to tanker oil pollution, as stipulated under CLC92.⁶ The amended Oil Pollution Act adopted the same regime for bunker oil pollution damages.⁷ Under the amended act, the insurer, as defendant, may only raise a defense that the vessel owner can claim against the victim.⁸ Furthermore, a binding judgment of a foreign court regarding the liability of the vessel owner shall also become effective under Japanese jurisdiction, as is the case for judgments regarding the liability of tanker owners for oil pollution damage.⁹

⁵ See Article 7(10) of the Bunker Convention and Article 39(2) of the Act on Liability for Oil Pollution Damage (1975, No. 95).

⁶ International Convention on Civil Liability for Oil Pollution Damage, 1992.

⁷ Article 43 of the Oil Pollution Act.

⁸ Article 39(2) of the Oil Pollution Act.

⁹ Article 32(2) of the Oil Pollution Act.

C. Liable persons – Operator and Time Charterer

The other important change in the amended act is the persons liable for the bunker oil pollution damage. Under the old act, it was stipulated that the “owner” and the “lessee” of the vessel are liable for the bunker oil pollution damages.¹⁰ There was a controversy over the interpretation, whether “lessee” includes time charterers or not.

The amended Oil Pollution Act stipulates that the persons liable are the “Owner of the General Ship (including the manager and the operator of the ship provided in Article1, paragraph 3 of the Bunker Convention)...”¹¹ and “Owner” of the General Ship is defined as “the owner and the lessee”¹² of the General Ship. Therefore, under the Oil Pollution Act, the “owner,” “lessee,” “operator” and “manager” of the ship may be held liable.¹³ It is obvious that the lessee refers to bareboat charterers, but an interpretation issue still remains over whether the “operator of the ship” includes time charterers or not. It seems that there is no established interpretation or precedent, neither under the convention nor within the act.

As applied in global maritime practice, the operator presumably refers to the person who takes responsibility for the navigation and management of the ship, through manning of crews or maintenance of the equipment. In other words, the role of the operator would be taken by the bareboat charterer if it exists; hence, “the co-existence of a bareboat charterer and an operator is difficult to conceive.”¹⁴ Sometimes the role of operator would be carried out by the owners themselves, and sometimes a part of the role would be taken by the manager of the ship, in which case the manger would be a subcontractor of the operator. From this perspective, the word “operator” does not include time charterers who, in most cases, do not have any right or responsibility for the navigation and management of the ship.

Considering that the Oil Pollution Act clearly stipulates that its usage of the word “operator” is the same as in the Bunker Convention, the interpretation of the term under the convention and the act should be consistent with each other.

From this perspective, Article 1(3) of the Bunker Convention, which states that “‘Shipowner’ means the owner, including the registered owner, bareboat charterer, manager and operator of the ship,” should be referred to. Browsing

¹⁰ Article 2(v-2), Article 39-2(1) of the former Oil Pollution Act.

¹¹ Article 39(1) of the Oil Pollution Act.

¹² Article 2(1)(xii) of the Oil Pollution Act.

¹³ Article 39(1) of the Oil Pollution Act.

¹⁴ Francesco Berlingieri, *International Maritime Conventions Volume III: Protection of the Marine Environment*, at 195-196 (2015, Informa).

the history of the drafting of the Bunker Convention, in its first draft the term was defined to be the same as in Article 1(2) of CLC, where the person liable is defined as the registered owner or the owner.¹⁵ ¹⁶ Subsequently, albeit with significant opposition, the scope of persons liable under the Bunker Convention was expanded for better protection of the victims of bunker oil pollution.¹⁷ It should be noted that, even under these considerations, the words “charterer” or “time charterer” were seemingly avoided and excluded intentionally. Furthermore, the definition of “Shipowner” under the Bunker Convention is also different from that under LLMC96,¹⁸ which states “the term ‘shipowner’ shall mean the owner, charterer, manager and operator of a seagoing ship.” Considering this difference, it could be deduced that the time charterer was carefully and intentionally avoided and excluded from the liable persons under the Bunker Convention.

