ISTANBUL MEDENIYET UNIVERSITY
INSTITUTE OF GRADUATE STUDIES
DEPARTMENT OF PRIVATE LAW

Corporate Compliance

Enhanced by Artificial Intelligence

Master's Thesis

İrem Serra Seçer

April 2025

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Supervisor

Meltem Karatepe Kaya

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THESIS JURY APPROVAL

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STATEMENTS

Style and Reference Manual Statement

Having reviewed this thesis written under my supervision, I confirm that it has been written in accordance with the Chicago Manual of Style 17th Edition and used its footnote reference format consistently throughout the entire text.

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Declaration of Originality

I hereby declare that all information in this dissertation has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conducts, I have fully cited and referenced all material and results that are not original to this work.

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İrem Serra Seçer

GENİŞ ÖZET

Yapay Zeka ile Güçlendirilmiş Kurumsal Compliance

Seçer, İrem Serra

Yüksek Lisans Tezi, Özel Hukuk Anabilim Dalı

Danışman: Dr. Öğr. Üyesi Meltem Karatepe Kaya

Nisan 2025

"Compliance" (uyum) kavramının şirketler tarafından benimsenmesi ve iç süreçlerinin bir parçası haline getirilmesi şirketlerin faaliyetlerinde hukuka uygunluğun sağlanması ve yasal yaptırımlara maruz kalmamaları için önem arz etmektedir. Maruz kalınacak yasal yaptırımların niteliği ve niceliği göz önüne alındığında buna sebep olan kanuna aykırılıklar şirketleri faaliyetlerini sürdüremeyecekleri bir noktaya getirebilecektir. Bu açıdan compliance'ın bir önleyici hukuk kavramı olarak değerlendirilmesi de mümkündür.

Compliance sözlük anlamıyla hukuka uyumu ifade eder ancak özellikle şirketler hukuku bağlamında bir çalışma alanı haline gelmiş ve "corporate compliance" olarak adlandırılmıştır. Kavramın genel olarak kabul edilen net bir tanımı olmamakla birlikte yalnızca şirketlerin iş ve işlemlerinin hukuka uygun olmasının ötesinde şirketler tarafından hukuka uygunluğu sağlamaya yönelik olarak alınacak önlemler, geliştirilecek süreçler ve oluşturulacak progamları ifade ettiği anlaşılmaktadır.

Corporate compliance kavramı ağırlıklı olarak anonim şirketler üzerinden gelişim göstermekte ve özellikle bünyesindeki hukuka aykırı faaliyetler küresel çapta etkili olabilecek sektörlerde faaliyet gösteren büyük ölçekli şirketleri hedef almaktadır. Çalışma özelinde corporate compliance kavramı kapsamlı olarak ele alınarak kavramın şirketler üzerindeki önemi ve etkileri açıklanmıştır.

Şirketlerin asıl amacının kar elde etmek olduğu değerlendirildiğinde kendi menfaatlerini toplum menfaatlerinin önüne alarak hareket etmeleri çoğu zaman kaçınılmazdır. Bu durumun örnekleri 2008 küresel ekonomik krizi başta olmak üzere birçok firma ve ülke düzeyinde yaşanmış; yalnızca hukuka aykırılıklara sebep olan şirketler değil, geniş çapta toplumu etkileyen sonuçlar doğurmuştur. Bu sonuçlar dikkate alındığında compliance'ın yalnızca şirketler için değil, daha geniş açıdan tüm toplum için önem arz ettiği anlaşılmaktadır. Bu açıdan değerlendirildiğinde compliance'ın kurumsal yönetim ile olan ilişkisi de açıkça görülmektedir.

2008 ekonomik krizinin ardından artırılan yasal düzenlemelerle şirket yönetimlerinde şeffaflığın artırılarak gelecekte yaşanabilecek benzer krizlerin önüne geçilmesi hedeflenmiştir. Compliance kavramı ilk olarak ABD'de ceza hukuku düzenlemeleriyle birlikte ortaya çıkmıştır. Amerikan hukukunda daha çok ceza hukuku üzerinden gelişim gösteren kavram mahkeme kararlarıyla açıklanarak şekil almıştır.

Compliance şirket içinde hukuka uyumluluğu sağlamayı ve uyumun gerçekleşmediği durumlarda ortaya çıkacak sorumlulukları yönetmeyi hedefleyen iki yönlü bir yapıya sahiptir. Şirketler bünyeleri içerisindeki compliance'ı, kuracakları ve yürütecekleri sistemlerle sağlamaktadır. Şirket faaliyetlerinin şirket dışından takip edilerek şirket içerisinde meydana gelen hukuka aykırılıkların tespitinin zorluğu sebebiyle düzenleyici kurumlar da şirketleri kendi raporlama ve izleme sistemlerini kurmaya teşvik etmektedir.

Compliance yükümlülüğünün kapsamı şirketten şirkete değişebilecek olmakla birlikte şirketler, özellikle de borsa şirketleri, içerisinde geliştirilecek compliance programlarının asgari olarak uyum kültürünün oluşturulması, riskin değerlendirilmesi, amaç, program ve organizasyonun belirlenmesi, iletişim, gözetim ve iyileştirme unsurlarını taşıması gerektiği kabul edilmektedir.

Karşılaştırmalı hukuka baktığımızda ABD'de mevcut yasal düzenlemeler sebebiyle hemen hemen her şirket içerisinde uyum sistemi mevcut ve yönetim kurulunun compliance yükümlülüğünün gözetim yükümlülüğü kapsamında olduğu kabul edilirken İngiltere mahkemeleri tarafından yönetim kurulu için açıkça bir compliance yükümlülüğü öngörülmemiştir.

Türk hukukunda compliance kavramına ilişin Türk Ticaret Kanunu (TTK), Sermaye Piyasası Kanunu ve diğer bazı mevzuatta çeşitli düzenlemeler yer almaktadır. Anonim şirket yönetim kurulu üyelerinin ise Türk Ticaret Kanunu'nun 369/1 ve 375/1 maddeleri kapsamında compliance yükümlülüğünün bulunduğu kabul edilmektedir. Yönetim kurulu üyelerinin compliance yükümlülüğü özen yükümlülüğü ve gözetim yükümlülüğü kapsamında değerlendirilmektedir.

TTK madde 369/1 ve gerekçesinin incelenmesi neticesinde yönetim kurulu üyelerinin "tedbirli bir yöneticinin özenine" sahip olması gerektiği ve bu kapsamda yönetim kurulu üyelerinin "iş insanı kararı" (business judgment rule) alabileceği anlaşılmaktadır. Bununla birlikte TTK madde 375/1'de ise "üst gözetim" yönetim kurulunun devredilemez ve vazgeçilemez görev ve yetkileri arasında sayılarak madde gerekçesiyle de bu üst gözetimin genel bir gözetim görevinin dışında geçerli sistemin kurulmasını gerektirdiği açıklanmıştır.

Şirket içerisinde compliance'ı sağlamaya yönelik alınacak kararlar, şirkete ilişkin sübjektif hususlar da dikkate alınarak iş insanı kararı kapsamında değerlendirilecektir. Ancak alınacak kararların şirketin büyüklüğü, yapısı ve faaliyet gösterdiği alanla da uyumlu olması gerekmektedir. Bu bağlamda yönetim kurulunun compliance'a ilişkin devredilebilir görev ve yetkilerini devretmesi de söz konusu olabilir.

TTK'nın 553. maddesi uyarınca yönetim kurulu üyelerinin yükümlülüklerini ihlal etmeleri halinde sorumlulukları doğacak olup yönetim kurulu üyelerinin compliance yükümlülüklerini yerine getirmemeleri halinde bu maddenin uygulanması söz konusu olabilecektir. Bu sorumluluğun oluşabilmesi için zarar, kusur ve illiyet bağının bulunması gereklidir. Bu noktada yönetim kurulunun compliance görevlerini devredip devretmediği de değerlendirmede dikkate alınacaktır.

Tezin ilk bölümünde yukarıda değinilen hususlar çerçevesinde açıklamalar yapılarak ikinci bölümde yapay zekâ kavramı üzerinde durulmuş, bu teknolojinin kullanımı ve compliance alanında sağlayabileceği faydalardan bahsedilerek piyasada mevcut örnekler üzerinden aktarımlar yapılmıştır.

Özellikle yapay zekâ gibi yeni teknolojiler, şirketlerin yönetim ve operasyonel süreçlerini geliştirme ve kolaylaştırmada önemli bir rol üstlenmektedir. Çalışma içerisinde yer alan örneklerden de görüleceği üzere birçok büyük şirket, özellikle de finans sektöründe faaliyet gösteren şirketler yapay zekayı faaliyetlerine entegre etmiş durumdadır. Yapay zekanın şirket süreçlerinde kullanılmasıyla maliyet tasarrufu, zaman verimliliği, üretim artışı ve risk yönetimi gibi birçok konuda fayda elde etmek mümkündür. Makine öğrenmesiyle compliance süreçlerindeki karmaşık ve rutin olmayan birçok iş otomatize edilebilir; gerçek zamanlı izleme, uyarı sistemlerinin geliştirilmesi, mevzuat değişikliklerinin takip edilmesi, risk puanlaması ve belge analizi gibi çeşitli görevler etkin şekilde gerçekleştirilebilir. Bu bahsedilenlere IBM tarafından doğal dil işleme (NLP) tekniği ile geliştirilen Watson Compare & Comply çözümü önemli bir örnek olarak verilebilir. Bu yapay zekâ destekli platform ile yasal düzenlemelerin getirdiği sorumlulukların tespiti otomatize hale getirilerek yasal yükümlülüklerin yönetimi için şirketler içerisindeki ilgili birimlere destek sağlanmaktadır.

