



Impacts of Emerging Technologies on Multinational Enterprises: Legal Challenges and Opportunities*

*Gelişen Teknolojilerin Çok Uluslu Şirketler Üzerindeki Etkileri: Hukuki
Zorluklar ve Fırsatlar*

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Abstract

This paper examines the application of new technologies in addressing the conventional legal challenges encountered by multinational companies due to the principles of company law. These challenges often give rise to concerns regarding liability in the presence of human rights violations and environmental violations caused by multinational enterprises (MNEs).

Governments worldwide are responding by crafting domestic and international regulations aimed at addressing MNEs' transgressions, particularly in the domains of environmental protection and human rights. The European Commission's proposal for a Corporate Sustainability Due Diligence Directive (CSDDD) is a notable example. It mandates comprehensive due diligence measures that transcend geographical boundaries, encompassing every facet of a company's value chain. Nevertheless, while significant, the directive grapples with criticisms surrounding liability resolution.

This article takes an innovative approach, seeking solutions within technology. It commences by introducing MNEs elucidating their operation domains and contributions to the global economy.

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Subsequently, it investigates environmental and human rights transgressions committed by MNEs, unraveling the enduring responsibilities and liabilities inherent to their operations. In doing so, it explores an alternative path forward, one that harnesses technology's transformative potential to address the complex challenges MNEs and countries face in an evolving global landscape.

Keyword: Multinational Enterprises (MNEs), Emerging Technologies, Sustainability Due Diligence Directive, Blockchain, Artificial Intelligence

Öz

Bu makale, çok uluslu şirketlerin (MNE'ler) geleneksel şirketler hukuku prensipleri nedeniyle karşılaştığı hukuki zorlukların üstesinden gelmede yeni teknolojilerin uygulanmasının etkinliğini incelemektedir. Şirketlerin sorumlu tutulması konusunda karşılaşılan zorluklar genellikle çok uluslu şirketlerin insan hakları ihlalleri ve çevresel ihlalleri konusunda sorumluluklarıyla ilgili endişelere neden olmaktadır.

Dünya genelindeki hükümetler, sorumluluk sorununu aşabilmek için özellikle çevre koruması ve insan hakları alanlarındaki çok uluslu şirketlerin ihlalleri ile başa çıkmayı amaçlayan iç düzenlemeler ve uluslararası düzenlemeler hazırlamaktadır. Avrupa Komisyonu'nun Kurumsal Sürdürülebilirlik Yükümlülüklerine İlişkin Tüzük (CSDDD) önerisi bu konuda dikkate değer bir örnektir. Bu düzenleme bir şirketin değer zincirinin her yönünü kapsayan coğrafi sınırları aşan kapsamlı önleyici tedbirler yükümlülüğünü zorunlu kılmaktadır.

Bu makale, çok uluslu şirketlerin sorumlu tutulmasına yönelik sorunlara gelişen teknolojilerin yardımıyla çözümler arayarak yenilikçi bir yaklaşım benimsemektedir. Makale çok uluslu şirketleri tanıtarak başlamakta, işletim alanlarını ve küresel ekonomiye katkılarını açıklamaktadır. Devamında, çok uluslu şirketler tarafından işlenen çevresel ihlalleri ve insan hakları ihlallerini araştırarak bu eylemlerden dolayı sürekli sorumlulukları ve yükümlülükleri ortaya çıkarır. Bu süreçte, çok uluslu şirketler ve ülkelerin küresel peyzajda karşılaştığı zorlukları ele almak için teknolojinin dönüştürücü potansiyelini kullanma fikri makalede değerlendirilmiştir.

Anahtar Kelimeler: Çok Uluslu Şirketler, Gelişen Teknolojiler, Sürdürülebilirlik Yükümlülüklerine İlişkin Tüzük, Blokzincir, Yapay Zeka

INTRODUCTION

Multinational companies (MNEs) are economic structures established beyond national borders that have directed global commercial activities for centuries. MNEs are structures that bring together many different mechanisms such as "'home country' (where they originate), 'host countries' (where they expand their commercial activities) and 'third countries' (countries to which the contribution spreads)". The coming together of these structures can become complicated within the framework

of corporate law rules, such as capital companies must have legal personality. Depending on the requirements of the country's laws, MNEs may have to open branches or establish subsidiary companies in the countries where they operate, as well as in the leading country where they are headquartered. Considering that each of these company structures is a company with legal entities established according to different procedures according to the laws of different countries, the complex structure of MNEs can be understood more clearly.

In order to operate in different countries, MNEs must follow official procedures and establish subsidiary companies or branches in accordance with the laws of those countries. The company established in each different country will have a separate legal entity. It will be subject to legal rules and procedures on establishment, taxation, operation and competition rules. In recent years, the situation has become more complex as technology has gained momentum and its use by MNEs and even technology companies have joined the game. The confusion begins with the fact that while companies develop and change shape day by day with the help of technology, the law applied to companies remains the same within the framework of fundamental legal principles. In particular, easy transfer of information and remote management opportunities have significantly contributed to MNEs and facilitated their operation. With the increasing use of blockchain technology, including DLT (distributed ledger technology), smart contracts and DAOs (decentralized autonomous organizations) in international companies, it is seen that the rules should be reshaped for MNEs and new approaches should be taken into account in this regard. Countries are making domestic and international regulations to provide solutions to MNEs' violations, such as environmental and human rights. The European Commission's proposal for a CSDDD is the closest example of this. Companies must implement due diligence measures to effectively manage and mitigate any harmful consequences arising from their activities, particularly concerning human rights and the environment. These measures should encompass all stages of the company's value chains, regardless of geographical location. However, although the directive is an important effort and contributes, it still cannot respond to criticism in resolving liability issues. This article takes a different perspective on the events approaching and seeks a technological solution. For this purpose, the article will first introduce MNEs and provide information about their fields of activity and contributions to the global economy. Then, the environmental and human rights violations

committed by MNEs will be examined and the chronic responsibilities and liabilities of MNEs will be examined.

I.OVERVIEW OF MULTINATIONAL ENTERPRISES

Due to the effect of massive developments in technology and globalization in recent years, companies have become more interested in foreign markets.¹ To a certain extent, the presence of trade barriers across nations has significantly diminished, leading several governments to adopt market liberalization measures that encompass the provision of substantial and targeted investment incentives aimed at attracting potential investors. This demand and willingness of states to attract investors has led to the need for new policies in this area. As a response to this need, the activities of MNEs increased constantly and the activities of MNEs have attracted attention.² The following words Muchlinski used at the beginning of his book in 2007 are still valid; “*Multinational enterprises (MNEs) are perhaps the most talked about forms of business association in the contemporary “globalizing” world and economy.*”³ MNEs can be thought of as both the cause and the result of the statement that the world is becoming a global single community day by day.⁴ MNEs provide value by internalizing market interactions across national borders.⁵ Through their subsidiaries, MNEs conduct business in multiple countries and, consequently, in various legal systems.⁶ Likewise, the financial resources generated as a result of the use of multinational enterprises in commercial affairs and the technological developments facilitated and increased by the efficiency of these enterprises contribute not only to the host country where MNEs are established, but also to other countries, whether they operate or not. The positive impact of MNEs on international business and development must be considered. The significance of MNEs in

¹ The Organization for Economic Cooperation and Development OECD, *Multinational Enterprises In The Global Economy: Heavily Debated But Hardly Measured* (OECD, 2018); International Labour Organization ILO, *Statistics on the Contribution of Multinational Enterprises to Inclusive and Sustainable Economic Growth, Full and Productive Employment and Decent Work for All* (2022).

² Koen De Backer et al., ‘Multinational Enterprises In The Global Economy | VOX, CEPR Policy Portal’, *VoxEU*, 19 July 2023.

³ Peter Muchlinski, *Multinational Enterprises and the Law* (Oxford University Press, 2007), 3.

⁴ Justine Kyove et al., ‘Globalization Impact on Multinational Enterprises’, *World 2/2* (15 April 2021), 216–230.

⁵ Klaus E. Meyer et al., ‘Multinational Enterprises and Local Contexts: The Opportunities and Challenges of Multiple Embeddedness’, *Journal of Management Studies* 48/2 (March 2011), 247.

⁶ Wenbin Zhang et al., ‘Blockchain-Based Distributed Compliance in Multinational Corporations’ Cross-Border Intercompany Transactions: A New Model for Distributed Compliance Across Subsidiaries in Different Jurisdictions’, *Advances in Intelligent Systems and Computing* (Future of Information and Communication Conference, Singapore, 2018), 509.

economic growth and international relations, particularly in emerging nations, was highlighted in the preamble to a United Nations study published in 1973 titled *Multinational Companies in World Development*.⁷

MNEs are considered by many to contribute to economic growth and employment through the creation of new job opportunities, investment in advanced technologies, and facilitation of host nations' integration into global value chains.⁸ Through international trade and investment, MNEs have strengthened and deepened relations between countries and regions. These actions help both the nation in which the investment is made and the country in which the investment is made. MNEs will expand their profits if they supply consumers with the goods and services they desire at competitive pricing and a reasonable return on investment. MNEs have a significant role in facilitating the effective allocation of financial resources, technological advancements, human capital, and natural resources. Additionally, they foster technology transfer across regions and facilitate the development of context-specific technologies.⁹

A multinational enterprise is described as "any company which owns, controls and manages income-generating assets in more than one country".¹⁰ In summary, MNEs typically engage in operations across numerous nations by establishing a considerable number of subsidiaries, often ranging from hundreds to even thousands. In order to discuss the presence of an MNE, the corporation must have subsidiaries created in regions or countries outside of its primary headquarters' location. The resulting organizational framework consists of a parent country where the company is founded and governed in accordance with the regulations of that jurisdiction. Additionally, there are subsidiaries established in locations where the company conducts its operational activities. One of the primary aspects that renders MNEs intriguing for legal professionals is the requirement for their subsidiaries to adhere to the legal frameworks of the

⁷ United Nations UN, *Multinational Corporations in World Development* (New York: UNDESA—United Nations Department of Economic and Social Affairs, 1973).

⁸ De Backer et al., 'Multinational Enterprises In The Global Economy | VOX, CEPR Policy Portal'.

⁹ The Organization for Economic Cooperation and Development OECD, *Annual Report on the OECD Guidelines for Multinational Enterprises* (OECD, 2020).

¹⁰ John H. Dunning - Sarianna M. Lundan, *Multinational Enterprises and the Global Economy* (Cheltenham, UK ; Northampton, MA: Edward Elgar, 2008), 3; Neil Hood - Stephen Young, *The Economics of Multinational Enterprise* (Longman, 1979); Georgios I. Zekos, *MNEs in the 21st Century* (Nova Publishers, 2015), 1.

respective countries in which they operate while also conforming to the internal laws of the MNE.¹¹ The presence of multiple legal entities and legal systems accounts for this phenomenon. This analysis will explore the potential challenges that arise in commercial contexts when attempting to address differences between MNEs and the countries in which they operate. Specifically, it will be demonstrated that while these differences may be theoretically surmountable, they can lead to legal impasses in the face of issues such as tort or breach of obligation. Consequently, individuals affected by the actions of MNEs may find themselves victimized within this legal framework.

II. HISTORICAL CONTEXT OF MULTINATIONAL ENTERPRISES

In contemporary times, scholars have undertaken an analysis of the notion of companies within the context of the ongoing discourse surrounding the attribution of personhood to artificial intelligence. Indeed, through the enactment of laws, an organization is bestowed with legal personality and assumes a formal framework encompassing both rights and responsibilities. In an apparent demonstration of supporting this contention, the US Supreme Court in its 1819 decision in *Trustees of Dartmouth Coll. v. Woodward*¹² ruled that corporations are actually like robots, stating that "A corporation is an artificial being, invisible, intangible, and existing only in contemplation of law." Companies have a legally acknowledged legal personality, as bestowed upon them by the legal framework, and their existence is contingent upon the parameters established by the law.¹³

Upon examination of MNEs, it becomes evident that a far more comprehensive and intricate organizational framework has evolved, surpassing the confines of conventional corporate logic. In contrast to conventional corporations, here there is an organizational framework that is not ruled by a sole legislator and is subject to multiple legal systems. The organizational framework in question comprises various subsidiary entities consolidated under the central administration of a parent business, akin to a unified skeleton structure. Hence, the legislator assigns distinct rights and obligations to each firm structure, namely the parent company and its subsidiaries. Due to the

¹¹ Zekos, *MNEs in the 21st Century*, 1.