This is agreeable considering the strict liability of the Shipowner under the Bunker Oil Convention and the Oil Pollution Act.¹⁹ It would be unfair for the time charterer to bear such strict liability despite the fact, under the charter terms, they do not have any right to take preventive measures against the oil pollution, which include, for example, appropriate training of the crews, proper maintenance of the ship and safe navigation with good seamanship.

Meanwhile, in Japanese maritime practice, particularly in the domestic coastal shipping industry, the word “operator” sometime implies “time charterer.” One possible reason for this is that the word “operator” has two separate meanings in Japan, one referring to the operator of the ship and the other to the operator of the ocean carriage service or the liner service operator, and in both cases, the name of the contract arranged for such service is “Operator Service Agreement.” According to this view, for the interpretation and application of the term operator under the Oil Pollution Act, it is necessary to examine whether the “operator” in question has a right, under the relevant contract with the owner of the ship, to control the navigation and management of the ship and is able to take preventive measures against the bunker oil spill incident. It should be noted that the time charterer normally does not have any such right under the time charter; hence, it is not appropriate to immediately interpret that the “operator,” the person with strict liability under the Oil Pollution Act, includes “time charterer.”

¹⁵ Article 1(2) of CLC92 states: “‘Owner’ means the person or persons registered as the owner of the ship or, in the absence of registration, the person or persons owning the ship. However in the case of a ship owned by a State and operated by a company which in that State is registered as the ship’s operator, ‘owner’ shall mean such company.”

¹⁶ Berlingieri, *supra* note 14, at 195-196.

¹⁷ *Id.*

¹⁸ The Protocol of 1996 to amend the Convention on Limitation of Liability for Maritime Claims, 1976.

¹⁹ See also Takashi Hakoi and others, *Senpaku Shototsu Hou*, at 293 (2012, Seibundou).

III. Right to Limit Liability for Bunker Oil Pollution Damage – Wind Power Generation Project

The other practical issue lies in the limitation of liability scheme which is in both the old and the amended Oil Pollution Act. These days, clean energy, such as solar power or wind power, is becoming more and more important in order to decrease Green House Gas emission, and in the maritime industry, wind power generation projects are in the center of attention. Various types of vessels such as self-elevating platform vessels (SEP vessel), construction support vessels (CSOV) or crew transfer vessels (CTV) are employed to support these projects. For the owners of such vessels and their insurers, the critical issue is how to limit the owner's exposure to risks such as claims against the owner for damages incurred by the charterer in relation to their property or project, which are huge and highly valued. A bunker oil spill could be the cause of such damages.

KNOCK for KNOCK liability regime is one of the measures applied to achieve the above goal, under which neither party is liable for the losses or damages arising from the other party's properties. However, an issue still remains for the owner. As seen in the broadly used form BIMCO WINDTIME, Article 17 (a), generally the owners' liability for bunker oil pollution damage is set widely, and not all the damages stipulated are covered by the KNOCK for KNOCK term:

17. Pollution

(a)... the Owners shall be liable for, and agree to indemnify, defend and hold harmless the Charterers against all claims, costs, expenses, actions, proceedings, suits, demands and liabilities whatsoever arising out of actual or threatened pollution damage and the cost of cleanup or control thereof arising from acts or omissions of the Owners or their personnel which cause or allow discharge, spills or leaks from the Vessel, except as may emanate from cargo thereon or therein.²⁰ (emphasis added)

Furthermore, in the EPC contract (a popular type of project construction agreement), the charterer normally agrees to pay the liquidated damages for the delay of the project due to the actions or the negligence of themselves or their subcontractor, who is the owner of the vessel. Therefore, once the bunker oil spill happens and causes a delay in the schedule of the projects, the owner is exposed to the risk of having to compensate for the liquidated damages that the charterer paid under the EPC contract, probably out of the scope of KNOCK for KNOCK term.

²⁰ BIMCO WINDTIME Part II.

Therefore, one of the solutions for the owner to deal with the above risk is to make a separate agreement with the charterers for exemption or exclusion from these liabilities, but this is not always possible.²¹ Then, the remaining way to mitigate such risk is to rely on the legislative limitation of liability under LLMC96 and the Limitation of Shipowner Liability Act,²² which is incorporated into the Oil Pollution Act. The issue here is whether the recourse claim from the charterer for the liquidated damages under the EPC contract falls in the scope of the claims that are subject to the limitation.