Sıkı düzenlemelere tabi olması neticesinde finans sektörü tarafından compliance teknolojilerinin yaygın olarak kullanılması sebebiyle konuya ilişkin ayrı bir başlık açılmıştır. Tüm ekonomik sistemi etkileyerek küresel sonuçlar doğurma potansiyeli sebebiyle düzenleyici organlar tarafından önem atfedilen ve özel olarak düzenlenen kara para aklama, terörizmin finansmanı ve müşterini tanı süreçlerine değinilmiştir. Finans kuruluşlarının hizmet alanlarını genişletmek amacıyla internet bankacılığı ve elektronik ödeme gibi teknolojileri de yaygın olarak kullanmaları geleneksel yöntemlerle bu konulara ilişkin olarak inceleme ve tespitlerin yapılması giderek zorlaşmaktadır. Bu doğrultuda finansal sektördeki şirketlerde özelikle nakit akışı, kredi skorlama ve suistimal tespit alanlarında yaygın olarak yapay zeka çözümleri kullanılmaktadır. Yapay zekadan faydalanılabilecek alanlara bir örnek olarak suçlu ve kara listeye alınan kişilerin tespiti için uluslararası veri tabanları üzerinden arama yapılması verilebilir.

Tüm bu çözümlerin şirketlerde kullanılması kritik olarak zaman ve maliyet avantajı sağlamakla birlikte karar alma süreçlerini geliştirerek uzun vadede şirketlerin ana faaliyet konularına odaklanmasını, farklı alanlarda gelişim göstermesini ve hedeflerine ulaşmasını kolaylaştıracaktır.

Bahsi geçen uygulamaların şirketlere katkılara yadsınamaz olmakla birlikte bir şirketin compliance süreçlerinde yapay zekanın kullanılıp kullanılmayacağına ilişkin karar verilirken değerlendirilmesi gereken bazı hususlar vardır. Zira her çözüm her şirket için uygun değildir. Bu noktada öncelikle yapay zekanın çözümünde kullanılacağı problem tespit edilerek konuyla ilgili elde bulunan veri setlerinin yeterliliği değerlendirilmelidir. Devamında ise yapay zekanın yalnızca geliştirilip uygulanması yetmeyecek olup sistemin devamlı izleme ve kontrol altında tutularak değişen koşullara uyarlanması gerekecektir.

Yapay zekâ çözümlerinin geliştirilmesi ve operasyonel süreçlere dahil edilmesi sırasında da bazı zorluklar ve engeller de ortaya çıkabilecektir. Bunlardan bazıları veriye ilişkin olarak kalite, tutarlılık veya ön yargı problemleri olabilir. Bunların dışında compliance süreçlerinin ana unsurunun hukuki düzenlemeler olması sebebiyle hukuki metinler ve hukuk sistemlerinin getirdiği ilgili şirkete ilişkin düzenlemelerin tespiti gibi birtakım zorluklar olacaktır.

Çalışmanın son bölümünde ise ilk iki bölümde detaylıca açıklanan compliance ve yapay zekâ kavramlarının sentezlenmesi neticesinde ortaya çıkacak muhtemel hukuki sonuçlar ve etkiler üzerinde durulmuştur. Yeni teknolojilerin şirketler tarafından kullanılması ve güncel hukuk düzeni üzerindeki etkileri dikkat çekicidir. Çalışma içerisinde bahsedildiği üzere yapılan araştırmalar ve anketler sonucu yapay zekanın büyük finansal etkilerinin gelecekte de artarak devam edeceği ve şirket yönetimlerini etkilemeyi sürdüreceği ortaya konmuştur. Yapay zekanın iş süreçlerinde kullanılması, birden fazla hedefe aynı anda ve etkin şekilde odaklanmayı mümkün kılacak; bu kapsamlı ve yaygın kullanımın etkileri giderek daha fazla hissedilecektir.

Bu bölümde öncelikle compliance alanında faydalanma açısından yapay zekanın şirketlerde hangi pozisyonlarda kullanımının mümkün olacağı değerlendirilmiştir. Şirketler içerisinde kullanılan yapay zekâ uygulamaları otonomi seviyesi üzerinden kategorize edilebilmektedir. Compliance alanında üretilen yapay zekâ çözümleri genel olarak "assisted" ve "advisory" olarak adlandırılan otonomi seviyesi nispeten daha az türlerdir. Bu araçlar şirketlerin karar alma süreçlerine kısmen dahil olup gerçek kişi çalışanlara tavsiyeler sunmakta ve yol göstermektedir. Her ne kadar yapay zekanın ulaşacağı son noktayla birlikte gelecekte tamamen yapay zekâ ile yönetilen şirketlerin ortaya çıkacağı kanısı mevcut olsa da günümüzdeki hukuki düzen içerisinde bu durumun yakın zamanda meydan gelmesi mümkün görünmemektedir.

Yapay zekanın şirketlerde bu kadar yaygın kullanılmasının, bu çalışma özelinde compliance alanında kullanılmasının, yönetim kurulunun özen ve gözetim yükümlülükleri üzerinde de bazı kaçınılmaz etkileri olacaktır. Şirketlerin faaliyet süreçlerindeki riskler, belirsizlikler ve tahmin edilemezlikler insan yeteneğiyle kontrol edilip vaktinde aksiyon alınamayacak seviyede seyredebilir. Bu noktada yapay zekâ destekli yöntemlerin kullanılması bir ihtiyaç olabilecektir. Ancak bu teknolojilere erişimin maliyetleri göz önünde bulundurulduğunda ve bu teknolojileri kullanıp kullanmamaya ilişkin verilecek karar işletme yönetimine ilişkin bir karar olup yönetim kurulunun bu hususta vereceği karar iş insanı kararı ilkesi kapsamında değerlendirilecektir.

Günümüz şartlarında yönetim kurulu üyelerini yapay zekâ çözümlerini kullanmalarını zorunlu tutmak mümkün görünmemektedir. Ancak özellikle büyük ölçekli firmaların yeterli maddi güce de sahip oldukları dikkate alındığında bu teknolojileri kullanması özen yükümlülüğü kapsamında gerekli görülebilir.

Yapay zekâ destekli çözümlerin kullanılmamasına ilişkin alınan kararın yerinde olduğu yönetim kurulu üyeleri tarafından açıklanabilir olmalıdır. Yapay zekâ kullanımına karar verilmesi durumunda, uygun sistem sağlayıcısının seçimi, yapay zekanın faaliyetlerinin izlenmesi ve hukuka uygunluğunun sağlanması da yönetim kurulunun özen yükümlülüğüne dahil olacaktır.

Yapay zekâ sistemlerinin kullanılması halinde gözetim yükümlülüğü açısından da yönetim kurulu üyelerinin yapay zekanın faaliyetlerini izlemesi ve sistemin düzgün işlerliğini sağlaması gerekecektir. Bu teknolojilerin ilerleyen zamanlarda daha da yaygın kullanılması halinde veri yönetimi hususu sebebiyle yönetim kurulu üyelerinin gözetim yükümlülüğünde ağırlaşma gerçekleşmesi mümkündür.

Bu bölümde bahsi geçen hususlarla ilgili sorumluluğun doğabileceği haller üzerinde de durularak değerlendirmeler yapılmıştır. Yönetim kurulu üyelerinin compliance alanında yapay zeka destekli uygulamaları kullanıp kullanmamaya ilişkin vereceği kararların iş insanı kararı olacağı belirtilerek kullanılması halinde yönetim kurulunun compliance yükümlülüğü açısından gerekli bir önlem aldığı değerlendirillerek sorumluluğunu hafifletebileceğine değinilmiştir. Devamında ise yapay zeka destekli çözümlerin kullanılmasıyla yapay zeka sebebiyle ortaya çıkabilecek hukuka aykırılıklara ilişkin sorumluluk ihtimalleri değerlendirilmiştir. Yapay zekanın hukuki kişiliğe sahip olmaması sebebiyle vereceği kararların sonuçlarından yönetim kurulu üyeleri sorumlu olmaya devam edecektir. Bu noktada yapay zekayı eşya olarak değerlendirilerek üretici ve satıcının sorumluluğuna gitmek mümkün olabilecektir.

Yapay zekanın compliance alanında şirketlerde kullanılmasının verilerin korunması, kara para aklamanın önlenmesine ilişkin süreçler, azınlık pay sahiplerinin hakları ve yönetim kurulu çeşitliliği üzerindeki etkilerine de değinilmiştir.

Yapay zekanın veriyle çalışan bir teknoloji olması sebebiyle her alanda olduğu gibi compliance alanında kullanılması da verilerin korunmasına ilişkin bazı çekincelere yol açabilecek, şirketlerin yeterli özeni göstermemesi halinde bu teknolojilerin kullanılması da compliance problemlerine sebep olabilecektir.

Yapay zekâ kullanımının benzer sebeplerle yönetim kurulu çeşitliliğine ilişkin olumsuz etkide bulunma riski olduğu gibi bu risklerin ortadan kaldırılması halinde yönetim kurulu çeşitliliğine ilişkin düzenlemelere uyum noktasında da katkıda bulunabilecektir. Son olarak yapay zekanın kurumsal yönetime sağlayacağı katkılar sebebiyle şirketlerdeki azınlık pay sahiplerinin haklarının etkin şekilde korunmasını sağlayacağına değinilmiştir.

Yukarıda yapılan açıklamalar doğrultusunda bu çalışmada şirketlerin compliance alanında yapay zekâ kullanımında mevcut durumu yansıtmak ve bu durumun muhtemel sonuçlarından bahsetmek hedeflemiştir. Teknolojilerin hızla gelişmesi sebebiyle yapay zekanın şirketler içerisinde alacağı rollerin artması ve hatta beklendiği gibi idari olmayan rollerde de yer alarak tüm şirket yönetimine hâkim olma ihtimali değerlendirildiğinde şirketler hukukunu ilgilendirecek yeni konuların ortaya çıkması kaçınılmaz olacak olup bu doğrultuda yeni araştırma ve inceleme konuları ortaya çıkabilecektir.

Anahtar Kelimeler: Compliance, Uyum, Yapay Zekâ, Anonim Şirket, Özen Yükümlülüğü.