¹² The Supreme Court of the United States (SCOTUS), *Trustees of Dartmouth Coll. v. Woodward*, 17 U.S.518,636 (1819).

¹³ Mihailis Diamantis, 'Algorithms Acting Badly: A Solution from Corporate Law', *SSRN Electronic Journal* 89/4 (2020), 801–856.

distinct legal personalities possessed by each entity, they can independently exercise rights and assume financial obligations. Once more, in light of distinct legal entities, in adherence to the principle of limited liability,¹⁴ a fundamental tenet of corporate law, the operations of each corporation will only pertain to itself, and its obligations and entitlements will originate autonomously. Company laws have historically been based on separate legal personality¹⁵ in civil and common law systems. This gives companies greater freedom to structure their operations and encourages them to find new opportunities.¹⁶ While the principle of limited liability in the traditional company approach is the most critical factor encouraging shareholders to invest in companies, the situation differs for MNEs. Therefore, the principle gives rise to occasional issues wherein subsidiary corporations evade accountability towards the parent company, while the parent company refrains from assuming responsibility for the subsidiary company.

The issue mentioned above, stemming from the fundamental tenets of corporate law, can be effectively exploited by multinational enterprises. So, although MNEs have a high potential, they also include some challenges. In this case, the problems raised by the report¹⁷ and the main challenges it outlines are still up-to-date on many issues.¹⁸ Furthermore, MNEs have gained a unique legal and political position globally since neither political nor legal advancements can keep up with this rapid self-transformation in the structure of company groups. Indeed, it is imperative to acknowledge that MNEs presently hold a prominent position as significant global actors capable of rivalling nations. This is primarily due to their profound impact on the world, facilitated by the pervasive effect of technology and even the substantial role played by technology corporations.¹⁹

¹⁴ Peter Muchlinski, 'Limited Liability and Multinational Enterprises: A Case for Reform?', *Cambridge Journal of Economics*, 34 (2010), 915-928.

¹⁵ Numerous jurisdictions have observed the advantageous implications for businesses stemming from the legal concept of limited liability protection, as established in the landmark case of *Salomon v A Salomon and Co Ltd* and other similar decisions.

¹⁶ Lecia Vicente, 'The Hohfeldian Concept of Share in Limited Liability Companies: A View from the Common and Civil Law Traditions', *Tul. Eur. & Civ. L.F.* 33 (2018), 41-74; Shabnsm Ishaque, 'The Liability of Parent Companies for the Obligations of Their Subsidiaries in the Context of Multinational Groups', *PLR* 5 (2010), 137.

¹⁷ UN, *Multinational Corporations in World Development*.

¹⁸ For more information see Rajneesh Narula - André Pineli, 'Improving the developmental impact of multinational enterprises: policy and research challenges' *Economia e Politica Industriale* 46 (2019), 2.

¹⁹ ILO, *Statistics on the Contribution of Multinational Enterprises to Inclusive and Sustainable Economic Growth, Full and Productive Employment and Decent Work for All*; Javier Cravino – Andrei A. Levchenko, 'Multinational Firms and International Business Cycle Transmission' *The Quarterly Journal of Economics* 132/2 (2017), 921-962; Jörn Kleinert

Undoubtedly, in the contemporary global landscape, the most convenient method of accessing services on an international level is by availing oneself of the services offered by MNEs. A nation that implements protectionist policies by restricting the entry and operation of MNEs would have significant challenges in achieving competitiveness in the global arena. Given technological advancements, it is impractical to reject the entry of an MNE specializing in marketing technological products within a country and attempt to independently replicate what has already been discovered to achieve the same level of service. MNEs provide a distinctive value proposition by mitigating the loss of time and resources, which is particularly beneficial for developing nations, and their financial incentives. Developing or undeveloped nations are actively endeavoring to not only deliver essential services but also to prioritize investment inside their respective regions.²⁰ The presence of MNEs encompasses more than simply staying abreast of advancements and progress inside a nation. Additionally, it presents a potential avenue for the establishment of novel employment sectors, the recruitment of laborers, and the augmentation of tax proceeds. This is partially attributed to conventional models perceiving multinational firms as an appropriate organizational framework for leveraging firm-specific advantages across national boundaries, which are rooted in assets such as technology, branding, marketing, and managerial expertise.²¹

Naturally, the viewpoint and advancements about MNEs are only sometimes characterized by seamless or flawless outcomes. In the subsequent section, it will be elucidated that while MNEs present considerable prospects for host countries, they can engender various controversies, particularly in less developed nations. These controversies encompass issues such as child labor, employment of workers without adequate safety measures, laboring in demanding shifts for meager remuneration, and environmental degradation due to the neglect or disregard of necessary precautions.²² Furthermore, due to its extensive global influence, it possesses the capability to

et al., 'The Few Leading the Many: Foreign Affiliates and Business Cycle Comovement' *American Economic Journal: Macroeconomics* 7/4 (2015), 134-59.

²⁰ Nichola Lowe - Martin Kenney, 'Foreign Investment and The Global Geography of Production: Why the Mexican Consumer Electronics Industry Failed', *World Development* 27 (1999); Jennifer Oetzel - Jonathan P. Doh, 'MNEs and development: a review and reconceptualization', *Journal of World Business* 44 (2009), 108.

²¹ Roger Strange, 'MNE theory and the importance of corporate governance', Academy of International Business (AIB) 2016 Annual Meeting, 27-30 Jun 2016, New Orleans.

²² Oetzel - Doh, 'MNEs and development: a review and reconceptualization', 108; Jennifer Clapp - Peter Dauvergne, *Paths to a Green World: The Political Economy of the Global Environment*, (The MIT Press, 2005).

inflict harm onto individuals who are not involved in any wrongdoing while failing to hold accountable those responsible for these illicit activities. More recently, they have been accused of even undermining democracy and fundamental human rights.²³

As early as 1651, Hobbes²⁴ stated that he saw the rise of corporations as a threat to states. At the point we have reached today, it is seen that massive companies such as Apple, Amazon, Google, Meta are trying to establish their own social structures beyond the states. So much so that today, the turnover and profits of these companies are higher than the economic size of many nation-states in the international system. Moreover, the market value and the volume of their budgets of these companies, which operate in almost every field, from social media applications to artificial intelligence and cloud technologies, from e-commerce to smartphones, are increasing day by day.²⁵ For instance, Apple, Microsoft, Amazon, and Google have achieved market valuations above \$1.5 trillion through extensive market penetration, strategic diversification, and the transformation of their products into service-oriented offerings. Only seven nations in the world have a GDP greater than Apple's market capitalization.²⁶ This also shows that new world order is being established. If Hobbes²⁷ were still living today, he could have argued more strongly that MNEs pose a severe threat to governments. However, it is essential to note that MNEs are a phenomenon of the modern world,²⁸ and if corporations use this power for the good of the planet, it can benefit humanity's future. MNEs encounter various economic and legal challenges, which they often attempt to mitigate through their political and social clout as well as their economic prowess. However, when

²³ John Gerard Ruggie, *Just Business: Multinational Corporations and Human Rights* (Norton Global Ethics Series), (W. W. Norton & Company, 2013); Stefan Zagelmeyer – Rudolf R. Sinkovics, 'MNEs, Human Rights and the SDGs – the Moderating Role of Business and Human Rights Governance', *Transnational Corporations* 26/33 (2019); Huang D, 'Reasons and Suggestions of Human Rights Violations Committed by Mnes' *Highlights in Business, Economics and Management* 7/108 (2023); Duan Yunhan - Jiang Wenjin, 'Research on the Human Rights Responsibility of Mnes', *Advances in Social Science, Education and Humanities Research* 615 (2021), 1331-1337.

²⁴ Thomas Hobbes, *Leviathan* (1651) cited in Jennifer Hill, 'Changes in the Role of the Shareholder' in Ross Grantham and Charlie Rickett (eds), *Corporate Personality in the 20th Century* (Oxford: Hart, 1998).

²⁵ Omri Wallach, 'The World's Tech Giants, Compared to the Size of Economies', *Visual Capitalist*, 2021.

²⁶ Wallach, 'The World's Tech Giants, Compared to the Size of Economies'.

²⁷ Hobbes, *Leviathan*.

²⁸ For more information see Muzaffer Eroğlu, *Multinational Enterprises and Tort Liabilities*, (Edward Elgar 2008), 2.

appropriately harnessed, MNEs can swiftly and durably contribute to humanity's progress in digitalization, climate change, human rights, and sustainability.²⁹

As a result, MNEs are organizations that can have a bilateral effect. Countries that desired to assess the positive economic effects of MNEs had to provide some economic and legal privileges and exceptions. At the same time, they took steps to prevent environmental and human rights breaches. Therefore, MNEs have developed great economic strength, are one of the world's policy-making centres³⁰ and have been researched in numerous dimensions for years.

III. CHALLENGES ASSOCIATED WITH THE ACTIVITIES OF MULTINATIONAL ENTERPRISES

Governments, employers, employees, and their associated organizations have shown a growing interest in the significance of MNEs due to their crucial involvement in the economies of many nations and their impact on international economic relations. MNEs provide advantages to their home and host countries by facilitating the more effective utilization of capital, technology, and labour through foreign direct investment, trade, and other mechanisms.³¹ MNEs have the potential to make substantial contributions to the enhancement of economic and social well-being within the context of sustainable development policies established by the state. They can elevate living standards and fulfill fundamental requirements while directly and indirectly generating employment opportunities. Furthermore, MNEs can facilitate the advancement of local conditions by transferring technology and fostering the development of innovative technologies.³² Conversely, MNEs may use their ability to organize their operations beyond national boundaries, leading to economic power abuse and conflicts with national policy goals and worker welfare. Moreover, the intricacy of MNEs and the challenge of completely understanding their diverse

²⁹ Anshuman Khare et al., *Sustainable International Business Models in a Digitally Transforming World*, (Routledge 2022); Ibrahim Alshbili et al., 'Social and Environmental Reporting, Sustainable Development and Institutional Voids: Evidence from A Developing Country' *Corporate Social Responsibility Environmental Management* 28 (2021).

³⁰ Alshbili et al., 'Social and Environmental Reporting, Sustainable Development and Institutional Voids: Evidence From A Developing Country'.

³¹ International Labour Organization ILO, *Tripartite Declaration of Principles Concerning Multinational Enterprises and Social Policy* (Geneva, 2022).

³² The Organization for Economic Cooperation and Development OECD, *OECD Guidelines for Multinational Enterprises, 2011 Edition* (OECD, 2011).

structures, operations, and policies can give rise to apprehension in both domestic and foreign nations.³³

Today, the activities of MNEs have many aspects that touch the public sphere, the most important of which is in the field of basic rights such as human and environmental rights. When it comes to the interference of these activities with human rights, an international legal mechanism can only come into play if it is accepted that companies have certain rights and obligations in terms of international law.³⁴ The businesses are subject to domestic corporate regulations because MNEs prefer to engage through subsidiaries in the host states. However, the issue is whose legislation they are subject to when working via their companies across the world and who will be held accountable for their actions.³⁵ Indeed, the effectiveness of domestic law as a regulatory framework for MNEs is optional and sometimes even irrelevant for MNEs.³⁶ However, the fundamental reason why governments cannot be effective in this area is that laws are only implemented within the states' geographical authority.³⁷

As a result, I support the claim that the states are constantly searching for a solution to the problems stemming from MNEs.³⁸ Therefore, the legal obligation of MNEs concerning the environment and human rights, which are not new but continuous issues, has to be addressed.³⁹

IV. THE ROLE OF MULTINATIONAL ENTERPRISES IN THE CONTEMPORARY SUSTAINABILITY AGENDA

Studying MNEs' strategic behaviour concerning social issues such as human rights and climate change and their role in promoting or inhibiting sustainable development is now a hot topic for

³³ OECD, *OECD Guidelines for Multinational Enterprises, 2011 Edition*.