Article 2(1)(c) of LLMC96 states:

LLMC96 Article2

1. Subject to Articles 3 and 4 the following claims, whatever the basis of liability may be, shall be subject to limitation of liability:

...

(c) claims in respect of other loss resulting from infringement of rights **other than contractual rights**, occurring in direct connexion with the operation of the ship or salvage operations”

...

2. **Claims set out in paragraph 1 shall be subject to limitation of liability even if brought by way of recourse or for indemnity** under a contract or otherwise...

Article 3(1)(iii) of the Limitation of Shipowner Liability Act states:

Limitation of Shipowner Liability Act

(limitation of Shipowner Liability)

Article 3 (1) Shipowner, etc. and the Servants, etc. thereof may limit their liability for the following claims as provided for in this Act:

...

(iii) a claim other than as set forth in the preceding two items, which is based on damages resulting from an infringement of rights that occurs in direct connection with the operation of a Ship (other than a claim based on damages resulting from the loss of the Ship in question or damage thereto, and **other than a claim based on damages resulting from default on a contractual obligation**);

As above, both LLMC and Limitation of Shipowner Liability Act exclude

²¹ For example, Clause 16(b) of WINDTIME form provides the owner with an exclusion regarding the consequential damages but it is not that clear whether liquidated damage incurred by the charterer is also excluded under this clause.

²² Act on Limitation of Shipowner Liability (No. 94, 1975).

the “claims resulting from ...infringement of ...contractual right (LLM96, Article2,1(c))” and “claim ...based on damages resulting from default on a contractual obligation (Limitation of Shipowner Liability Act, Article3(1)(iii)).” The reason is that contractual claims such as the claim for an infringement of the right of conducting a business, such as a shop in the vessel, does not necessarily have the nature and character of a maritime claim.²³ If a recourse claim or an indemnification claim from the charterer against the owner in accordance with Article17(a) of WINDTIME is a “claim ...based on damages resulting from default on a contractual obligation” under Article 3(1)(iii) of the Limitation of Shipowner Liability Act, it would be excluded from the scope of the claims subject to limitation.

However, Article 2(2) of LLMC96 stipulates that a claim is subject to the limitation “even if brought by way of recourse or for indemnity.” The meaning of this provision is explained as the nature and the character of the claim is remained and not changed even if it is brought in the form of recourse claim or indemnity claim.²⁴ On this ground, it could also be considered that, the recourse claim or indemnity claim on the basis of an infringement of the right to use wind turbines due to an oil spill accident would be subject to the limitation of liability regardless of whether or not such claim arises from the terms of the charter between the charterer and the owner.

Under Japanese Limitation of Shipowner Liability Act, there is no provision similar to Article 2(2) of LLMC96; however, it would be unfair if the owner were to lose their right to limit the liability due to the sole reason that the claim happens to arise from the contract between the owner and the charterer. In the other words, the right to limit the liability should not be lost only because the claim is brought in the form of a recourse claim or an indemnity claim.

As for the recourse claims for the liquidated damages incurred by the charterer arising from clause 17(1) of WINDTIME, the right to limit the liability should be recognised such liquidated damage could count as genuine damages from the loss of usage of the wind generators that would otherwise be available had the oil spill not occurred.

IV. Conclusion

International conventions such as CLC92, the Bunker convention, LLMC and the Nairobi Convention are now incorporated into Japanese law, but there still remain issues of interpretation “who is liable person” or “whether right to

²³ T Inaba and I Terada, *Senpakunoshoyushatouno Sekininno Seigennikansuru Houritsuno Kaisetsu*, at 98 (1989, Housoukai).

²⁴ Patrick Griggs and others, *Limitation of Liability for Maritime Claims Forth Edition* (2004, Informa Law).

limit its liability would be available or not in particular circumstances.” Establishing globally accepted uniform interpretations is very important for the stakeholders in maritime industry who need to assess the legal and business risks and allocate those risks among the relevant parties with appropriate consideration. Therefore, further academic discussion is necessary, and hopefully such discussion will be led by Asia, a region with prosperous maritime industries.

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