ABSTRACT

Corporate Compliance Enhanced by Artificial Intelligence

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Master's Thesis, Department of Private Law

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Embracement of the concept of "compliance" by companies and its integration into their internal processes are important for avoiding legal sanctions. AI will have far-reaching consequences for companies particularly in the financial sector. The compliance sector has greatly profited from ML and its many solutions, especially the NLP techniques. AI may perform several jobs in the compliance sector, including real-time monitoring, building alarm systems, tracking legislative changes, risk scoring, and document analysis. The primary benefits of employing AI are cost and time savings, heightened productivity, risk mitigation, and improved decision-making.

This thesis gives a comprehensive review of the compliance concept and highlights its significance for companies, resulting in the development and enhancement of compliance programs. The role of compliance in various legislation is discussed broadly, with more detailed explanations provided for Turkish law.

The emphasis in this thesis is on the link between AI and compliance. Examples of AI and their potential applications in the field of compliance are presented. Challenges and limitations are also addressed.

Lastly, the legal impacts of AI on compliance, including the duty of care, the duty of oversight, and the liability of directors, are assessed. Furthermore, topics like data privacy, AML, board diversity, and minority shareholder protections are addressed.

Keywords: Compliance, Artificial Intelligence, Joint Stock Company, Duty of Care.

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DEDICATION

Dedicated to my beloved sister, Engin Şimşek.

Your presence was a gift.

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ABBREVIATIONS

ACFE : Association of Certified Fraud

AGI : Artificial General Intelligence

AI : Artificial Intelligence

AI Act : Artificial Intelligence Act

AML : Anti-Money Laundering

ANI : Artificial Narrow Intelligence

ASI : Artificial Super Intelligence

CFT : Counter Terrorist Financing

CMLR : Computational Models of Legal Reasoning

COSO : Committee of Sponsoring Organizations

DFA : Dodd-Frank the Wall Street Reform and Consumer Protection Act

DGCL : Delaware General Corporation Law

EMIR : European Markets and Infrastructure Regulation

EU : European Union

FATF : Financial Action Task Force

FinCEN : Financial Crimes Enforcement Network

FCA	: Financial Conduct Authority
GDPR	: General Data Protection Regulation
HLEG	: High-Level Expert Group on Artificial Intelligence
IIA	: Institute of Internal Auditors
ISO	: International Organization for Standardization
KVKK	: Personal Data Protection Law
KYC	: Know Your Customer
MASAK	: Financial Crimes Investigation Board
ML	: Machine Learning
NCA	: National Crime Agency
NLP	: Natural Language Processing
SPK	: Capital Markets Board
TCC	: Turkish Commercial Code
TKHK	: Consumer Protection Law
UK	: United Kingdom
US	: United States

INTRODUCTION

Compliance is crucial for companies as it ensures adherence to legal requirements and ethical standards, fostering trust and sustainability in their operations. In addition, companies that fail to maintain compliance within their entities may face legal sanctions. The sanctions imposed due to noncompliance hold significant weight. Apart from this, the significance of compliance extends not only to companies but also to society as a whole. While providing compliance, new technologies' vital effects on facilitating companies' assignments cannot be disregarded. New technologies enhance the management and operations of companies in all aspects, including compliance. Artificial intelligence (AI), particularly machine learning (ML), is revolutionizing the compliance approach by enhancing compliance tools and simplifying the process of achieving corporate compliance.

Corporate compliance will be evaluated in the scope of this research. The aim of this research is to provide a comprehensive representation of the concept, explaining its impacts and importance to companies. Additionally, the use of AI in compliance will be explained, specific examples from the market will be provided, and the consequences of combining these two concepts will be highlighted.

Since there is an increasing trend for companies to attach importance to the compliance, this research will help to understand the relation between the technology's impacts on compliance and its capability to facilitate compliance operations. During this process, the use of market examples, particularly from leading companies, will provide a clearer understanding of the situation. Even though all these developments have positive effects, they will also present some challenges and limitations. These developments have impacts on legal context. The topics like the position of the AI in the company while using it for compliance, impacts on directors' duties and liability and some other corporate governance-related issues will be evaluated.

The concept of compliance emerged in the US in relation to criminal law and garnered significant attention; however, US corporate law does not refer to it as frequently as criminal law does. Court decisions in the US contribute to improving compliance. One of the compliance-related questions is the duty of directors to comply and the potential liability that may arise from this duty. In Türkiye, the compliance concept is not regulated explicitly. The compliance concept is clarified through several relevant articles from different laws in literature. Turkish company law explains compliance duty of directors in the scope of the duty of care and the duty of oversight.

Like other areas of company law, new technologies's applications and impacts are evaluated in the literature. The use of AI in company-related areas has raised questions in the literature about the legal aspects of AI and its impact on current company law topics. Although some AI solutions are practically essential for companies, particularly those in the finance sector, the literature also evaluates the freedom of directors to make business decisions. Each of these decisions will have distinct consequences.

The first part of the thesis will provide a detailed explanation of the compliance concept and other related topics. The thesis will highlight the importance of compliance for companies, leading to the creation and extension of compliance programs. The place of the compliance in some legislation will be explained generally, and more comprehensive explanations will be given for Turkish law.

The second part will focus on the relationship between AI and compliance. First, the development of this technology and AI techniques will be discussed to understand their impacts on compliance programs. And then

AI examples and how they could be used for compliance and applications in compliance will be given. Some challenges and limitations will be mentioned as well. Compliance concepts and AI examples will be addressed in a broad manner, without relying on a single legislation. The research will focus on global topics, especially from the perspective of US, EU, and Turkish legislation and applications.

The final part of the thesis will evaluate the legal impacts of AI on compliance. The impact on subjects like duty of care, duty of oversight, and liability of directors will be evaluated. Additionally, the areas like data protection, board diversity, and minority shareholder protections will be mentioned as well. Thus, this research can contribute to the literature by providing a comprehensive view on the subject.

The thesis will seek to address topics such as: the definition of compliance, its relationship with companies, the nature of AI, its legislative articulation, the role of AI in compliance, applications of AI in compliance, potential consequences of AI utilization for compliance within companies, and the legal impacts of AI's application in compliance.

Due to the nature of the subject, this study will employ interdisciplinary research and doctrinal research methods as needed. The relationship between technology and law plays a crucial role in the thesis. While explaining AI’s application to compliance, technology-related fields like engineering and data science will be mentioned, and how these fields reflect on a field-related law will be examined.

Depending on the chapter and the topic, this research will employ various methods. The qualitative research method will be used while explaining the concepts, and the descriptive research method will be used to clarify the research and give examples.

CHAPTER I: COMPLIANCE

1. COMPLIANCE CONCEPT

1.1.Term and Definition

The term “compliance” is derived from the verb “comply”, which means conformity in fulfilling official requirements.[1] When the concept is interpreted in a narrow sense, what is meant is compliance towards legal provisions, in other words, compliance with all the rules in the legislation.[2] This concept might be referred to as “regulatory compliance”. In this context, "regulatory" refers to the primary and secondary regulations found in legislation, such as laws, statutes, regulations, communiqués, and others. In this respect, the concept of "regulatory compliance" covers the fulfillment of all obligations specified in positive law and spreads over an expansive area.[3]

Compliance, in a comprehensive sense, encompasses adherence to legal requirements, ethical standards, industry standards, and self-imposed obligations such as banks' due diligence standards, internal directives, and

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[1] *Merriam-Webster Dictionary*, “compliance,” accessed September 1, 2023, https://www.merriam-webster.com/dictionary/compliance.

[2] Hasan Pulaşlı, “Compliance Kavramı ve Yönetim Organının Compliance Sorumluluğu,” *Banka ve Ticaret Hukuku Dergisi* 35, no. 2 (2019): 31-32.

[3] Adem Sözüer, “Önsöz” *Türk-Alman Hukuk Sempozyumu Teori ve Uygulama Açısından İşletmelerde Hukuk Kurallarına Uygun Hareket Etme (Compliance) Tartışmaları,* ed. Erhan Temel, and Adem Sözüer (Adalet Yayınevi, 2013) VII; Cafer Eminoğlu, *Türk Ticaret Kanunu'nda Kurumsal Yönetim (Corporate Governance)* (On İki Levha Yayıncılık, 2014), 26; Hamdi Pınar, “Yönetim Kurulu Üyelerinin Şirketler Hukuku Açısından Rekabet İhlallerinden Dolayı Hukuki Sorumluluğu,” *Banka ve Ticaret Hukuku Dergisi* 25, no. 4 (2009): 397-398.

company circulars.[4] Moreover, the term compliance encompasses ensuring and monitoring that the company, its organs, and employees at all levels act in accordance with national and international regulations.[5]

What is important for corporate law terminology is the concept of "corporate compliance" which is generally used synonymously with compliance.[6] Regulatory compliance is also a component of corporate compliance. From a corporate law standpoint, the term compliance does not have a generally accepted definition. Depending on the context, it could refer to a procedure, internal control function, or a preventative legal function that lessens the likelihood of legal risks, particularly those involving damage to a company's reputation.[7]

Corporate compliance refers to the measures taken by a company to ensure adherence to regulations in its operations that exceed the obligation of acting in accordance with the law. Corporate compliance can be defined as the "set of internal processes used by firms to adapt behavior to applicable norms" or "internal programs that corporations adopt in order to educate employees, improve ethical norms, and detect and prevent violations of law".[8]

Regarding compliance in economic and legal contexts, it is evident that this notion is evolving around corporations, joint stock companies in particular.

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[4] Ali Paslı, " 'Compliance' Kavramının Anonim Ortaklıklar Hukukundaki Anlamı ve Sorumluluk Sistemine Etkisi," *İstanbul Üniversitesi Hukuk Fakültesi Mecmuası* 71, no. 2 (2013): 317, https://dergipark.org.tr/tr/download/article-file/97839; Pulaşlı, "Compliance," 32.

[5] Tuğçe Nimet Yaşar, *Anonim Şirketler Hukukunda Uyum (Compliance)* (On İki Levha Yayıncılık, 2020), 18.

[6] Pulaşlı, "Compliance," 31.