³⁴ Merve İspirli Armağan, *Uluslararası Hukukta Çok Uluslu Şirketler ve İnsan Hakları Yükümlülükleri* (İstanbul: İstanbul Üniversitesi, Sosyal Bilimler Enstitüsü, Yüksek Lisans Tezi, 2019).

³⁵ Hasan Kayınet, 'Multinational Corporate Entities: Is Corporate Social Responsibility An Inducement?', *Ankara Bar Review* 2/79 (2012).

³⁶ John Ruggie, 'Protect, Respect and Remedy: a Framework for Business and Human Rights, Report of the Special Representative of the Secretary-General on the issue of human rights transnational corporations and other business enterprises' *U.N. Human Rights Council 8th Session, Agenda item 3 A/HRC/8/5* (7 April 2008), 3.

³⁷ Larry Catá Backer, 'Regulating Multinational Corporations: Trends, Challenges, and Opportunities' *The Brown Journal of World Affairs* 22/1 (2015), 156.

³⁸ Backer, 'Regulating Multinational Corporations: Trends, Challenges, and Opportunities', 156.

³⁹ Peter Muchlinski, *Multinational Enterprises and the Law*, (Oxford University Press 2021), 102.

academia.⁴⁰ Today, especially since the concept of corporate social responsibility was established in company law studies, a company's performance is measured not only in terms of profits but also in terms of how much it contributes to the society in which it operates, as well as the benefits it provides to human rights and the environment.⁴¹

New approaches aligned with sustainability goals have aimed to produce responsible organizations that respect human rights, the environment and society, intending to consider the interests of other stakeholders and their shareholders in their operations and strategic choices. Aside from financial performance, sustainable understanding firms necessitate evaluating and reporting on their policies they pursue on major environmental issues such as pollution, climate change, global warming and also social injustice and human rights breaches.⁴²

Sustainable and socially responsible growth requires sound management policies for environmental and social risks, which is increasingly recognized as both a corporate obligation and a commercial opportunity. In both cases, MNEs have a role to play.⁴³ According to the OECD Guidelines for Multinational Enterprises ("the Guidelines"), company directors should pay close attention to environmental challenges in their long-term plans and day-to-day operations.⁴⁴ ⁴⁵ For this reason, companies systematize their sensitivity to human rights and environmental issues

⁴⁰ Silvester Ivanaj et al., 'MNEs and climate change: Implications for future research', *Journal of Cleaner Production*, 160 (2017), 1-7; Jonatan Pinkse - Ans Kolk, 'Multinational enterprises and climate change: Exploring institutional failures and embeddedness', *Journal of International Business Studies* 43 (2012), 334.

⁴¹ Hasan Pulaşlı, 'Kurumsal Sosyal Sorumluluk Bağlamında Uluslararası İnsan Hakları ve Çevre Standartlarının Çok Uluslu Şirketlerin Merkez Yönetim Organının Hukuki Sorumluluğuna Etkisi' *Banka ve Ticaret Hukuku Dergisi* 36/4 (2020), 5-37.

⁴² Hatice Kübra Kandemir, 'Sürdürülebilir Şirketler ve Hukuki Çerçevesi', *İstanbul Ticaret Üniversitesi Sosyal Bilimler Dergisi* 20/41 (2021), 856.

⁴³ The Organization for Economic Cooperation and Development OECD, *Environment and the OECD Guidelines for Multinational Enterprises: Corporate Tools and Approaches* (Accessed 3 August 2023). The study of multinational corporations' strategic behaviour in relation to climate change, as well as the role they play in promoting or hindering sustainable development, is a popular topic in academic circles. See Vera Ivanaj et al., 'Understanding MNEs' attitudes towards CSR: a literature review and research agenda', *Rev. Org. Responsab* 8/2 (2013), 15-30; Andreas Schotter – Michael Evan Goodsite, 'Interdisciplinary perspectives on competitive climate strategy in multinational corporations' *Thunderbird Int. Bus. Rev.* 55/6 (2013), 629-632; Burkard Eberlein - Dirk Matten, 'Business responses to climate change regulation in Canada and Germany: lessons for MNCs from emerging economies' *J. Bus. Ethics* 86/2 (2009), 241-255.

⁴⁴ OECD, *Environment and the OECD Guidelines for Multinational Enterprises: Corporate Tools and Approaches*.

⁴⁵ (Oecd.org) <<https://www.oecd.org/env/34992954.pdf>> accessed 3 August 2023.

today and benefit from this in public relations.⁴⁶ Starbucks,⁴⁷ for example, has developed an internal program to demonstrate to customers that employees and the environment are not damaged throughout the manufacturing process. It has made information about the program available on its website.⁴⁸ Similarly, many corporations publish their operations following the corporate social responsibility idea, making them available to customers for their knowledge. Even companies with a dismal track record in terms of human rights, such as Shell⁴⁹ and Total,⁵⁰ produce reports nowadays under the guise of sustainability or corporate social responsibility.⁵¹

While there is a big concern related to protecting the environment and human rights fed by sustainability supporters, according to most company law regulations, companies are neither obligated nor encouraged to perform socially or ecologically responsible.⁵² There are environmental laws and human rights regulations for the protection of the environment and human rights across the world. However, due to separate legal personality, the obligation falls to specific corporations rather than whole enterprises.

As commonly accepted, companies are enterprises that have formed intending to maximize profits. Although sustainability policies are essential for companies today and efforts are made to comply with these policies, many companies may act by considering the cost of unlawful behaviour, especially against the benefits obtained by MNEs' compliance with the law. There are several examples of this circumstance. However, in particular, it can be presented as a recent and good example that the German automaker Volkswagen has considered this cost by considering the profit it will make from the sales it will make in the American diesel vehicle market in return for violating the mandatory emission rules.⁵³ Such problems have been seen for years and brought to

⁴⁶ Ralph G. Steinhardt, 'Soft Law, Hard Markets: Comparative Self-Interest and the Emergence of Human Rights Responsibilities for Multinational Corporations', *Brook. J. Int'l L.* 33 (2008), 936.

⁴⁷ 'Starbucks C.A.F.E. Practices', *Scsglobalservices*, 2019.

⁴⁸ Merve İspirli Armağan, 'Uluslararası Hukukta Çok Uluslu Şirketler ve İnsan Hakları Yükümlülükleri', (İstanbul: İstanbul Üniversitesi, Sosyal Bilimler Enstitüsü, Yüksek Lisans Tezi, 2019).

⁴⁹ 'Shell Sustainability Report 2020 – Home' (Reports.shell.com, 2021) <<https://reports.shell.com/sustainability-report/2022/>> accessed 18 September 2023.

⁵⁰ 'Reporting' (Sustainable Performance, 2021) <<https://sustainable-performance.totalenergies.com/en/reporting>> accessed 18 September 2023.

⁵¹ Armağan, 'Uluslararası Hukukta Çok Uluslu Şirketler Ve İnsan Hakları Yükümlülükleri'.

⁵² See Michael C. Jensen, 'Value Maximization, Stakeholder Theory, and the Corporate Objective Function', *Business Ethics Quarterly* 12/2 (2002), 235-256; Kandemir, 'Sürdürülebilir Şirketler ve Hukuki Çerçevesi', 856.

⁵³ Russell Hotten, 'Volkswagen: The Scandal Explained' (BBC News, 2015) <<https://www.bbc.com/news/business-34324772>> accessed 23 August 2023; Kandemir, 'Sürdürülebilir Şirketler ve Hukuki Çerçevesi', 856.

the courts and each jurisdiction handled it differently, and no single liability is applied to WW Groups. Thus, in some countries, victims are compensated well, while in others, they are not compensated.

On November 13, 2003, the vessel known as The Prestige, specifically an oil tanker, experienced a fracture in its stern due to powerful oceanic waves near the Spanish coastline. Within a span of seven days, the entirety of the vessel descended to the depths of the water, resulting in the release of approximately 64,000 metric tons of oil into the Atlantic water.⁵⁴ The calamity resulted in the contamination of about 2,000 miles of coastal areas, leading to the demise of an estimated 300,000 avian species and causing significant disruption to the fishing industry in Spain and Portugal. As a consequence, all fishing operations in the affected region were suspended for a duration of six months.⁵⁵ As mentioned earlier, the spill remains one of the most severe environmental catastrophes in the recorded history of both Spain and Portugal. The genuine discourse surrounding this incident stems from the consequences and remediation efforts following the catastrophe.⁵⁶ The damage caused by the spill cost the Spanish government \$4 billion to repair. Besides, as per the WWF report, the spill's harm to fishing and allied economic sectors, tourism, and natural heritage over 3,000 kilometres of coastline might endure for over a decade and cost €5 billion, with society bearing 97.5 per cent of the cost. Approximately 30,000 persons employed in the fishing and shellfish industries have been adversely impacted.⁵⁷

However, only \$25 million was paid by the London Steamship Owner's Mutual Association, the tanker's insurance company, while the International Oil Pollution Compensation Fund paid \$224.8 million. As can be seen, Spain bore the brunt of the blame for the spill's consequences. Except for a small portion of a settlement, the private firms implicated in the oil spill, comprising

⁵⁴ Sonia Castanedo et al., 'The Prestige Oil Spill in Cantabria (Bay of Biscay). Part I: Operational Forecasting System for Quick Response, Risk Assessment, and Protection of Natural Resources', *Journal of Coastal Research* 22, (2006), 1474-1489.

⁵⁵ Carlos F. Balseiro et al., 'Tracking the Prestige Oil Spill: An Operational Experience In Simulation At Meteogalicia', *Weather* 58 (2003).

⁵⁶ Thomas Golson, 'Multinational Corporations and Liability According to International Law – Writing Anthology' (Central.edu, 2022) <<https://central.edu/writing-anthology/2019/05/31/multinational-corporations-and-liability-according-to-international-law/>> accessed 18 September 2023.

⁵⁷ 'The Prestige: One Year On, A Continuing Disaster' (wwfpanda.org, 2003) <https://wwf.panda.org/wwf_news/?9623/The-IPrestigel-one-year-on-a-continuing-disaster> accessed 18 September 2023.

multinational enterprises from Liberia, Greece, Switzerland, Luxembourg, and Gibraltar, did not bear the financial responsibility for the clean-up efforts or the provision of compensation to affected individuals.⁵⁸ Furthermore, despite being controlled by the Russian Alpha Group, one of the world's wealthiest corporations at the time, the Swiss-based Crown Resources Inc., which held the oil transported by Prestige, was sold and dissolved without recompense. After all of this, the Spanish government launched a case against the American Maritime Bureau, which had cleared the tanker's seaworthiness under public pressure. The lawsuit,⁵⁹ however, was dismissed since it did not fall under the jurisdiction of the United States.⁶⁰ This is only one example of how difficult it is to hold MNEs legally liable for the harm they have created.⁶¹

V. CURRENT ADVANCEMENTS IN THE FIELD OF MULTINATIONAL ENTERPRISES

There are two significant issues with MNEs that have come to light. The first is that international corporations are founded on local registration, and the second is that subsidiaries of MNEs are not accessible to move around. When we examine the origins of company law, we see that no corporation has absolute freedom of movement. In other words, if the company wants to do business in a nation other than its home country and does not choose a channel such as a distributorship, it must form a subsidiary.

When this subsidiary company is formed, the parent company has a distinct legal personality and the capital structure may create doubt about the liability regime between the two. For example, Shell relocated its headquarters from England to the Netherlands and then back to England to avoid paying taxes, which are also a responsibility.⁶² The two nations' different legal systems and jurisdictions necessitated the transfer of the company's headquarters. Again, a similar scenario was seen for British businesses operating in Germany after Brexit.⁶³ A company is subject to the rules

⁵⁸ Thomas Golson, 'Multinational Corporations and Liability According to International Law – Writing Anthology'.