[7] Aybike Salman, "Türk Anonim Şirketler Hukukunda Compliance Kavramına İlişkin Bir İnceleme" (Phd diss., Bursa Uludağ University, 2024), 7-8, Ulusal Tez Merkezi (878042).

[8] Sean J. Griffith, "Corporate Governance in an Era of Compliance," *William & Mary Law Review* 57, no. 6 (2016): 2082-2083, https://ssrn.com/abstract=2766661; Miriam Hechler Baer, "Governing Corporate Compliance," *Boston College Law Review* 50, no. 1 (2009): 949, https://ssrn.com/abstract=1474291.

Furthermore, studies, legislation, and many other resources refer to joint stock companies in terms of compliance due to the fact that the failure of large joint stock companies to comply not only impacts their respective entities but also the entire economic system negatively.[9] Therefore, compliance aims to ensure that joint-stock companies, generally large and listed companies; their directors; and employees are aware of the regulations and comply with them.[10]

The primary purpose of compliance is to prevent compliance risks, which are the risk of violations of legal regulations, standards, and codes of conduct that lead to sanctions, harm, or reputational damage.[11] Due to the potential for substantial losses resulting from actions that contravene standards, compliance is an essential component of enterprise risk management, a framework designed to deliver a cohesive response to all risk sources affecting a company.[12]

From the point of view of business management, compliance could be described as "the process of ascertaining the adherence of business processes and applications to relevant compliance requirements, which may emerge from laws, regulations, standards, and codes of practice (such as ISO 9001), internal policies, and business partner contracts (e.g., service level agreements (SLAs))".[13]

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[9] Paslı, "Compliance," 318.

[10] Paslı, 319.

[11] Pulaşlı, "Compliance," 34; Hasan Pulaşlı, *Şirketler Hukuku Genel Esaslar,* 6th ed. (Adalet Yayınevi, 2022), 692.

[12] Griffith, "Corporate Governance," 2083.

[13] Amal Elgammal et al., "Formalizing and Appling Compliance Patterns for Business Process Compliance," *Software & Systems Modeling* 15 (2016): 120, https://doi.org/10.1007/s10270-014-0395-3.

1.2. Historical Development

The term "compliance" originated in the United States.[14] This term originally emerged in the context of criminal law and became prominent in the capital market regulations.[15] The most important of these regulations have been the Foreign Corrupt Practices Act, the Sentencing Reform Act, the Federal Sentencing Guidelines, and the Sarbanes-Oxley Act.[16]

Compliance's roots lean toward corporate governance. Corporate governance is a system that sets a framework to control relations between the parties related to a company, such as shareholders, management, the board of directors, and stakeholders.[17] In fact, compliance is a critical component of corporate governance, and effective compliance is evidence of effective corporate governance.[18] Since corporate wrongdoing has caused

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[14] Griffith, "Corporate Governance," 2084.

[15] Griffith, 2080.

[16] Foreign Corrupt Practices Act of 1977, 15 U.S.C. §§ 78dd-1 to 78dd-3; Sentencing Reform Act of 1984, Pub. L. No. 98-473, 98 Stat. 1937, 1987-2040. (Codified as 18 U.S.C. §§ 3551-3742 (1994) and 28 U.S.C. §§ 991-998 (1994). Also known as Title II of the Comprehensive Crime Control Act of 1984; Guidelines Manual, Washington, DC.: U.S. Sentencing Commission, 1987; Sarbanes-Oxley Act of 2002, Pub. L. No. 107-204, 116 Stat. 745; Bank Secrecy Act of 1970, 31 U.S.C. § 5311-5314, 5316-5322 and National Environmental Policy Act of 1969, 42 U.S.C. § 4321-4370f are some other examples. Griffith, 2084.

[17] Andrew Keay, "Stakeholder Theory in Corporate Law: Has It Got What It Takes?," *Richmond Journal Global Law & Business* 9, no. 2 (2010): 249, http://scholarship.richmond.edu/global/vol9/iss3/2; Eminoğlu, *Kurumsal Yönetim*, 1; Stjin Claessens and Burcin Yurtoglu, "Focus 10: Corporate Governance and Development – An Update," (World Bank Forum, 2012), 3-5, https://www.ifc.org/content/dam/ifc/doc/mgrt/focus10-cg-development.pdf.

[18] Ana-Maria Wall, "Guidelines for Artificial Intelligence-driven Enterprise Compliance Management Systems" (PhD thesis, Edinburgh Napier University, 2021), 17, https://doi.org/10.17869/enu.2022.2850798; In terms of corporate governance, two significant institutions have emerged in the last century. These are the Institute of Internal Auditors (IIA) and the Committee of Sponsoring Organizations (COSO). According to the introduction text on the IIA's website, it is "an international professional association with global headquarters and it is the internal audit profession's leader in standards, certification, education, research, and technical guidance throughout the world. Generally, members work in internal auditing, risk management, governance, internal control,

the collapse of several firms in the previous decades, such as Enron and Tyco, problems pertaining to corporate governance received thorough attention.[19]

The Sarbanes-Oxley Act of the US came into force in 2002, establishing a new regulatory entity, the Public Company Accounting Oversight Board, as a reaction to corporate scandals.[20] This federal law regulates the liability of boards and top executives, thereby drawing attention to compliance. The aim of this act is to enhance auditor independence in publicly held companies and strengthen corporate governance and auditing by ensuring transparency in the financial reporting process so as to lessen the possibility of such economic disasters in the future.[21]

Some have speculated that these companies' collapses were the beginning of the 2008 financial crisis.[22] Due to the global nature of today's organizations, geographical borders are insufficient to safeguard national economies, as the 2007–2008 financial crisis demonstrated. It is critical to identify corporate misconducts before they escalate into a crisis since the consequences of such misconducts affect more than just the company. Due to varied cultural norms and ideas, globalization has increased the challenges associated with building an international corporate governance

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information technology audit, education, and security." The IIA supported the establishment of COSO. The most used internal control framework, Internal Control—Integrated Framework, has been created by COSO. "About the IIA," About Us, The Institue of Internal Auditors, accessed September 15, 2023, https://www.theiia.org/en/about-us/.

[19] "Enron Corporation was the seventh-largest company in the United States. The collapse of that high-profile industrial giant, its massive manipulation of financial accounts, and the enormous personal profits in Enron stock by its executives led to lurid headlines and much sensationalism." Jerry W Markham, *A Financial History of Modern U.S. Corporate Scandals: From Enron to Reform* (M.E. Sharpe, 2006), xv, xviii, 95-140, 235-245.

[20] Markham, *From Enron to Reform,* xviii.

[21] Martin T. Biegelman and Daniel R. Biegelman, *Building a World-Class Compliance Program* (John Wiley & Sons, 2008), 78.

[22] Philmore Alleyne and Amanda Pierce, "Whistleblowing as a Corporate Governance Mechanism in the Caribbean," in *Snapshots in Governance: The Caribbean Experience*, ed. A. Bissessar and S. Ryan (University of the West Indies, 2017), 178.

framework for companies. Furthermore, globalization has augmented prospects for participating in corporate misconduct.

After the 2008 financial crisis, regulations, especially on financial institutions, were intensified. Dodd-Frank the Wall Street Reform and Consumer Protection Act (DFA) and the European Markets and Infrastructure Regulation (EMIR) are some examples of this trend.[23] With these regulations, it is expected to promote transparency in the market and, therefore, to reduce the likelihood of future financial crises. Now, there are many regulations to comply with, and companies can be fined for noncompliance with those. For instance, due to noncompliance with the European Anti-Money Laundering Directive, Standard Chartered Bank was fined £102.16 million by the FCA of the UK, in 2019.[24] The estimated economic repercussion of the 2007–2008 financial crisis is $17 trillion.[25]

This pattern results in the establishment of compliance programs. Companies are encouraged and even forced by independent administrative bodies to strengthen their compliance with regulations through the use of their sanctioning powers. The rise in regulation and its escalating complexity necessitated that companies develop strategies to ensure compliance.

[23] Hechler Baer, "Governing Corporate Compliance," 949-951; Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, Pub. L. No. 111-203, 124 Stat. 1376; Regulation (EU) No. 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC Derivatives, Central Counterparties, and Trade Repositories, 2012 O.J. (L 201), http://data.europa.eu/eli/reg/2012/648/oj.

[24] Financial Conduct Authority, "FCA fines Standard Chartered Bank £102.2 Million for Poor AML Controls," press release, April 9, 2019, https://www.fca.org.uk/news/press-releases/fca-fines-standard-chartered-bank-102-2-million-poor-aml-controls.

[25] Matt Reeder, "You Can't Stop What You Can't See: Complementary Risk Mitigation Through Compensation Disclosure," *William Mary Business Law Review* 8, no. 2 (2016-2017): 245, https://scholarship.law.wm.edu/cgi/viewcontent.cgi?article=1127&context=wmblr. Additionally, financial crises increased unemployment to greater than 10%.

The scandals prompted compliance programs to expand their scope to include more complexly regulated sectors. Companies were increasingly regulated as a result of increased attention to their unlawful and damaging practices. Sectors that encounter an increase in enforcement measures have witnessed a emphasis on compliance. As a result, companies in the financial services, pharmaceutical, and defense/aerospace sectors have more advanced compliance processes.[26]

2. IMPORTANCE AND BENEFITS OF COMPLIANCE

Compliance does not only aim to prevent non-compliances that concern the company's interests; it is also important for society, the environment, and the economy.[27] Corporate compliance is crucial in any system of well-crafted regulations, as it plays a major role in addressing significant issues.[28] Despite the important role companies play in society, their directors' motivations do not always lead to the beneficial results for society.[29] As a result, companies are subject to certain regulatory requirements.

Compliance serves as a preventive legal instrument.[30] The objective of preventive law is to eliminate unlawful occurrences, preserve the system,

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[26] The expansion of financial services compliance was driven by governmental concerns over terrorist financing and the necessity to address the financial crisis. Pharmaceutical compliance mostly pertains to consumer protection issues associated with medication marketing and government contracts via health insurance and aid. Similarly, the defense/aerospace sector pertains to the requirements of government procurement. Griffith, "Corporate Governance," 2099; Stuart Breslow and Alan Cohen, "The Changing Face Of Corporate Compliance and Corporate Governance," *Fordham Journal of Corporate & Financial Law* 21, no.1 (2016): 41, https://ir.lawnet.fordham.edu/jcfl/vol21/iss1/1.