⁵⁹ 'Reino De España V. American Bureau of Shipping, Inc., 729 F. Supp. 2D 635' (Casetext.com, 2010) <<https://casetext.com/case/reino-de-espana-v-american-bureau-of-shipping>> accessed 18 September 2023.

⁶⁰ Thomas Golson, 'Multinational Corporations and Liability According to International Law – Writing Anthology'.

⁶¹ Robin F. Hansen, 'Multinational Enterprise Pursuit of Minimized Liability: Law, International Business Theory and The Prestige Oil Spill', *Berkeley Journal of International Law* 46/2 (2022), 411-451.

⁶² August Graham, 'Oil Giant Shell Chooses UK For Tax Residency and Drops 'Royal Dutch' From Name' (independent.co.uk, 2022) <<https://www.independent.co.uk/business/oil-giant-shell-chooses-uk-for-tax-residency-and-drops-royal-dutch-from-name-b1957935.html>> accessed 20 September 2023.

⁶³ For more information, see Horst Eidenmüller, 'Shell Shock: In Defence Of The 'Real Seat Theory' In International Company Law' (Oxford Law Faculty, 2022) <<https://www.law.ox.ac.uk/business-law-blog/blog/2022/03/shell-shock>>

and regulations of the jurisdiction in which it has its actual seat, according to the real seat theory. Therefore, this is the region where the corporation's day-to-day operations are conducted.⁶⁴ Because real seat theory plays an active role in German company law, the fact that incorporation theory is the leading theory of conflict of laws in the UK has resulted in certain liability cases against shareholders of British corporations in Germany after Brexit.⁶⁵

These two instances demonstrate the high value placed on company headquarters. Henceforth, in an era where technology is actively employed and artificial intelligence is expected and discussed to run businesses,⁶⁶ why should it matter where MNEs that control the global economy have their headquarters? The question then arises whether decentralizing the company by constructing it based on blockchain or DLT helps resolve MNE-related challenges.

As seen from the discussions above, the problems arising from the principle of limited liability regarding where and against whom the lawsuits originating from the wrongful actions of MNEs might be pursued have been debated for decades. Despite years of discussion, a solution has yet to be agreed upon by all countries that will assign responsibility to the parent company in that region without requiring the subsidiary to be established in the country where it would operate. In addition, it is worth noting that the principle of limited liability holds significant economic importance as it facilitates the process of capital accumulation, risk diversification, and investment in ventures that involve a certain degree of risk and creativity. This has a significant value when it

defence-real-seat-theory-international-company-law> accessed 19 April 2022; Eversheds Sutherland, 'Brexit Risk For Owners Of English Companies Operating In Germany- Publications - Eversheds Sutherland' (Eversheds-sutherland.com, 2022) <https://www.eversheds-sutherland.com/global/en/what/articles/index.page?ArticleID=en/Corporate/Brexit_risk_for_owners_of_english_companies_operating_in_germany> accessed 19 September 2023.

⁶⁴ John Armour - Horst Eidenmüller, 'Self-driving corporations?', *Harvard Business Law Review* 10 (2020), 114.

⁶⁵ 'Unlimited Personal Liability of Shareholders in Air Berlin PLC as a Result of BREXIT?' (Heuking.de, 2022) <<https://www.heuking.de/de/news-events/newsletter-fachbeitraege/artikel/unlimited-personal-liability-of-shareholders-in-air-berlin-plc-as-a-result-of-brexit.html>> accessed 19 September 2023.

⁶⁶ See Harry Surden, 'Artificial Intelligence And Law: An Overview', *Georgia State University Law Review* 35 (2019); Martin Petrin 'Corporate Management in the Age of AI', *Columbia Business Law Review* 3 (2020), 965–1030; Florian Möslin, 'Robots in the Boardroom: Artificial Intelligence and Corporate Law', *Research Handbook on the Law of Artificial Intelligence* (Edward Elgar Publishing Limited, 2018); Luca Enriques - Dirk Zetsche, 'Corporate Technologies and the Tech Nirvana Fallacy', *Hastings Law Journal* 72/1 (2020), 55-98; John Armour - Horst Eidenmüller, 'Self-driving corporations?'; Samar Ashour, 'Artificial Intelligence in The Boardroom: An Outright Exposure to Directorial Liability?' (Oxford Law Faculty, 2020) <<https://www.law.ox.ac.uk/business-law-blog/blog/2020/10/artificial-intelligence-boardroom-outright-exposure-directorial>> accessed 18 September 2023.

comes to convincing investors to invest. Increasing accountability may limit businesses' motivation to invest.⁶⁷

On the other hand, if there is any misconduct (limited liability), it is also economically rational to pierce the corporate veil or broaden the liability scope.⁶⁸ CSDDD, which we have mentioned above, is one of the most significant steps taken recently around the globe, and it has the potential to contribute to the discussion around parent companies' responsibilities. However, the extent to which CSDDD can be used to address the issues is also uncertain and controversial.

A. PROPOSAL FOR DUE DILIGENCE DIRECTIVE

It is also noteworthy to emphasize the European Commission's Proposal⁶⁹ for a directive on corporate sustainability due diligence. The European Commission released its long-awaited Proposal for a new Directive on corporate sustainability due diligence on 23 February 2022. This Proposal is the second phase of the Commission's program on sustainable corporate governance, which began in 2020. This Proposal of CSDDD is the latest and most ambitious effort to utilize corporate law to combat human rights breaches and climate change, as stated by Pargendler.⁷⁰

As Thomsen asserts, increased responsibility may raise corporate social responsibility,⁷¹ whereas increased corporate liability (rather than director liability) may result in less pollution.⁷² For example, the findings of a recent financial study show a 5% to 9% increase in pollutant emissions by subsidiaries after the US Supreme Court attributes liability to parent companies in

⁶⁷ See John Armour et al., 'Putting Technology to Good Use for Society: The Role of Corporate, Competition and Tax Law', *J. BRIT. ACAD.* 6/285 (2018), 294–295; John Armour - Horst Eidenmüller, 'Self-driving corporations?', 112.

⁶⁸ See John Armour - Horst Eidenmüller, 'Self-driving corporations?', 112; Hisaei Ito - Hiroyuki Watanabe, 'Piercing the Corporate Veil', *Comparative Company Law: A Case-Based Approach*, ed. Mathias Siems - David Cabrelli, (2018), 211-249; Reinier Kraakman et al., *The Anatomy of Corporate Law: A Comparative and Functional Approach* (2017), 29–47, 131.

⁶⁹ Proposal for a Directive of the European Parliament and of the Council on Corporate Sustainability Due Diligence and Amending Directive (EU) 2019/1937. https://eur-lex.europa.eu/resource.html?uri=cellar:bc4dcea4-9584-11ec-b4e4-01aa75ed71a1.0001.02/DOC_1&format=PDF

⁷⁰ According to Pargendler, the Proposal illustrates 'the rise of international corporate law'. For more analysis on the Proposal, see Mariana Pargendler, 'The EU Proposal on Corporate Sustainability Due Diligence and The Mystique of Complete Corporate Separateness' *ECGI* (2022) <https://ecgi.global/blog/eu-proposal-corporate-sustainability-due-diligence-and-mystique-complete-corporate-separateness?mc_cid=a63892fc3f&mc_eid=cd8cf5092d> accessed 18 September 2023.

⁷¹ Sanghak Choi - Hail Jung, 'Effects of the litigation risk coverage on corporate social responsibility', *Applied Economics Letters* 28/ 21 (2020), 1836-1841.

⁷² Pat Akey - Ian Appel, 'The Limits of Limited Liability: Evidence from Industrial Pollution', *Journal of Finance, American Finance Association* 76/1 (2021), 5-55.

environmental liability cases. However, adverse consequences such as reduced service levels, defensive practices⁷³ and increased expenses should be noticed.⁷⁴ Additionally, it should be considered that, as claimed by scholars,⁷⁵ the Directive's expanded managing responsibilities may raise the likelihood of professional managers abandoning their jobs, resulting in a decrease in managerial quality in terms of experience and training.⁷⁶

As seen, CSDDD⁷⁷ has several negative characteristics in addition to beneficial ones. While the directors' corporate responsibility is raised, it is conceivable that the parent company's projected degree of tort liability does not occur in group companies. Although environmental and human rights breaches will be reduced in this scenario,⁷⁸ it may be more acceptable to seek a solution in another manner.

In addition to criticisms on different issues,⁷⁹ the Proposal is also criticized for its regulations on the tort liability of company groups. In addition to criticisms on different issues, the Proposal is also criticized for the regulations of company groups on tort liability in human rights, climate change and environmental issues. As previously stated, parent firms' liability is controversial, particularly in multinational companies. Therefore, the issue of limited liability of the parent company for corporate torts has long been a source of discussion for lawyers and economists. Today, since certain countries, such as Brazil, have eliminated the parent company's limited

⁷³ Benjamin Van Rooij - Megan Brownlee, 'Does Tort Deter? Inconclusive empirical evidence about the effect of liability in preventing harmful behavior', *Cambridge Handbook on Compliance*, ed. Benjamin Van Rooij - D. Daniel Sokol (Cambridge, UK: Cambridge University Press, 2021).

⁷⁴ Steen Thomsen, 'Sustainable Corporate Governance and the Road to Stagnation' (Oxford Law Faculty, 2022) <<https://www.law.ox.ac.uk/business-law-blog/blog/2022/04/sustainable-corporate-governance-and-road-stagnation>> accessed 18 September 2023.

⁷⁵ Ronald W. Masulis et al., 'Director Liability Protection and the Quality of Outside Directors' (December 9, 2020). *European Corporate Governance Institute* – Finance Working Paper No. 672/2020, Available at SSRN: <https://ssrn.com/abstract=3329220> or <http://dx.doi.org/10.2139/ssrn.3329220>.

⁷⁶ Steen Thomsen, 'Sustainable Corporate Governance And The Road To Stagnation' (Oxford Law Faculty, 2022) <<https://www.law.ox.ac.uk/business-law-blog/blog/2022/04/sustainable-corporate-governance-and-road-stagnation>> accessed 18 September 2023; Naaraayanan and Meisner, JFE 2021.

⁷⁷ Reasons for and objectives of the proposal; see Proposal for a Directive of the European Parliament and of the Council on Corporate Sustainability Due Diligence and amending Directive (EU) 2019/1937. https://eur-lex.europa.eu/resource.html?uri=cellar:bc4dcea4-9584-11ec-b4e4-01aa75ed71a1.0001.02/DOC_1&format=PDF

⁷⁸ Pat Akey - Ian Appel, 'The Limits of Limited Liability: Evidence from Industrial Pollution'.

⁷⁹ Jesper Lau Hansen, 'Unsustainable Sustainability', *ECGI* (2022) <<https://ecgi.global/blog/unsustainable-sustainability>> accessed 19 September 2023.

liability on subsidiaries' environmental and labour obligations,⁸⁰ the Proposal is attacked for relying only on the parent company's own due diligence duties.⁸¹ As a result, the parent company's responsibility for the subsidiaries' actions is restricted, consistent with the existing limited liability theory, which has been criticized.

Given that the CSDDD's primary objective is to strengthen corporate governance practices in order to better integrate human rights and environmental risk mitigation processes, including those arising from value chains, into corporate strategies and to ensure consistency for businesses by increasing corporate accountability for negative impacts, Directive's approach which limits the parent company's responsibility is considering.⁸² Without a doubt, allocating responsibility to the parent firm would enable victims of human rights abuses and environmental disasters to be compensated.⁸³ It should be noted that there are also criticisms of the Directive, such as the danger of ticking boxes instead of principle-based assessments of unsustainability risks⁸⁴ or the neglect of the role of shareholders in sustainability.⁸⁵

After the above criticisms, on 1 June 2023, the European Parliament significantly amended the European Commission's proposal for the CSDDD.⁸⁶ The liability of MNEs for environmental and human rights abuses has been heightened by the European Parliament, particularly through the amendment of Article 22 of the Convention on Sustainable Development and the Deterrence of Tort Liability. This updated provision reflects a more assertive stance towards holding MNEs

⁸⁰ Lei No. 4.595, de 31 de Dezembro de 1964, D.O.U. de 31.12.1964, art. 25 (Braz.); Lei No. 6.024, de 13 de Março de 1974, D.O.U. de 14.03.1974, arts. 36, 40 (Braz.); For more information, see Mariana Pargendler, 'How Universal is the Corporate Form? Reflections on the Dwindling of Corporate Attributes in Brazil', *Columbia Journal of Transnational Law* 58/1 (2019), 23.