[27] Yaşar, *Compliance*, 97-98.

[28] Cary Coglianese, "Building Better Compliance," *Texas Law Review Online* 100, (2022): 195, https://ssrn.com/abstract=4190579.

[29] Coglianese, "Building Better Compliance," 195.

[30] Paslı, "Compliance," 321; Pulaşlı, *Şirketler Hukuku Genel Esaslar*, 691; Yaşar, *Compliance*, 20.

and prevent illegal activities before they occur.[31] Conflicts that arise within or outside the organization have detrimental impacts on a company's reputation, trustworthiness, and market valuation.[32] Furthermore, this unlawfulness has repercussions not just for the companies themselves but also for other parties. Compliance reduces the possibility of these occurring and the negative effects of them.[33]

Compliance enables the detection and elimination of illegalities within the organization, therefore guaranteeing adherence to legal requirements.[34] Examples of critical compliance violations are unfair competition, trademark and patent violations, tort, bribery, cheating, manipulation, tax evasion, violation of bank and stock exchange law, and balance sheet law violations.[35]

Companies' and governments' interests generally differ from each other, and there are also companies' employees' interests to take into consideration.[36] As a result, there are three parties whose interests tend to conflict while a company operates. By coordinating the objectives of these parties, compliance aims to lessen the conflict of interests between them.[37]

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[31] Z. Jill Barclift, "Preventive Law: A Strategy for Internal Corporate Lawyers to Advise Managers of Their Ethical Obligations," *Journal of Legal Profession* 33, (2008): 34, http://open.mitchellhamline.edu/facsch/341.
[32] Paslı, "Compliance," 321.
[33] Paslı, 320-321.
[34] Pulaşlı, "Compliance," 27.
[35] Pulaşlı, 29.
[36] Eugene Soltes, "Evaluating the Effectiveness of Corporate Compliance Programs: Establishing a Model for Prosecutors, Courts, And Firms," *New York University Journal of Law & Business* 14, no.3 (2018): 977, https://www.hbs.edu/faculty/Pages/item.aspx?num=55233; Joseph L. Bower and Lynn S. Paine, "The Error at the Heart of Corporate Leadership," *Harvard Business Review,* May-June 2017, 2, https://hbr.org/2017/05/the-error-at-the-heart-of-corporate-leadership.
[37] Thomas Donaldson and Lee Preston, "The Stakeholder Theory of the Corporation: Concepts, Evidence, and Implications," *The Academy of Management Review* 20, no.1 (1995), https://doi.org/10.3138/9781442673496-011.

The way corporations are set up, directors have an incentive to increase profitability for their stockholders. Companies are frequently subject to regulatory responsibilities, which can cause civil or criminal fines, in areas where their actions may result in negative external effects. The purpose of these requirements is to guarantee that investor returns are in accordance with society's welfare.[38] Environmental regulations, workplace regulations, product regulations, bribery, corruption, and anti-money laundering regulations are directed toward this purpose. And when the possibility of the inefficiency of enforcement of regulations is high, high penalties are the solutions to ensure enforcement and therefore compliance.[39]

These fines are one of the biggest drivers for companies to pay attention to complying with the rules. Wells Fargo's[40] compliance failure was one of the incidents, showing how crucial it is to ensure compliance inside companies.[41] This bank, one of the largest banks in the US, initialized a marketing strategy of cross-selling.[42] This strategy became quite beneficial and helped to increase sales significantly. However, a significant number of

[38] John Armour et al., "Board Compliance," *Minnesota Law Review* 104, (2020): 1204, https://ssrn.com/abstract=3205600.
[39] Armour, "Board Compliance," 1204.
[40] John Armour, Jeffrey N. Gordon, and Geeyoung Min, "Taking Compliance Seriously," *Yale Journal on Regulation* 37, no. 1 (2020): 3, https://scholarship.law.columbia.edu/faculty_scholarship/2842. "Over nearly a decade, Wells Fargo, one of the largest banks in the United States—and the recipient of twenty-five billion dollars in government capital support during the financial crisis—engaged in widespread consumer-credit violations across three separate business areas: opening unauthorized credit-card and other accounts for existing customers; wrongfully charging fees for extensions of home-mortgage commitments; and wrongfully forcing auto loan debtors to take on insurance. Millions of account holders were affected. As these practices have come to light, the consequences for Wells Fargo have been severe, including not only hundreds of millions of dollars in fines, but also a cap placed on its growth until its governance, risk management, and compliance functions are reordered to the satisfaction of the Federal Reserve."
[41] *In re* Wells Fargo & Co. Shareholder Derivative Litigation, 282 F. Supp. 3d 1074 (N.D. Cal. Oct. 4, 2017). https://casetext.com/case/in-re-wells-fargo-co-sholder-derivative-litig.
[42] Armour, "Board Compliance," 1193. Cross-selling is a strategy of selling related products or services to a consumer based on an analysis of their purchase behavior.

the employees misused this strategy and sold these cross-selling products to customers without their knowledge or approval. The discovery of this misconduct revealed numerous deficiencies in the bank's compliance programs. Due to this failure, a $575 million fine was paid, and over 5,000 employees were fired.[43]

Wells Fargo was not the only company; there were many examples leading to billions of dollars in fines because of noncompliance. Similar to this situation, the biggest companies like Enron and WorldCom, BP, HSBC, General Motors, Volkswagen, Duke Energy, Citigroup, Equifax, and Facebook, ABB[44], Siemens[45], and UK Martin Brokers Limited paid billions.[46]

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[43] Chris Arnold, "Wells Fargo Fires 5,000 Employees Over Fake Accounts," *NPR,* September 9, 2016, https://www.npr.org/2016/09/09/493228759/wells-fargo-fires-5-000-employees-over-fake-accounts; Emily Glazer, "Wells Fargo to Pay States About $575 Million to Settle Customer Harm Claims," *The Wall Street Journal*, December 28, 2018, https://www.wsj.com/articles/wells-fargo-to-pay-states-about-575-million-to-settle-customer-harm-claims-11546016757.

[44] U.S. Department of Justice, "ABB Agrees to Pay Over $315 Million to Resolve Coordinated Global Foreign Bribery Case," press release, December 12, 2022, https://www.justice.gov/opa/pr/abb-agrees-pay-over-315-million-resolve-coordinated-global-foreign-bribery-case#:~:text=According%20to%20ABB%27s%20admissions%20and,to%20obtain%20business%20advantages%20in. "ABB Ltd. (ABB), a Swiss-based global technology company listed on the New York Stock Exchange with core businesses focused on electrification, automation, motion, and robotics has agreed to pay more than $315 million to resolve an investigation into violations of the Foreign Corrupt Practices Act (FCPA) stemming from the bribery of a high-ranking official at South Africa's state-owned energy company."

[45] Securities and Exchange Commission v. Siemens Aktiengesellschaft, Civil Action No. 08 CV 02167 (D.D.C.), https://www.sec.gov/litigation/litreleases/lr-20829. "SEC Files Settled Foreign Corrupt Practices Act Charges Against Siemens AG for engaging in worldwide bribery with total disgorgement and criminal fines of over $1.6 billion."

[46] John Armour, "Volkswagen's Emissions Scandal: Lessons for Corporate Governance? (Part I)," *Oxford Business Law Blog,* May 17, 2016, https://blogs.law.ox.ac.uk/business-law-blog/blog/2016/05/volkswagen%E2%80%99s-emissions-scandal-lessons-corporate-governance-part-1; John Armour, "Volkswagen's Emissions Scandal: Lessons for Corporate Governance? (Part II)," *Oxford Business Law Blog,* May 18, 2016, https://blogs.law.ox.ac.uk/business-law-blog/blog/2016/05/volkswagen%E2%80%99s-emissions-scandal-lessons-corporate-governance-part-2. The amount VW Group has paid so far for emission test manipulation, fraud and obstruction of justice crimes has exceeded

For instance, BP had to pay more than $575 million and cleanup expenses because of its Deepwater Horizon oil spill.[47] Another example is that in 2017, Google was fined €2.4 billion[48] by the European Commission for violating EU antitrust regulations due to AdSense's abuse of market dominance. Additionally, Google was fined €4.34 billion[49] in 2018 and €1.49 billion[50] in 2019 for the same reason. Also, in Türkiye, Google was fined

€30 billion; City of Birmingham Ret. and Relief Sys. v. Good, 177 A.3d 47 (Del. 2017); Jonathan M. Katz, "Duke Energy is Charged in Huge Coal Ash Leak," *New York Times*, February 20, 2015, https://www.nytimes.com/2015/02/21/us/duke-energy-is-charged-in-huge-coal-ash-leak.html; Andrew Ross Sorkin, "U.S. Bancorp Fined $613 Million for MoneyLaundering Violations," *New York Times*, February 15, 2018, https://www.nytimes.com/2018/02/15/business/dealbook/hedge-fund-tax-loophole.html; Michael Corkery, and Ben Protess, "Citigroup Agrees to $97.4 Million Settlement in Money Laundering Inquiry," *New York Times*, May 22, 2017, https://www.nytimes.com/2017/05/22/business/dealbook/citigroup-settlement-banamex-usa-inquiry.html; AnnaMaria Andriotis, Michael Rapoport, and Robert McMillan, " 'We've Been Breached': Inside the Equifax Hack," *The Wall Street Journal*, September 18, 2017, https://www.wsj.com/articles/weve-been-breached-inside-the-equifax-hack-1505693318; Lalita Clozel, "Equifax Ordered by Eight States to Beef Up Cybersecurity," *The Wall Street Journal*, June 27, 2018, https://www.wsj.com/articles/equifax-ordered-by-eight-states-to-beef-up-cybersecurity-1530131194; Deepa Seetharaman, and Kirsten Grind, "Facebook's Lax Data Policies Led to Cambridge Analytica Crisis," *The Wall Street Journal*, March 20, 2018, https://www.wsj.com/articles/facebooks-lax-data-policies-led-to-cambridge-analytica-crisis-1521590720; Deepa Seetharaman, "Facebook Shares Tumble as Growth Outlook Darkens," *The Wall Street Journal*, July 25, 2018, https://www.wsj.com/articles/facebook-revenue-falls-short-of-expectations-1532549650; Armour, "Board Compliance," 1194.

[47] Ed Crooks, "BP Draws Line Under Gulf Spill Costs," *Financial Times*, July 14, 2016, https://www.ft.com/content/ff2d8bcc-49e9-11e6-8d68-72e9211e86ab.

[48] European Commission, "Antitrust: Commission Fines Google €2.42 Billion for Abusing Dominance as Search Engine by Giving Illegal Advantage to Own Comparison Shopping Service," memo, June 27, 2017, https://ec.europa.eu/commission/presscorner/detail/en/memo_17_1785.

[49] European Commission, "Antitrust: Commission Fines Google €4.34 Billion for Illegal Practices Regarding Android Mobile Devices to Strengthen Dominance of Google's Search Engine," press release, July 18, 2018, https://ec.europa.eu/commission/presscorner/detail/en/IP_18_4581.

[50] European Commission, "Antitrust: Commission Fines Google €1.49 Billion for Abusive Practices in Online Advertising," press release, March 20, 2019, https://ec.europa.eu/commission/presscorner/detail/en/IP_19_1770.

₺296 million by the Turkish Competition Authority due to abusing market dominance in 2021.[51]

Compliance liability will be in question for those who served on the board of directors during the years when the dominance was abused, which resulted in the imposition of these large fines.[52] Avoiding high penalties is one of the benefits of compliance. According to benchmark research on 46 multinational companies, a typical multinational company supports their compliance program with about $3.5 million in annual expenses.[53] On the other hand, the cost of noncompliance is about $9.4 million.[54]

Another benefit of compliance related to penalties is that having an effective compliance program might be a penalty's discount reason for companies.[55]

3. COMPLIANCE PROGRAMS

3.1. In General

Numerous laws and regulatory frameworks affect companies, requiring them to implement procedures intended to prevent internal misbehavior and threatening them with severe punitive measures should they fail to do

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[51] Rekabet Kurumu, "Google Reklamcılık ve Pazarlama Ltd. Şti., Google International LLC, Google LLC, Google Ireland Limited ve Alphabet Inc. Hakkında Yürütülen Soruşturma Sonuçlandı," April 14, 2021, https://www.rekabet.gov.tr/tr/Guncel/google-reklamcilik-ve-pazarlama-ltd-sti--b127c3cc1e9deb11812e00505694b4c6.

[52] Pulaşlı, "Compliance," 30.

[53] Ponemon Institute LLC, *The True Cost of Compliance: A Benchmark Study of Multinational Organizations*, January 2011, 2, https://www.ponemon.org/local/upload/file/True_Cost_of_Compliance_Report_copy.pdf.

[54] Ponemon Institute LLC, *The True Cost of Compliance, 2.*

[55] Justice Manual, Washington, DC.: U.S. Department of Justice, § 9-28.000.

so.[56] Liability arising from noncompliance might be related to many parts and departments of the company.

The modern compliance department arises from an implicit governmental requirement that predominantly impact companies in heavily regulated sectors.[57] Whether companies comply with the legislation is checked through surveillance.

Compliance encompasses not just the objective of adhering to rules, but also encompasses entrepreneurial and organizational strategies and processes that proactively prevent infractions of norms, therefore mitigating liability.[58] Although regulatory agencies monitor companies in cases of noncompliance, there are many difficulties in doing that because of the vast quantity of activity occurring within businesses that can violate regulations. Therefore, companies are encouraged by authorities to develop their own reporting and monitoring systems.[59]

While the extent of compliance duty may differ among companies, publicly traded companies require a robust compliance management system due to their special structures.[60] The Compliance system to be established in listed companies should at least consist of the following elements: establishing a culture of compliance, assessing risk, determining the purpose, program and organization, communication, and compliance monitoring and improvement.[61]

[56] Hechler Baer, "Governing Corporate Compliance," 951-952.

[57] Griffith, "Corporate Governance," 2081.

[58] Pulaşlı, "Compliance," 32.

[59] Soltes, "Corporate Compliance Programs," 967-968.

[60] Yaşar, *Compliance*, 368.

[61] Yaşar, 372. While it is stated that the aforementioned elements are mandatory for listed companies, it is also accepted that all of the elements are necessary for all types of companies.

The compliance duty necessitates that the system and organization set up by the board of directors be suitable for the company's structure and risk profile. Therefore, the board of directors has the autonomy to determine how to meet its compliance duty, and the decisions made by the board are in the scope of business judgment rule. However, the measures must align with the company's size, structure, and operating area. For instance, small and medium-sized companies can integrate the compliance system into their existing company structure instead of creating a separate unit, while this is not possible in large companies, particularly those listed on stock exchanges.[62]

3.2. Development of Compliance Programs

Compliance programs are internal company procedures and processes established to assist businesses in this context.[63] Compliance programs are also internal strategies that are used by companies to educate, supervise, and discipline staff in accordance with applicable laws and regulations.[64]

The initiation of compliance programs dates back to the 1970s and 1980s when many corruption scandals involving defense contractors scamming the US government surfaced.[65] After that, defense contractors united and decided to work on self-regulating against wrongdoing.[66]

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[62] Yaşar, 368.

[63] Soltes, "Corporate Compliance Programs," 978; Armour, "Board Compliance," 1195; Root, "The Compliance Process," 203, 205-09.

[64] Veronica Root, "The Compliance Process," *Indiana Law Journal* 94, no. 1 (2019): 203, 205–209, https://www.repository.law.indiana.edu/ilj/vol94/iss1/.

[65] John D. Copeland, "The Tyson Story: Building an Effective Ethics and Compliance Program," *Drake Journal of Agricultural Law* 5, (2000): 315-316, https://aglawjournal.wp.drake.edu/wp-content/uploads/sites/66/2016/09/agVol05No2-Copeland.pdf.

[66] Kimberly D. Krawiec, "Cosmetic Compliance and the Failure of Negotiated Governance," *Washington University Law Quarterly* 81, (2003): 497, https://scholarship.law.duke.edu/faculty_scholarship/2046.

The Federal Sentencing Guidelines were amended by the United States Sentencing Commission in 1991 in this context.[67] The Guidelines encourage businesses to establish compliance programs; according to the Guidelines, companies that have effective compliance programs might gain a penalty's discount. In line with this regulation, it is possible that penalties might be lowered by up to 95%.[68] After this legislation, compliance programs gained significance, and the results have become visible in the compliance industry.[69] Companies established official codes of conduct, provided anonymous whistleblower hotline access, and required training programs.[70] As an example of the direct effect of Guidelines is that, in the US, 530 firms were sentenced to create compliance programs between 2002 and 2016.[71]

The Guidelines were revised to explain and define the components that effective compliance programs should include in 2004.[72] Seven elements for an effective compliance program are establishing written policies and procedures, assignment of responsibility, effective training and education, effective lines of communication, conducting monitoring and auditing, alignment of incentives, and appropriate remediation.[73]

In the last quarter of the century, compliance programs have developed, become more comprehensive, and companies have raised their budgets on compliance and increased the number of employees working in compliance

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[67] Guidelines Manual, § 8c2.5(F).
[68] Ethics Resource Center, *The Federal Sentencing Guidelines for Organizations at Twenty Years: A Call to Action for More Effective Promotion and Recognition of Effective Compliance and Ethics Programs,* 2012, 22, https://rcgce.camlaw.rutgers.edu/rcgce/wp-content/uploads/sites/6/2022/10/rcgce_twenty_years.pdf.
[69] Ethics Resource Center, *The Federal Sentencing Guidelines,* 2.
[70] Soltes, "Corporate Compliance Programs," 969.
[71] Soltes, 970.
[72] Griffith, "Corporate Governance," 2085-2086.
[73] Sentencing Guidelines, supra note 21, § 8B2.1(b).

programs.[74] In line with all these developments, in many companies, the establishment of compliance departments has started.[75]

Compliance management systems evolved in the context of corporate governance and corporate controls. After the Sarbanes-Oxley Act in 2002, compliance started to take shape as a program in the companies.[76] Parallel to that, an enterprise risk management concept was also developed.[77] Effective compliance management requires effective risk management; hence compliance and risk bodies demand suitable corporate governance.[78]

Compliance programs aim to manage compliance systematically with procedures and routines by addressing both internal and external risks.[79] The International Organization for Standardization (ISO) has a standard in terms of that. ISO 37301:2021 Compliance Management Systems Requirements with Guidance for Use "specifies requirements and provides guidelines for establishing, developing, implementing, evaluating, maintaining, and improving an effective compliance management system within an organization."[80]

Demonstrating conformity with the ISO 37301 Compliance Management Standard may be achieved through the use of certified compliance

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[74] Laura Noonan, "Banks Face Pushback Over Surging Compliance and Regulatory Costs," *Financial Times*, May 28, 2015, https://www.ft.com/content/e1323e18-0478-11e5-95ad-00144feabdc0.

[75] Griffith, "Corporate Governance," 2077.

[76] Deloitte, *Building World-Class Ethics and Compliance Programs: Making a Good Program Great Five Ingredients for Your Program*, 2017, 2, https://www2.deloitte.com/content/dam/Deloitte/no/Documents/risk/Building-world-class-ethics-and-compliance-programs.pdf.

[77] Wall, "Guidelines," 18.

[78] Pulaşlı, "Compliance," 34.

[79] Wall, "Guidelines," 18.