⁸¹ Pargendler, 'The EU Proposal on Corporate Sustainability Due Diligence and the Mystique of Complete Corporate Separateness'.

⁸² See Proposal for a Directive of The European Parliament and of the Council on Corporate Sustainability Due Diligence and Amending Directive (EU) 2019/1937, 3. https://eur-lex.europa.eu/resource.html?uri=cellar:bc4dcea4-9584-11ec-b4e4-01aa75ed71a1.0001.02/DOC_1&format=PDF.

⁸³ For more criticism about Proposal of Directive, see Pargendler, 'The EU Proposal on Corporate Sustainability Due Diligence and the Mystique of Complete Corporate Separateness'.

⁸⁴ Beate Sjøfjell - Jukka Mähönen, 'Corporate Purpose and the EU Corporate Sustainability Due Diligence Proposal', *ECGI* (2022) <<https://ecgi.global/blog/corporate-purpose-and-eu-corporate-sustainability-due-diligence-proposal>> accessed 20 September 2023.

⁸⁵ Marleen Och, 'The Case of the Missing Shareholders in the Proposed Corporate Sustainability Due Diligence Directive', *ECGI* (2022) <<https://ecgi.global/blog/case-missing-shareholders-proposed-corporate-sustainability-due-diligence-directive>> accessed 20 September 2023.

⁸⁶ "Texts Adopted - Corporate Sustainability Due Diligence - Thursday, 1 June 2023" (© European Union, 2023 - Source: European Parliament) <https://www.europarl.europa.eu/doceo/document/TA-9-2023-0209_EN.html> accessed 7 October 2023.

accountable for such violations. From a law and economics perspective, the CSDDD has the potential to improve the effectiveness of deterring social harm arising from corporate limited liability.⁸⁷ Nevertheless, considering the comprehensive nature of its due diligence responsibilities and their applicability outside national borders, the EU may have challenges in implementing the Directive as it now stands, unless there is enhanced international cooperation.⁸⁸ Furthermore, it is noteworthy that a significant number of the aforementioned complaints continue to hold true.

As mentioned, several difficulties related to MNEs have remained unresolved for years. Although regional solutions have been attempted in many legal systems, it is evident that they need a more definitive solution, particularly in terms of the parent firm's liability for the activities of the subsidiaries. At this point, the convenience and new approaches offered to companies by new technologies piqued our interest, and we were intrigued by the idea of applying these new technologies to solve MNEs' chronic problems. The feasibility of this concept will be determined below by an evaluation of current and potential approaches.

B. EVALUATION OF THE IMPACTS OF THE DIRECTIVE ON THE LIABILITY REGIME OF THE PARENT COMPANY

While the Proposal of the CSDDD⁸⁹ aims to mitigate human rights and environmental risks and consequences by strengthening corporate responsibility and individual rights,⁹⁰ it is argued that this will be ineffective, particularly for corporate groups.⁹¹ It will even put dispersed and unknown

⁸⁷ "Civil Liability in the EU Corporate Sustainability Due Diligence Directive Proposal" (Oxford Law Blogs, September 22, 2023) <<https://blogs.law.ox.ac.uk/oblb/blog-post/2023/09/civil-liability-eu-corporate-sustainability-due-diligence-directive-proposal>> accessed 7 October 2023.

⁸⁸ "Civil Liability in the EU Corporate Sustainability Due Diligence Directive Proposal" (Oxford Law Blogs, September 22, 2023) <<https://blogs.law.ox.ac.uk/oblb/blog-post/2023/09/civil-liability-eu-corporate-sustainability-due-diligence-directive-proposal>> accessed 7 October 2023.

⁸⁹ Reasons for and objectives of the proposal; see Proposal for a Directive of The European Parliament and of the Council on Corporate Sustainability Due Diligence and Amending Directive (EU) 2019/1937. https://eur-lex.europa.eu/resource.html?uri=cellar:bc4dcea4-9584-11ec-b4e4-01aa75ed71a1.0001.02/DOC_1&format=PDF

⁹⁰ Anne Lafarre, 'Mandatory Corporate Sustainability Due Diligence in Europe: The Way Forward', *ECGI* (2022), <<https://ecgi.global/blog/mandatory-corporate-sustainability-due-diligence-europe-way-forward>> accessed 20 September 2023.

⁹¹ For the criticism that the presence of the abuse of the parent company itself is necessary in order to accept the responsibility of the parent company according to the directive, and therefore complicates the obligation of the parent company for the damages caused by the subsidiary, see Pargendler, 'The EU Proposal on Corporate Sustainability Due Diligence and the Mystique of Complete Corporate Separateness'.

duties on company directors.⁹² Regardless of location,⁹³ companies are accountable for the losses incurred by their subsidiaries and supply chain partners under Article 22 of the CSDDD. This regulation is intended to prevent businesses from escaping tort responsibility by consolidating potentially damaging operations into judgment-proof subsidiaries.⁹⁴

While providing unlimited liability to parent companies for the losses of subsidiaries is the ultimate solution, CSDDD includes some options issues in this regard. First, it is seen that the Transparency Directive is referenced when evaluating the parent company's and subsidiary's responsibilities⁹⁵ as CSDDD stated that "subsidiary" means a legal entity in which the activities of controlled undertakings are carried out within the meaning of Article 2(1)(f)⁹⁶ of the Transparency Directive of the European Parliament and the Council 2004/109/EC.⁹⁷ There may be a risk that the parent companies will avoid their responsibilities by using this definition to their advantage.⁹⁸ Businesses might escape accountability by segmenting their activities into distinct entities, all within the required thresholds.⁹⁹ Additionally, the Directive proposes imposing obligations on all large companies (even those with headquarters outside of the EU) and enterprises listed on EU-regulated markets.¹⁰⁰ There is, however, a gap here. As Paces fully states,¹⁰¹ "non-EU parents can escape

⁹² Steen Thomsen, 'Sustainable Corporate Governance and the Road to Stagnation' (Oxford Law Faculty, 2022) <<https://www.law.ox.ac.uk/business-law-blog/blog/2022/04/sustainable-corporate-governance-and-road-stagnation>> accessed 20 September 2023.

⁹³ In this context, for an analysis of the possible consequences of the CSDDD for American companies, see Luca Enriques - Matteo Gatti, 'The Extraterritorial Impact of the Proposed EU Directive on Corporate Sustainability Due Diligence: Why Corporate America Should Pay Attention' (Oxford Law Faculty, 2022) <<https://www.law.ox.ac.uk/business-law-blog/blog/2022/04/extraterritorial-impact-proposed-eu-directive-corporate>> accessed 20 September 2023.

⁹⁴ Alessio M. Paces, 'Supply Chain Liability in The Corporate Sustainability Due Diligence Directive Proposal' (Oxford Law Faculty, 2022) <<https://www.law.ox.ac.uk/business-law-blog/blog/2022/04/supply-chain-liability-corporate-sustainability-due-diligence>> accessed 20 September 2023.

⁹⁵ Paces, 'Supply Chain Liability in The Corporate Sustainability Due Diligence Directive Proposal'.

⁹⁶ Proposal for a Directive of The European Parliament and of the Council on Corporate Sustainability Due Diligence and amending Directive (EU) 2019/1937. https://eur-lex.europa.eu/resource.html?uri=cellar:bc4dcea4-9584-11ec-b4e4-01aa75ed71a1.0001.02/DOC_1&format=PDF

⁹⁷ DIRECTIVE 2004/109/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 15 December 2004 on the harmonisation of transparency requirements in relation to information about issuers whose securities are admitted to trading on a regulated market and amending Directive 2001/34/EC. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32004L0109>

⁹⁸ Alessio M. Paces, 'Supply Chain Liability in The Corporate Sustainability Due Diligence Directive Proposal'.

⁹⁹ Enriques - Gatti, 'The Extraterritorial Impact of The Proposed EU Directive on Corporate Sustainability Due Diligence: Why Corporate America Should Pay Attention'.

¹⁰⁰ See CSDDD, p. 4 footnote 15.

¹⁰¹ Alessio M. Paces, 'Supply Chain Liability in The Corporate Sustainability Due Diligence Directive Proposal'.

liability operating in the EU territory through subsidiaries, whose liability does not carry on to the non-EU parent.”¹⁰²

Moreover, perhaps most importantly, the sanction is the most fundamental factor necessary for a regulation to be effectively enforced. The most critical condition for the Directive to be applicable and to stop environmental and human rights breaches is concrete fines. However, there is a caution regarding the possibility of consequences in the event of a breach of the Proposal and their content being left to the discretion of EU Member States. On the one hand, the severity of the sanctions imposed by member states will surely enhance the Directive's implementation. On the other hand, as Enriques argues,¹⁰³ if the fines are not severe enough, the CSDDD may lose credibility with companies, rendering it ineffectual.¹⁰⁴ Some scholars¹⁰⁵ argue that implementing stakeholder-oriented fiduciary duties, which involve granting powers to advance the interests of non-shareholder groups, may have contrary effects. This is due to the potential increase in decision-making costs without any assurance that the newly empowered constituencies will prioritize climate-conscious actions more than shareholders. Some others also reject the thesis that corporate short-termism may be due to the lack of enforcement of fiduciary duties and the rarity of cases in which company directors are found liable and argue that company law legislation prepared by the EU in recent years offers better opportunities for sustainable governance than reform of directors' duties provided by CSDDD.¹⁰⁶

¹⁰² Indeed, the CSDDD does not apply to small, medium, and micro companies, which account for nearly 99 percent of all EU-based businesses with a revenue of less than 40 million euros. The directive's responsibilities will apply to extremely big EU-based businesses in all sectors – those with more than 500 workers and a net revenue of more than € 150 million – and to those with more than 250 employees on a more restricted basis. See Proposal for a Directive Of The European Parliament And Of The Council on Corporate Sustainability Due Diligence and amending Directive (EU) 2019/1937. https://eur-lex.europa.eu/resource.html?uri=cellar:bc4dcea4-9584-11ec-b4e4-01aa75ed71a1.0001.02/DOC_1&format=PDF; ‘EU: Disappointing Draft On Corporate Due Diligence’ (Human Rights Watch, 2022) <<https://www.hrw.org/news/2022/02/28/eu-disappointing-draft-corporate-due-diligence>> accessed 20 September 2023.

¹⁰³ Enriques - Gatti, ‘The Extraterritorial Impact of The Proposed EU Directive on Corporate Sustainability Due Diligence: Why Corporate America Should Pay Attention’.

¹⁰⁴ For more criticism of CSDDD, see ‘EU: Disappointing Draft on Corporate Due Diligence’ (Human Rights Watch, 2022) <<https://www.hrw.org/news/2022/02/28/eu-disappointing-draft-corporate-due-diligence>> accessed 20 September 2023.

¹⁰⁵ John Armour et al., ‘Green Pills: Making Corporate Climate Commitments Credible’, *European Corporate Governance Institute* (2022) - Law Working Paper No. 657/2022.

¹⁰⁶ For more criticisms that the CSDDD is prepared by ignoring the role of corporate governance rules and other soft law instruments of international origin, see Guido Ferrarini, Michele Siri, Shanshan Zhu, ‘The EU’s Proposed Reform

It is too early to make any judgments regarding the directive's effectiveness, which will be determined over time. However, this paper will focus on the question of whether another new technology-based mechanism for holding parent companies liable exists.

C. POTENTIAL IMPACT OF EMERGING TECHNOLOGIES FOR MULTINATIONAL ENTERPRISES

It should be acknowledged that new technologies will contribute to corporate law and companies like everything else. Through the use of digital contracts, it is now feasible to transfer ownership of tangible assets, such as vehicles and real estate, as well as stocks, bonds, and money, via the Internet. Today, it is seen that new systems such as blockchain¹⁰⁷ or DLT contribute to MNEs in many areas, such as compliance and auditing.¹⁰⁸ Blockchain technologies, in particular, may be very beneficial in overcoming the issues encountered by MNEs, particularly in complicated structures of crisscrossing intercompany transactions across several countries.¹⁰⁹

1. Potential Advantages of Emerging Technologies for Multinational Enterprises

Recently, there is an increase in the use of blockchain technology in companies for compliance and auditing. For instance, VeChain¹¹⁰ and similar firms provide blockchain-driven solutions to address supply chain compliance and audits, particularly on sustainability. Costs are lowered by minimizing the complexity of compliance procedures for a complex organization like a MNE.¹¹¹

of Directors' Duties and the Missing Link to Soft Law', *European Business Organization Law Review*, (2023), <https://doi.org/10.1007/s40804-023-00290-6>.

¹⁰⁷ Blockchain is a critical technology that has the potential to have enormous and far-reaching implications. The term 'blockchain' refers to a decentralised, distributed record or ledger of transactions in which transactions are permanently and nearly immutably preserved via cryptography. For more information, see; 'Can Blockchain Revolutionize International Trade?' (Theblockchaintest.com, 2022) <<https://theblockchaintest.com/uploads/resources/WTO%20-%20Can%20Blockchain%20revolutionize%20international%20trade%20-%202018.pdf>> accessed 20 September 2023.

¹⁰⁸ Rui Torres de Oliveira et al., 'Blockchain and the multinational enterprise: Progress, challenges and future research avenues', *Review of International Business and Strategy* 30/2 (2020), 145-161; see also Matthew Davis et al., 'Can blockchain-technology fight corruption in MNEs' operations in emerging markets?', *Review of International Business and Strategy* (2021).

¹⁰⁹ Zhang et al., 'Blockchain-based distributed compliance in multinational corporations' cross-border intercompany transactions', 509.

¹¹⁰ 'VeChain | Blockchain for Our Better World' (vechain, March 9, 2023) <<https://www.vechain.org>> accessed 24 September 2023.

¹¹¹ It Supply Chain, 'VeChain: The Blockchain for Supply Chain Management' (IT Supply Chain, May 16, 2023) <<https://itsupplychain.com/vechain-the-blockchain-for-supply-chain->

Adapting Blockchain-based technologies will benefit an MNE by reducing risks and increasing savings.¹¹² As advantages of new technologies to the MNEs, AI can evaluate extensive data sets, enabling businesses to enhance their decision-making processes regarding risk management methods by identifying patterns and trends.¹¹³ Furthermore, blockchain technology has the potential to offer a robust and reliable framework for the documentation and monitoring of ownership and the exchange of assets and resources.¹¹⁴

Blockchain technology's fundamental logic is to aggregate transactions into blocks, incrementally added to the public ledger through a consensus method. The basic logic of blockchain technology is to group transactions into blocks, adding blocks one by one to the distributed ledger based on a consensus mechanism.¹¹⁵ Additionally, each block includes the cryptographic hash of the previous blocks, back to the genesis block. Since honest peers in the blockchain network have more computing capacity than malicious peers, it is relatively challenging to tamper with recorded transactions/blocks without being detected. When paired with smart contracts and distributed ledger technology,¹¹⁶ blockchain technology can simplify global commerce by streamlining corporate procedures, boosting trust, accountability,¹¹⁷ and transparency, and assisting MNEs.¹¹⁸ Due to the confidentiality and trust afforded by blockchain technology, it will be critical for MNEs to apply the support of blockchain and similar technologies. We should note that in this

management/#:~:text=VeChain%20is%20a%20blockchain%2Dbased,transparent%20supply%20chain%20management%20system.> accessed 24 September 2023.

¹¹² Torres de Oliveira et al., 'Blockchain and the multinational enterprise: Progress, challenges and future research avenues', 6.

¹¹³ Jiangong Wu et al., 'Enterprise data security storage integrating blockchain and artificial intelligence technology in property and resource risk management', *Soft Computing* 2 (2023). <https://doi.org/10.1007/s00500-023-08933-z>.

¹¹⁴ Wu et al., 'Enterprise data security storage integrating blockchain and artificial intelligence technology in property and resource risk management'.

¹¹⁵ Zhang et al., 'Blockchain-based distributed compliance in multinational corporations' cross-border intercompany transactions', 511.

¹¹⁶ Dirk A. Zetsche et al., 'Decentralized Finance (DeFi)', *Journal of Financial Regulation* 6 (2020), 179.

¹¹⁷ Several corporations have already implemented blockchain technology to authenticate items, as demonstrated by the cases of LVMH and Aura. For more information, see "LVMH Partners with Other Major Luxury Companies on Aura, the First Global Luxury Blockchain - LVMH" (LVMH, April 20, 2021) <<https://www.lvmh.com/news-documents/news/lvmh-partners-with-other-major-luxury-companies-on-aura-the-first-global-luxury-blockchain/>> accessed September 24, 2023.

¹¹⁸ Zhang et al., 'Blockchain-based distributed compliance in multinational corporations' cross-border intercompany transactions', 511.

paper, the term "blockchain" refers to a permissioned blockchain network whose nodes are operated by recognized whitelisted businesses.¹¹⁹

We suggest that if MNEs operate on a blockchain system based on distributed ledger technology and smart contracts, they can address the difficulties mentioned above, such as parent-subsidiary liability for environmental and human rights breaches. In addition to the convenience of technology, the trust-building function of multiple distributed assets that enable identity verification will result in removing existing intermediaries, clearing and settlement systems, and other infrastructure. The immutability, verifiability, and traceability of blockchain entries provide an undisputed audit trail that may be utilized internally to guide and enhance an organization's compliance function and externally in the event of a government agency examination.¹²⁰ As a consequence, improved security and transparency will be achieved.

Blockchain-based governance gains more importance when considered an excellent corporate governance system and its critical impact on company performance.¹²¹ Decentralization, transparency, immutability, and the ability to trace transactions are just a few of the advantages of blockchain technology. Additionally, the system will benefit from increased efficiency and speed, decreased transaction costs, and increased market access.¹²² Thus, incorporating this technology into corporate governance may improve its effectiveness while promoting a balance of corporate members' interests and protecting their rights.

The survivability and decentralization of blockchain systems is its essential characteristic. Distributed, in fact, denotes unstopability in the case of blockchain systems. It operates on hundreds of thousands of servers not linked to the Blockchain's central database, so the others will still function even if one quits. Blockchain technology guarantees that information is recorded

¹¹⁹ For more information regarding this blockchain, see Zhang et al., 'Blockchain-based distributed compliance in multinational corporations' cross-border intercompany, 511.

¹²⁰ Mark L. Shope, 'Distributed Ledger Technology In International Trade: Rethinking the Role and Necessity of the Customs Declaration', *Stanford Journal of Blockchain Law & Policy* 5/1 (2022), 116; see also C. Alden Pelker et. al., 'Using Blockchain Analysis from Investigation to Trial', *DOJ J. FED. L. & PRAC.* 69/59 (2021).

¹²¹ See Dirk A. Zetsche et al., 'The Distributed Liability Of Distributed Ledgers: Legal Risks Of Blockchain' *University of Illinois Law Review* (2018), 1367; Anne Lafarre - Christoph Van der Elst, 'The Viability of Blockchain in Corporate Governance' *ECGI Working Paper Series in Law* 712 (2023), https://www.ecgi.global/sites/default/files/working_papers/documents/theviabilityofblockchainincorporategovernance_0.pdf.

¹²² See Zetsche et al., 'The Distributed Liability of Distributed Ledgers: Legal Risks of Blockchain', 1367.

securely and that participants in these organizations with many members may communicate with one another. These advanced technologies allow for numerous parties' decentralized recording and management of data. In particular, this easy access to company information improves the security and transparency of internal communication. The growth of the corporate governance approach is also ensured by the fact that reliable information representing the company's actual position is available to its interest groups.¹²³

Decentralized computer networks that are reliable, secure, immutable, and independent of flawed human input and arbitrary human goodwill may, in fact, be given the auditing tasks often carried out by Directors in companies to supervise their representatives utilizing blockchain technology. This results in eliminating agency expenses (the manager's cost of supervising agents) and creating confidence in the contractual relationship between the agent and the agent. Blockchain technology offers an alternative governance mechanism as a consequence.¹²⁴ The blockchain's credibility is derived from its immutability and cryptographic security protocols, which offer transaction guarantees and foster principal-agent confidence in the integrity of contractual agreements.¹²⁵ Only after all contract criteria are satisfied by both parties and validated by the most miners/nodes in the system are the contract between the proxy and the agent executed. Therefore, with a blockchain-based infrastructure, the principal is not required to commence supervision and monitoring, along with the related agency expenditures, resulting in no additional cost.

The introduction of centralization of authority also gives rise to agency conflicts, which are a primary concern in corporate law and governance.¹²⁶ Blockchain solves entirely the inherent agency conflict¹²⁷ in contemporary finance and corporate governance¹²⁸ due to the governance

¹²³ Dirk Zetzsche, 'Corporate Technologies – Zur Digitalisierung im Aktienrecht', *Die Aktiengesellschaft* 2019, 3.

¹²⁴ Wulf A. Kaal, 'Blockchain-Based Corporate Governance', *U of St. Thomas (Minnesota) Legal Studies*, Research Paper No. 19-05 (2019), 15.

¹²⁵ Kaal, 'Blockchain-Based Corporate Governance', 16.

¹²⁶ John Armour et al., 'Agency Problems and Legal Strategies', *The Anatomy Of Corporate Law* ed. Reiner Kraakman et al., 29 (2017).

¹²⁷ Alessandro Broede Lopes - Martin Walker, 'Asset Revaluations, Future Firm Performance and Firm-Level Corporate Governance Arrangements: New Evidence from Brazil', *The British Accounting Review*, 44 (2012), 64; Kathleen M. Eisenhardt, 'Agency Theory: An Assessment and Review', *The Academy of Management Review*, 14 (1989), 59.

¹²⁸ Alex Murray et al., 'Contracting in the Smart Era: The Implications of Blockchain and Decentralized Autonomous Organizations for Contracting and Corporate Governance', *ACAD. MGMT. PERSP.* 35 (2021), 622.

guarantees embedded in the technology.¹²⁹ Because the system operates precisely as it is programmed in line with the idea that the code is the law,¹³⁰ agent relationships in smart contracts shield the business from the agent's opportunistic conduct. Additionally, all contract conditions are transparent and available to everyone. As a result, the system also contributes to transparency. Thus, everyone may access a company's financial information on the blockchain, not only the accounting department. In addition to many other yet-to-be-considered factors, smart agency contracts operate on a unique blockchain that enables principals and agents to keep track of debt or pledges and create complete marketplaces.¹³¹

One of the most considerable contributions of blockchain to MNEs may be its ability to improve and enhance supply chain transparency and traceability, mitigate fraudulent activities, and safeguard product authenticity.¹³² This presents a significant benefit, particularly for MNEs engaged in the food and pharmaceutical industries. Instances have started to surface globally. One example of blockchain implementation in the food industry is observed in IBM's Food Trust technology, which facilitates tracing food product origins.¹³³

One additional benefit MNEs can derive from blockchain technology is the mitigation of intermediary reliance, resulting in enhanced efficiency and cost-effectiveness of cross-border transactions.¹³⁴ Indeed, the idea can be exemplified by the blockchain-based payment mechanisms pioneered by the Ripple corporation.¹³⁵ In conclusion, Blockchain offers many fantastic benefits

¹²⁹ Wulf A Kaal, 'Blockchain-Based Corporate Governance', 16.