[80] *Compliance Management Systems-Requirements with Guidance for Use*, ISO 37301:2021 (The International Organization for Standardization, published on April 13, 2021), https://www.iso.org/obp/ui/en/#iso:std:iso:37301:ed-1:v1:en.

management systems.[81] In addition, it is imperative for compliance officers to have a personal certificate to validate their competence, and it is advisable that compliance audits be conducted by proficient economic attorneys.[82]

3.3.Scope of the Compliance Programs

Some define corporate compliance as having three main components: "defining and documenting standards of conduct and ethical behavior by the company, training staff to stick to these standards, and implementing an internal review and audit protocol."[83] There are also three objectives that are described in numerous memos by the US Department of Justice and that are anticipated to be accomplished by compliance programs.[84] These three objectives are preventing misconduct before occurring, detecting

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[81] Pulaşlı, "Compliance," 39-41. "Austria is the first country to certify the Compliance Management System according to the previous version of the standard, the ISO 19600:2014 Compliance-Management Standard. Switzerland, on the other hand, preferred to prepare its own Compliance Standard instead of implementing the ISO 19600 Compliance Management System exactly. In the Germany, a Standard called TR CMS 101:2011 for Compliance Management System that is suitable for all organizations has been developed by Rheinland TÜV (Technische Überwachungsverein, e.V). Institut der Wirtschaftsprüfer in Deutschland e.V. (IDW) (Institute of Public Auditors in Germany, Incorporated Association) published the "Principles of the Proper Audit of the Compliance Management Systems" [Grundsätze der Ordnungsmäßiger Prüfung von Compliance Management Systemen (IDW PS 980)] on 11.3.2011. In February 2007, the Government Commission added the concept of compliance and the principle for establishing a related organization to the German Corporate Governance Codex [Der Deutsche CorporateGovernanceKodex (DCGK)]. Thus, it was indirectly ensured that the "compliance declaration" (Entsprechenerklärung) in §161 of the German Joint Stock Companies Act (AktG) and the DCG-Codex compliance declarations in many other laws would include the concept of Compliance."

[82] Pulaşlı, "Compliance," 39.

[83] Wall, "Guidelines," 20.

[84] Memorandum, "Principles of Federal Prosecution of Business Organizations," January 20, 2003, Larry Thompson; Memorandum, "Principles of Federal Prosecution of Business Organizations," August 28, 2008, Mark Filip.

misconduct when it occurs, and aligning corporate activities with regulation.[85]

3.3.1. Preventing Misconduct

While reaching the objective of preventing misconduct before occurring, some key measures can be helpful, like employee selection, training employees, and establishing a decision advisor hotline.[86]

During the hiring process or for a while after hiring, it is possible to measure an employee's risk appetite and inclination toward noncompliance.[87] In that way, companies can eliminate the person from the hiring process. An example to show how companies can evaluate the willingness of new hires to follow rules happened at one of the biggest banks, Goldman Sachs.[88] After hiring, the bank put hundreds of analysts through a training and orientation program. And they took an exam as part of the program. It was possible to retake the exam if they failed. In spite of being warned not to cheat, the analysts used Google to search for terms that were on the exam, and as a result, some of the analysts got fired. This incident is an instance of how companies can evaluate the willingness of new hires to follow rules.

Misconduct may also be prevented and discouraged by informing staff about the firm's applicable rules and regulations, which they are required to follow. The scope of the training programs can differ based on the

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[85] Soltes, "Corporate Compliance Programs," 974.

[86] Philip A. Wellner, "Effective Compliance Programs and Corporate Criminal Prosecutions," *Cardozo Law Review* 27, no.1 (2005): 518.

[87] Soltes, "Corporate Compliance Programs," 980.

[88] Julia La Roche, "This is How the Goldman Sachs Analysts Who Got Fired Were Cheating," *Business Insider*, October 19, 2015, https://www.businessinsider.in/This-is-how-the-Goldman-Sachs-analysts-who-got-fired-were-cheating/articleshow/49458389.cms.

company's business and risk profile, but it is important to cover the main subjects in terms of compliance, such as bribery, privacy, and antitrust.[89]

Decision advisory hotlines are another measure that can be used to prevent misconduct from occurring. The implementation of this kind of measure helps employees when they face challenging situations and need advice for the right action.[90] Consequently, the hotlines give businesses a chance to step in and intervene in the decision-making processes that may damage the company.

3.3.2. Detecting Misconduct

3.3.2.1. General

Monitoring systems and building a whistleblower hotline are some other measures that can be used for another objective: detecting misconduct after it occurs. Monitoring systems with data analytics, aka. forensic data analytics, is a beneficial method to observe happened misconducts.[91] Depending on the sector a company operates in, the aim of the monitoring can differ.

For companies to reach compliance, whistleblowing is a significant component that will be mentioned in detail in the next subsection. It is a measure that benefits the employees, sometimes even other related people, who encounter misconduct, giving them an opportunity to report it.[92]

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[89] Soltes, "Corporate Compliance Programs," 981.
[90] Soltes, 981.
[91] Ernst & Young, "Global Forensic Data Analytics Survey 2016: Shifting into High Gear: Mitigating Risks and Demonstrating Returns," (2016), 5, https://ey-france.relayto.com/e/shifting-into-high-gear-mitigating-risks-and-demonstrating-returns-0ynurmgu.
[92] Alexander Dyck, Adair Morse, and Luigi Zingales, "Who Blows the Whistle on Corporate Fraud?," (NBER Working Paper Series, Cambridge, MA, February 2007), http://www.nber.org/papers/w12882.

Whistleblower hotlines are systems that might be on the telephone, e-mail, or physical.[93] Confidentiality is the main element of these hotlines to protect reporters and be successful.

3.3.2.2.Whistleblowing as a Compliance Program Measure

a. In General

Whistleblowing "is a corporate governance control tool that can be used to minimize mismanagement and corruption in organizations," as stated by Lewis.[94] The term "whistleblowing" was first used in the 1970s by consumer activist Ralph Nader to enhance insiders' repute by revealing scandals.[95] As a result of globalization, whistleblowing is a crucial instrument, especially for multinational companies operating abroad.[96] Nowadays, whistleblowers are seen as essential parts of the corporate governance structure, which is meant to improve in-house audits and management of agency costs in big, publicly traded companies.[97]

As stated in the Civil Law Convention on Corruption which was adopted by the Committee of Ministers in November 1997, whistleblowing is

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[93] Soltes, "Corporate Compliance Programs," 983.

[94] David B. Lewis, *Whistle-Blowing at Work* (Athlone Press, 2001), quoted in Uchechukwu Nwoke, "Whistle-blowing as a corporate governance mechanism: South Africa and Nigeria in perspective," *Journal of Corporate Law Studies* 19, no. 2 (2019): 426, https://doi.org/10.1080/14735970.2018.1561795.

[95] Ralph Nader, Peter J. Petkas, and Kate Blackwell, eds., *Whistle Blowing: The Report Of The Conference On Professional Responsibility*, (Grossman Publishers, 1972), quoted in Geoffrey Christopher Rapp, "Four Signal Moments in Whistleblower Law: 1983– 2013," *Hofstra Labor & Employment Law Journal* 30, no. 2 (2013): 389, https://scholarlycommons.law.hofstra.edu/hlelj/vol30/iss2/5.

[96] Uchechukwu Nwoke, "Whistle-blowing as a corporate governance mechanism: South Africa and Nigeria in perspective," *Journal of Corporate Law Studies* 19, no. 2 (2019): 423, https://doi.org/10.1080/14735970.2018.1561795.

[97] Jonathan Macey, "Getting the Word Out about Fraud: A Theoretical Analysis of Whistleblowing and Insider Trading," *Michigan Law Review* 105, no. 8 (2007): 1901–1902, https://repository.law.umich.edu/mlr/vol105/iss8/9.

reporting suspected corruption with reasonable grounds to responsible persons or authorities in good faith.[98] Detailed explanation of whistleblowing is made in the U.K. Public Interest Disclosure Act as "any disclosure of information which, in the reasonable belief of the worker making the disclosure, tends to show one or more of the following— (a)that a criminal offence has been committed, is being committed or is likely to be committed, (b)that a person has failed, is failing or is likely to fail to comply with any legal obligation to which he is subject, (c)that a miscarriage of justice has occurred, is occurring or is likely to occur, (d)that the health or safety of any individual has been, is being or is likely to be endangered, (e)that the environment has been, is being or is likely to be damaged, or (f)that information tending to show any matter falling within any one of the preceding paragraphs has been, is being or is likely to be deliberately concealed."[99]

Whistleblowing can be defined as a "dynamic process involving at least three social actors."[100] These actors are the persons who commit the claimed misconduct; whistleblowers who notice the misconduct, define it, and report it; and persons who receive the report of misconduct.[101]

The act of an employee disclosing, based on reasonable evidence, an illegal, immoral, or illegitimate practice under company control that is likely to cause significant harm to the persons within the company who can change this practice is known as whistleblowing.[102] If the persons who are reported

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[98] Civil Law Convention on Corruption, Council of Europe, November 4, 1999, ETS No. 174, Article 9, https://rm.coe.int/168007f3f6.

[99] Public Interest Disclosure Act, 1998, c. 23, § 43B. https://www.legislation.gov.uk/ukpga/1998/23/section/1.

[100] Janet P. Near and Marcie P. Miceli, "Whistleblowing: Myth and Reality," *Journal of Management* 22, no. 3 (1996): 508, https://doi.org/10.1016/S0149-2063(96)90034-3.

[101] Near and Miceli, "Whistleblowing," 508.

[102] Janet P. Near and Marcia P. Miceli, "Organizational Dissidence: The Case of Whistle-blowing," *Journal of Business Ethics* 4, no. 1 (1985), https://doi.org/10.1007/BF00382668.

are unable to change the practice, the employee who discloses it should first report it to the appropriate organizations; if that is not feasible, they should inform the public.[103] Depending on the organizational structure of the company, the authority to report may potentially change.[104] In larger organizations, it could be more convenient to report a problem to a dedicated department, such as a compliance officer, but in smaller companies, where such departments do not exist, it might be better to report to managers directly.[105]

b. Relevant Legislation

Due to the indisputable benefits of whistleblowing and the necessity for legislation, many countries have made regulations, particularly regarding the protection of whistleblowers, in their domestic laws.[106] In the US, laws protecting whistleblowers were merged into the Sarbanes–Oxley Act[107] and the Dodd–Frank Act[108] as it became clear once more how crucial whistleblowers' actions are, particularly in averting financial crises, including Enron and WorldCom.[109] The False Claims Act[110] and the Insider Trading and Securities Enforcement Act[111] are other acts regarding

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[103] Meltem Karatepe Kaya and Ekrem Solak, "İhbarcılık Kavramının Karşılaştırmalı Hukuk Işığında Türk Şirketler Hukuku Kapsamında Değerlendirilmesi," *İstanbul Hukuk Mecmuası* 81, no. 3 (2023): 707, https://doi.org/10.26650/mecmua.2023.81.3.0001.