¹³⁰ Shaojun Liu, (2021). Code Is Law. In: Rights Limitation in Digital Age. Springer, Singapore. https://doi.org/10.1007/978-981-16-4380-4_7

¹³¹ For more information, see Wulf A Kaal, 'Blockchain-Based Corporate Governance', 17.

¹³² Tamir Agmon - Ido Kallir, 'Distributed Ledger Technology (DLT): A Game Changer for MNEs in Emerging Markets', *Journal of Risk and Financial Management* 15/580 (2022); Gregor Blossey et al., 'Blockchain technology in supply chain management: An application perspective', *Paper presented at the 52nd Hawaii International Conference on System Sciences* (2019), Grand Wailea, HI, USA, January 8–11; Tom Gillpatrick et al., 'How Can Blockchain Contribute to Developing Country Economies? A Literature Review on Application Areas' *Economics* 10/1 (2022), 105-128.

¹³³ For detailed information, see 'Blockchain for Supply Chain- IBM Blockchain' <<https://www.ibm.com/blockchain-supply-chain>> accessed 24 September 2023.

¹³⁴ Orkun Bayram, 'Importance of Blockchain Use in Cross-Border Payments and Evaluation of the Progress in This Area', *Doğuş Üniversitesi Dergisi* 21/171 (2020), 185; Zhang et al., 'Blockchain-based distributed compliance in multinational corporations' cross-border intercompany transactions', 509.

¹³⁵ James Tyrrell, "Blockchain-Based Cross-Border Payments – the Ripple Effect" (*TechHQ*, July 24, 2023) <<https://techhq.com/2023/07/blockchain-based-cross-border-payments-the-ripple-effect/>> accessed 24 September 2023.

to enhance corporate governance, but those advantages may sometimes be exploited in ways that are often not considered.

2. Limitations of Emerging Technologies for Multinational Enterprises

In addition to all its positive contributions, it should be remembered that blockchain systems also have some disadvantages. For example, although the unstoppable and decentralized system can be seen as an advantage, the lack of an on/off switch has caused significant problems. Millions of dollars were stolen in 2017 due to a code error discovered by hackers on the Ethereum blockchain.¹³⁶ Despite the guard watchdogs seeing an issue, the system could not be turned down, and theft could not be stopped. Hackers have used the same code fault to trigger the system continually.¹³⁷ The system's problems are still there today because a hostile individual may exploit a software fault before others can discover and repair it. This is because the open-source software that powers the blockchain is duplicated on hundreds of servers all over the globe. Ethereum was a pure computer code company without a physical location, a country that might claim authority or control, or a typical corporate structure. The DAO did not use a conventional corporate structure that required formal control and empowerment to flow top-down from investors and shareholders via a board of directors to management and personnel. Indeed, it lacked any workers, managers, or directors. The DAO eliminated the fundamental controls principals generally use in agency partnerships.¹³⁸

An additional critique is aimed at diminishing or potentially eradicating agency costs, which are believed to yield significant advantages through blockchain technology, particularly in the context of DAOs. The attempt to mitigate agency costs by including a heterogeneous and unaligned cohort of investors in corporate decision-making is seen by some academics as a reassessment of corporate law rather than a substantive proposition to improve business organization. Furthermore, upon examining the domain of application for DAOs, the Decentralized Finance (DeFi) ecosystem emerges as particularly noteworthy. Despite the decentralized nature of DAOs, their autonomy may be compromised beyond the confines of the blockchain ecosystem. In the context of non-

¹³⁶ Vladimir M. Višnevskij – Dmitry Kozyrev, *Distributed Computer and Communication Networks: 21st International Conference, DCCN 2018*, Moscow, Russia, September 17-21, 2018, Proceedings (Springer 2018), p. 617.

¹³⁷ Višnevskij - Kozyrev, *Distributed Computer and Communication Networks: 21st International Conference*, 618.

¹³⁸ Wulf A Kaal, 'Blockchain-Based Corporate Governance', 16.

crypto interactions, the DAO will be required to depend on an 'oracle' system. This reliance will give rise to the manifestation of the conventional agency problem observed in contemporary corporate law within the present-day DAO.¹³⁹

Another problem—and perhaps the most important—is that data recorded on the Blockchain cannot be deleted. What happens if someone uses the system to preserve something they would not want to keep forever? For instance, what if someone wants their criminal record removed and Blockchain is utilized to store records? This data will be a permanent record of the individual on a blockchain.¹⁴⁰ When evaluated regarding company law, a company's corporate governance is strengthened by registering its data on the Blockchain. Thanks to blockchain technology, a company's financial records may be kept transparently utilizing bitcoins. To the degree authorized, crypto-encrypted corporate documents will be accessible for examination by shareholders and other interested parties. This makes finding inconsistencies and fraudulent assertions in financial records much simpler.¹⁴¹ For instance, simple access to real-world records also provides convenience in tax computation. Especially for listed companies, this transparency in financial records will be highly beneficial. With blockchain technology, records will be continuously accessible, reducing the scope for market manipulation.¹⁴²

Increased shareholder engagement and frequent access to accurate data on the company will result from providing continuous access to the financial records created using blockchain technology.¹⁴³ With the help of this new technology, the company audit will also be accomplished in a new dimension and cost less. Not only will the correctness and compatibility of the data be assessed throughout the audit process on the consistently recorded and encrypted data, but it will also be feasible to analyse the completed transactions.¹⁴⁴ Furthermore, unfair manners of majority shareholders in the company's management may be identified early in a corporate structure when

¹³⁹ Kelvin F.K. Low et al., 'The company and blockchain technology', *Edward Elgard Handbook on Corporate Liability*, ed. Christian Witting - Martin Petrin, (Edward Elgar, 2023).

¹⁴⁰ Low et al., 'The company and blockchain technology'.

¹⁴¹ Low et al., 'The company and blockchain technology'.

¹⁴² Helo Petri - Hao Yuqiuge, 'Blockchains in operations and supply chains: A model and reference implementation' *Computers & Industrial Engineering* 136 (2019), 242-251.

¹⁴³ Petri – Yuqiuge, 'Blockchains in operations and supply chains: A model and reference implementation'.

¹⁴⁴ Kaal, "Blockchain-Based Corporate Governance", 16.

information asymmetry is eliminated or at least lowered with technology development. Doing this removes one of the primary causes of internal conflicts inside the organization.¹⁴⁵

Nevertheless, what about the data privacy concern highlighted earlier? What about a company's compliance with the EU's General Data Protection Regulation,¹⁴⁶ which aims to give persons greater control over their data?¹⁴⁷ Considering that a resident of an EU nation has the right to ask for the deletion of this information if it is no longer required, how will the information that companies do not want to be destroyed work if nothing can be taken away from the blockchain, which is where all information is stored?¹⁴⁸ Data cannot be erased from a blockchain since it is an "append-only" database, even after the collection and retention periods have passed. Therefore, the GDPR's principles (art. 5(1)(b)-(e)) are violated by this.¹⁴⁹

Even if deletion is not wanted, it can be required to disclose the codes to tax officials and auditors to perform an audit on the business. Only some companies have a qualified IT employee; thus, the codes must be disclosed to the IT team. In this situation, another kind of data privacy infringement is the voluntary sharing of the company's data with other parties. In addition, in light of emerging technologies, two primary perspectives emerge. On one side, people who are constantly optimistic about these technologies and their possibilities.

On the contrary, individuals who harbour skepticism towards modern technologies are akin to those who cautiously approach novel advancements.¹⁵⁰ Therefore, one of the primary obstacles

¹⁴⁵ Kaal, "Blockchain-Based Corporate Governance", 16.

¹⁴⁶ General Data Protection Regulation (GDPR), (September 27, 2022) <<https://gdpr-info.eu/>> accessed November 11, 2022

¹⁴⁷ Everything a person does online in the digital age either creates or implicates data that may be quite revealing about their private lives. With the help of the GDPR, individuals now have additional avenues to safeguard their personal information, and by extension, their privacy and other human rights. It increases everyone's level of control, calls for more transparency from corporations, governments, and other organizations about their data practices, and governs how data is gathered, processed, and stored. See 'The EU General Data Protection Regulation' (Human Rights Watch October 28, 2020) <<https://www.hrw.org/news/2018/06/06/eu-general-data-protection-regulation>> accessed 24 September 2023.

¹⁴⁸ 'The EU General Data Protection Regulation'.

¹⁴⁹ Sejin Han – Sooyong Park, 'A Gap between Blockchain and General Data Protection Regulation: A Systematic Review' *IEEE Access* 103888 10 (2022).

¹⁵⁰ James Clive-Matthews, 'A Brief History of Tech Skepticism' (Strategy+business, 5 May 2023) <<https://www.strategy-business.com/article/A-brief-history-of-tech-skepticism>> accessed 15 September 2023; Tom Kelsey, 'The present and future of techno-scepticism: two books on the dangers of technology', *Renewal: a Journal of Social Democracy* 26/4 (2018), 92-95.

Blockchain technology will encounter is establishing consumer confidence in this emerging technological domain. The potential decrease in system security can be attributed to the limited number of nodes, potentially resulting from financial constraints. It is of particular significance to consider when developing a novel public blockchain with a restricted number of members. Trust within the smart contract system, an integral component of the blockchain framework, is contingent upon the robustness of cryptographic methods, which can undergo modifications.¹⁵¹ Nevertheless, because of the absence of a governing body to oversee technological modifications, it becomes imperative to establish a consensus among the involved parties.

Another issue is that as a part of blockchain, DLT provides a superior level of protection against data manipulation during storage compared to other technologies. Additionally, DLT can verify that the transferring party retains ownership of the transferred item in the ledger and does not distribute it to many receivers. However, the concern here is that the DLT needs to rectify the incorrect data. If the data is stored incorrectly, the incorrect data stored via DLT remains incorrect. According to Zetzsche et al.,¹⁵² the 'garbage in, garbage out' paradox continues to exist. In conclusion, our suggestion should be observed, keeping in mind that some characteristics of DLT may result in unintended data dissemination, loss, or manipulation.

Last but not least, one aspect that has garnered criticism pertains to the increased utilization of DAOs during the transition of the Multinational Enterprise (MNE) system onto the blockchain.¹⁵³ A key concern raised is the need for precise legal characterization for DAOs. The matter at hand was the subject of deliberation in the legal case *Commodity Futures Trading Commission v. Ooki DAO*,¹⁵⁴ and its implications were also evident in the DAO case. In the latter case, DAO was classified as a simple partnership lacking legal personality. In essence, certain nations have conferred legal personality upon the DAO.

¹⁵¹ Jianting Xia et al., 'The Effect of Blockchain Technology on Supply Chain Collaboration: A Case Study of Lenovo' *Systems* 11/299 (2023); Christian Welzel et al., 'Mythos Blockchain: Herausforderung Für Den Öffentlichen Sektor', *Kompetenzzentrum Öffentliche Informationstechnologie, DIN*, (2017).

¹⁵² Dirk A. Zetzsche et al., 'The Distributed Liability Of Distributed Ledgers: Legal Risks Of Blockchain', *University of Illinois Law Review* (2018), 1373.

¹⁵³ Low et al., 'The company and blockchain technology'.

¹⁵⁴ *Commodity Futures Trading Commission v. Ooki DAO* (3:22-cv-05416)

In contrast others have temporarily overlooked it, and some have favored addressing DAO conflicts by analogizing them to established legal principles.¹⁵⁵ As an example, the state of Vermont in the United States implemented legislation on August 28, 2018,¹⁵⁶ known as the Blockchain-based Limited Liability Company (BLLC) Act.¹⁵⁷ This is the first act officially recognizing and incorporating a new type of legal entity,¹⁵⁸ the BLLC, within Vermont's legal framework.¹⁵⁹ Similarly, a DAO legislation was enacted in the state of Wyoming in April 2021 and subsequently implemented on July 1, 2021. The DAO was incorporated as a novel corporate entity under the legislation of Wyoming. A Wyoming DAO refers to a Limited Liability Corporation (LLC) that designates its articles of organization to a smart contract of a DAO, which is utilized for the management and operation of the corporation.¹⁶⁰

On the one hand, some authors¹⁶¹ perceive the absence of mandatory registration for DAOs during their formation, and the varying treatment and definition of DAOs across different jurisdictions, as a potential risk. These authors contend that this risk persists after implementing legal regulations and cannot be completely mitigated. The author asserts that there may be challenges in determining the appropriate legal framework for DAOs.¹⁶² They argue that applying national conflict laws, often used for traditional commercial entities, to DAOs could prove problematic.¹⁶³ Consequently,

¹⁵⁵ Carla L. Reyes, 'Autonomous Corporate Personhood', *Washington Law Review* 96/4 (2021), 1453.

¹⁵⁶ Title 11, Chapter 25, Subchapter 12 of the Vermont Statutes Online: Blockchain-Based Limited Liability Companies <<https://legislature.vermont.gov/statutes/fullchapter/11/025>> accessed 23 September 2023.

¹⁵⁷ Vermont Act No 205 (S.269), An act relating to blockchain business development <<https://legislature.vermont.gov/Documents/2018/Docs/ACTS/ACT205/ACT205%20As%20Enacted.pdf>> accessed 23 September 2023.

¹⁵⁸ Oliver Goodenough - Catherine Burke, "dOrg Launches First Limited Liability DAO" (Gravel & Shea, June 2019) <https://www.gravelshea.com/2019/06/dorg-launches-first-limited-liability-dao/?source=post_page-----> accessed 23 September 2023.

¹⁵⁹ For more information, see Florence Guillaume - Sven Riva, 'Blockchain Dispute Resolution For Decentralized Autonomous Organizations: The Rise Of Decentralized Autonomous Justice', *Blockchain And Private International Law*, ed. Andrea Bonomi - Matthias Lehmann, (Brill Nijhoff 2022).

¹⁶⁰ Guillaume - Riva, 'Blockchain Dispute Resolution For Decentralized Autonomous Organizations: The Rise Of Decentralized Autonomous Justice'.

¹⁶¹ Low et al., 'The company and blockchain technology'.

¹⁶² Tonya M. Evans, 'The Role of International Rules in Blockchain-Based Cross-Border Commercial Disputes' *Wayne L. Rev.* 65/1 (2019); Serkan Kaya - Kadirhan Maviş, 'Blokzincir Teknolojilerinin Uyuşmazlık Çözüm Sistemleri Üzerindeki Etkisi: Merkezi Olmayan Adalet Sistemi', *Sakarya Üniversitesi Hukuk Fakültesi Dergisi* 2/10 (2022).

¹⁶³ Low et al., 'The company and blockchain technology'.

determining the jurisdiction for resolving disputes arising from DAO-related matters may also be challenging for those authors.¹⁶⁴

On the other hand, according to an alternative perspective within the doctrine, which aligns with my own stance, the unique nature of DAOs renders conventional dispute resolution processes inadequate for addressing conflicts that arise within blockchain systems.¹⁶⁵ The resolution of these disagreements necessitates the utilization of identical technological means. Due to the reliance of DAOs on smart contracts, employing conventional dispute resolution techniques to address any conflicts that may occur within DAOs would undermine the objective of achieving fast, cost-effective, and automated execution that is inherent to blockchain technology.¹⁶⁶ Indeed, DAOs may fail to achieve the anticipated benefits when conventional solutions are present. Due to this rationale, confident entrepreneurs have established decentralized and efficient platforms capable of generating global influence and offering legal remedies for addressing conflicts emerging from smart contracts.¹⁶⁷ In practical application, the predominant decentralized justice platforms are primarily built on the Ethereum blockchain, including Kleros, JUR, and Aragon.¹⁶⁸ The need for clarity on the governing legislation has posed a significant challenge for proponents advocating for resolving disputes through DAOs instead of conventional mechanisms. Several potential solutions to this state of ambiguity have been put forth.¹⁶⁹ In the initial stage, the disputing parties should deliberate and select the appropriate legal framework to govern their dispute.

¹⁶⁴ Carsten Gerner-Beuerle et al., *The Private International Law of Companies in Europe*, (Bloomsbury Publishing, 2019); Low et al., 'The company and blockchain technology'.

¹⁶⁵ Yann Aouidef et al., 'Decentralized Justice: A Comparative Analysis of Blockchain Online Dispute Resolution Projects', *Frontiers in Blockchain*, 4/2 (2021).

¹⁶⁶ Evans, 'The Role of International Rules in Blockchain-Based Cross-Border Commercial Disputes'.

¹⁶⁷ For more information, see Guillaume - Riva, 'Blockchain Dispute Resolution For Decentralized Autonomous Organizations: The Rise Of Decentralized Autonomous Justice'; Kaya - Maviş, 'Blokzincir Teknolojilerinin Uyuşmazlık Çözüm Sistemleri Üzerindeki Etkisi: Merkezi Olmayan Adalet Sistemi'; Evans, The Role of International Rules in Blockchain-Based Cross-Border Commercial Disputes; Amy J. Schmitz - Colin Rule, 'Online Dispute Resolution for Smart Contracts' (2019) *Journal of Dispute Resolution*, 2; Darcy W. E. Allen et al., 'The Governance of Blockchain Dispute Resolution', *Harvard Negotiation Law Review* 25/75 (2019); Bronwyn E. Howell - Petrus H. Potgieter, 'Uncertainty and Dispute Resolution for Blockchain and Smart Contract Institutions', *Journal of Institutional Economics*, 17 (2021); Serkan Kaya, 'Blokzincir Tabanlı Akıllı Sözleşmelerden Doğan Uyuşmazlıkların Çözümü', *Medeni Usul ve İcra İflas Hukuku Dergisi* 18/52 (2022).

¹⁶⁸ Michael Buchwald, 'Smart Contract Dispute Resolution: The Inescapable Flaws of Blockchain-Based Arbitration', *University of Pennsylvania Law Review* 168 (2020), 1369-1423.

¹⁶⁹ Orna Rabinovich-Einy - Ethan Katsh, 'Blockchain and the Inevitability of Disputes: The Role for Online Dispute Resolution' *Journal Dispute Resolution* 2 (2019), 47-75.

Nevertheless, it is imperative to acknowledge that the parties may encounter limitations in their ability to select the governing law either prior to the emergence of a dispute or after its initiation.¹⁷⁰ Another approach to mitigate ambiguity involves granting arbitrators within the system the authority to ascertain the appropriate legal framework based on the specific characteristics of each dispute.¹⁷¹ The reliability and predictability of blockchain-based dispute resolution processes necessitate their adherence to international laws and punishment mechanisms.¹⁷²

The primary mechanism that will facilitate the utilization of the novel technologies discussed in this article for addressing the persistent challenges faced by MNEs is the implementation of blockchain-based systems for dispute resolution. In order to address environmental and human rights violations perpetrated by MNEs, it is imperative to surmount the non conveniens principle and limited liability principles. By doing so, MNEs can be subjected to legal proceedings in their home country, where their headquarters are situated, rather than solely in the jurisdiction where the tort occurred.¹⁷³ Additionally, this approach ensures that the managers at the core of the organization are held accountable for their actions. Using platforms such as Klerus and Aragan in conducting trials offers a potential resolution to the longstanding issue of accountability and jurisdiction pertaining to MNEs that has persisted over several decades. In a trial to be conducted by arbitrators who have been chosen, the location of the multinational enterprise's headquarters or where the tort is committed will hold no significance. Furthermore, utilizing a shared blockchain infrastructure for all enterprises will eliminate the existence of distinct legal organizations, thereby addressing prevailing challenges about director liability, competition violations, and taxation.

It should conclude, following these explanations, that nothing in our current technological advancements ensures that we will ever inhabit Alice's Wonderland. It is indisputable that while

¹⁷⁰ Evans, 'The Role of International Rules in Blockchain-Based Cross-Border Commercial Disputes'.

¹⁷¹ Buchwald, 'Smart Contract Dispute Resolution: The Inescapable Flaws of Blockchain-Based Arbitration'; Kaya, 'Blokzincir Tabanlı Akıllı Sözleşmelerden Doğan Uyuşmazlıkların Çözümü', *Medeni Usul ve İcra İflas Hukuku Dergisi* 18/52 (2022).

¹⁷² Buchwald, 'Smart Contract Dispute Resolution: The Inescapable Flaws of Blockchain-Based Arbitration'; Serkan Kaya - Eda Şahin Şentürk, 'Global Class Actions: Towards a Blockchain-Based Dispute Resolution System', *Journal Consumer Policy* (2023).

¹⁷³ Angelica Bonfanti, 'Accountability of Multinational Corporations for Human Rights and Environmental Abuse: How Far Can Extraterritorial Jurisdiction Go?', *Rethinking International Law and Justice*, (Routledge 2015).

novel technologies are not devoid of challenges, they will undoubtedly aid in resolving the issues related to MNEs that have been highlighted in this article.

Conclusion

MNEs have played a significant role in global trade for centuries. In contemporary times, it is evident that MNEs possess a multifaceted influence that extends beyond their economic implications for commercial endeavors. These entities are increasingly utilized as conduits for technological transfer, facilitators of robust supply chains, and catalysts for enhancing healthcare provisions during worldwide epidemics. In the context of global connectivity and shared technological advancements, it is plausible that individuals residing in geographically distant locations may possess identical mobile phone models, utilize the same search engine for research purposes, consume identical pharmaceuticals, own the same car model, receive equivalent vaccinations during a global health crisis, subscribe to a common digital platform, partake in shared cinematic experiences, and potentially engage in other similar activities. The prevalence of individuals exhibiting addiction towards a particular brand of chips can be attributed to the involvement of MNEs in producing and distributing these globally available goods and services. The operations and influence of MNEs are responsible for the extensive availability of these products in numerous regions.

In the context of globalization, the significance and influence of MNEs have witnessed a notable escalation, surpassing their previous levels of importance. Nevertheless, amongst the constant evolution and progress, MNEs have persistently grappled with many challenges, particularly those pertaining to accountability, which have endured throughout the years. On one side, MNEs are required to form subsidiary businesses in many countries, each having distinct legal entities separate from the parent company. MNEs are challenged to navigate distinct and intricate procedures specific to each operational zone. They must also adhere to varying legal frameworks and regulations on establishment, operations, taxation, and competition legislation. From a national standpoint, it is crucial to consider that in instances of adverse circumstances such as a tort, violations of competition regulations, or tax infractions, the responsible party is not the corporate headquarters or its managers but rather the designated representatives appointed by the subsidiary company operating within that particular country. In this particular scenario,

regrettably, there exists a potential for leniency, as the corporate headquarters of MNEs may not bear legal liability for torts and infringements. The primary factor contributing to this phenomenon is the idea of limited responsibility and the non forum conveniens rule, which serve as foundational principles within the field of company law. This article has examined the challenges faced by MNEs and has conducted an analysis of potential solutions to address these challenges. The Directive has been examined as one of the potential answers. Upon closer examination of the objections against the Directive, it becomes evident that this regulatory measure must comprehensively resolve the issues at hand. We recommend utilizing emerging technologies, which are the paramount instruments of the more interconnected world, to address the persistent challenges faced by MNEs. Blockchain technology, encompassing artificial intelligence, DLT, DAOs and smart contracts, offers several benefits to MNEs across multiple domains, ranging from organizational processes to supply chain management. The article provides an analysis of both the benefits and challenges associated with these systems, along with proposed solutions.

Furthermore, and of greater significance, the suggestion to employ blockchain-based DAOs for legal proceedings as a substitute for traditional courts will make a valuable contribution towards resolving the issue of jurisdiction. In this particular scenario, initiating legal proceedings against the management in the multinational enterprise's central administrative location would be feasible. It is posited in the article that the utilization of advancing technology holds promise for resolving persistent challenges faced by MNEs. A significant outcome of this development would be the prevention of human rights abuses and environmental transgressions associated with MNEs, hence eliminating a significant impediment to achieving sustainability goals.

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