[104] Yaşar, *Compliance,* 386-388; Karatepe Kaya and Solak, "İhbarcılık," 711.

[105] Karatepe Kaya and Solak, 13.

[106] "Whistleblower Laws Around the World," National Whistleblower Center, accessed April 10, 2024, https://www.whistleblowers.org/whistleblower-laws-around-the-world/.

[107] Sarbanes-Oxley Act of 2002, Pub.L. No. 107-204, § 806, 116 Stat. 745, 802–04.

[108] Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, Pub. L. No. 111-203, 124 Stat. 1376.

[109] Leonardo Labriola, "Paying Too Dearly for a Whistle: Properly Protecting Internal Whistleblowers," *Fordham Law Review* 85, (2017): 2844-2846, https://ssrn.com/abstract=2907047.

[110] The False Claims Act of 1863, 31 U.S.C. § 3729 – 3733.

[111] The Internal Revenue Code of 1988, 26 U.S.C. § 7623.

whistleblower protection. The Public Interest Disclosure Act, which basically regulates which reports made by whistleblowers will be protected and how and to whom the reporting can be made, was also enacted in the United Kingdom in 1998.[112] Another regulation is the European Union Notification Directive No. 2019/1937, which was adopted by the European Union in 2019.[113]

In spite of the international instances and the significance of the concept, there is no domestic regulation directly related to company law on the concept of whistleblowing in Türkiye yet.[114] However, in the Regulation on Active Cooperation for Detecting Cartels (the Leniency Regulation), which is prepared based on Article 16 of the Act on the Protection of Competition, the leniency applications can be made to the Turkish Competition Authority.[115] According to Article 1 of the Leniency Regulation, it may be decided that the fines within the scope of Article 16 of the Act on the Protection of Competition shall not be imposed on the undertakings that cooperate to reveal the cartels and the undertaking managers and employees or that the fines to be imposed shall be reduced. It is intended to facilitate investigations and expose cartels with this regulation.

It is crucial to establish the necessary legal protections in Türkiye, particularly for the protection of whistleblowers, since the concept of whistleblowing is not well represented.

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112 Public Interest Disclosure Act, 1998, (UK), c.23. https://www.legislation.gov.uk/ukpga/1998/23/contents

113 Directive (EU) 2019/1937 of the European Parliament and of the Council of 23 October 2019 on the Protection of Persons who Report Breaches of Union law, 2019 O.J. (L 305), http://data.europa.eu/eli/dir/2019/1937/oj.

114 Karatepe Kaya and Solak, "İhbarcılık," 733.

115 Regulation on Active Cooperation for Detecting Cartels, No. 32401, https://www.mevzuat.gov.tr/MevzuatMetin/yonetmelik/7.5.40495.pdf.

3.3.3. Aligning Corporate Activities with Regulations

To reach the last objective, implementing formal codes of conduct and policies, ensuring accountability, and risk assessment are some actions. Risk assessment highlights the many hazards that employees are prone to encounter in different sections of the company, enabling organizations to allocate resources and attention to those specific areas.[116] If there is any suspected wrongdoing that occurs and is discovered, the code will be helpful to offer instructions on how to handle and resolve the issue.[117] Accountability encompasses the series of protocols that companies establish to guarantee the responsibility of personnel in case of any violation of company policies.[118]

4. COMPLIANCE IN COMPARATIVE LAW

4.1. In the United States

The requirements of the Guidelines have resulted in the implementation of compliance systems by nearly all American businesses.[119] Compliance receives a lot of attention in criminal law doctrine because of the Guidelines' explicit rules about it, while US corporate law doctrine does not address it as much.[120]

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[116] Soltes, "Corporate Compliance Programs," 983.

[117] Mark Schwartz, "The Nature of the Relationship Between Corporate Codes of Ethics and Behaviour," *Journal of Business Ethics* 32, no.3 (2001), http://dx.doi.org/10.1023/A:1010787607771.

[118] Soltes, "Corporate Compliance Programs," 984.

[119] Norwood P. Beveridge, "Does the Corporate Director Have a Duty Always to Obey the Law?," *DePaul Law Review* 45, (1996): 729, https://via.library.depaul.edu/law-review/vol45/iss3/6.

[120] Griffith, "Corporate Governance," 2080.

In US corporate law, the board of directors' oversight duty includes the compliance duty.[121] The oversight duty of the board of directors was first explicitly acknowledged in 1963 in the Graham v. Allis-Chalmers Manufacturing Co. decision (Graham decision) in the State of Delaware.[122] The decision does not explicitly mention the compliance concept, but it clarifies the compliance duty within the scope of the oversight duty. The scope of the board's oversight duty is generally determined by decisions made by the courts.[123]

Furthermore, the Sarbanes-Oxley Act, the Model Business Corporation Act[124], Principles of Corporate Governance compiled by the American Law Institute, and some other provisions regarding the capital markets encompass regulations pertaining to oversight and compliance duties.[125]

In US law, a corporation is generally "managed by or under the direction of a board of directors".[126] Directors have "fiduciary duties" towards both the company and the shareholders, and these are divided into two sub-duties: "duty of loyalty" and "duty of care".[127] The board of directors is responsible for managing and overseeing the company within the bounds of these duties.[128]

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121 Hechler Baer, "Governing Corporate Compliance," 961-962; Fairfax, "Managing Expectations," 421.

122 Graham v. Allis-Chalmers Manufacturing Co., 41 Del. Ch. 78, 188 A.2d 125 (Del.Supr. 1963), http://law.justia.com/cases/delaware/supreme-court/1963/188-a-2d-125-3.html;

123 Examples include the cases of In re Caremark International Inc. Derivative Litigation, Stone v. Ritter; *In re* Caremark International Inc. Derivative Litigation, 698 A.2d 959 (Del. Ch. 1996); Stone v. Ritter, 911 A.2d 362 (Del. 2006).

124 American Bar Association, Committee on Corporate Laws, *Model Business Corporation Act*, (Chicago, 2016).

125 Yaşar, *Compliance*, 160.

126 Delaware Code, Title 8, § 141(a). (Delaware General Corporation Law)

127 Delaware Code, Title 6, § 15-404(a).

128 Lisa Fairfax, "Managing Expectations: Does the Directors' Duty to Monitor Promise More Than It Can Deliver?," *University of St. Thomas Law Journal* 10, no.2 (2012): 419-420, https://scholarship.law.upenn.edu/faculty_scholarship/2427.

4.2.In Germany

The doctrine is contentious regarding the existence of a general legal obligation for companies to implement a compliance system under German law; however, the predominant view asserts that the management board in joint-stock companies is obliged to ensure legal compliance within the company.[129] With the regulations and rules regarding special types of companies, "compliance" has become a legal term in German law.[130] Some examples are the German Stock Corporation Act[131], German Commercial Code[132], German Banking Act[133], German Securities Trading Act [134], Act on the Supervision of Insurance Undertakings[135] and the German Corporate Governance Codex[136].[137]

The compliance duty is a natural component of the management board's management authority and specific duties that are regulated under § 76/I AktG, according to the prevailing view in German law.[138] The same law

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129 Christoph E. Hauschka, Klaus Moosmayer, and Thomas Lösler, *Corporate Compliance – Handbuch der Haftungsvermeidung im Unternehmen*, 3rd ed. (C.H. Beck Verlag, 2016), 30 and Gerald Spindler and Eberhard Stilz, *Kommentar zum Aktiengesetz Band I,* 3rd ed. (C.H. Beck Verlag, 2015), 47-49 quoted in Tuğçe Nimet Yaşar, *Anonim Şirketler Hukukunda Uyum (Compliance)* (On İki Levha Yayıncılık, 2020), 191.

130 Yaşar, 230.

131 Aktiengesetz (AktG), https://www.gesetze-im-internet.de/englisch_aktg/index.html.

132 Handelsgesetzbuch (HGB), https://www.gesetze-im-internet.de/englisch_hgb/index.html.

133 Kreditwesengesetz (KWG), https://www.gesetze-im-internet.de/kredwg/.

134 Wertpapierhandelsgesetz (WpHG), https://www.gesetze-im-internet.de/wphg/.

135 Versicherungsaufsichtsgesetz (VAG), https://www.gesetze-im-internet.de/vag_2016/.

136 Der Deutsche Corporate Governance Kodex (DCGK), https://www.dcgk.de/en/code.html.

137 Yaşar, *Compliance*, 194-229.

138 Michael Arnold and Moritz Rudzio, "Die Pflicht des Vorstands der Aktiengesellschaft zur
Einrichtung und Ausgestaltung einer Compliance-Organisation", *KSzW* 7, no.4 (2016): 232; Bernd Schmidt, *Compliance in Kapitalgesellschaften*, (Nomos, 2010), 26; Spindler and Stilz, *Kommentar zum Aktiengesetz Band I,* 63 quoted in Tuğçe Nimet Yaşar, *Anonim Şirketler*

determines the rules of conduct that the management board must adhere to while managing the company within the scope of the expression "the due care of a prudent manager".[139] The compliance duty is elucidated by the same paragraph of the law.

The management board's duty of care encompasses three distinct duties: the duty of care in the narrow sense, the duty of oversight, and the duty of compliance with the law (narrow compliance).[140] These three duties interact and intersect with each other; it is not possible to fulfill one obligation without the other obligations.[141]

4.3. In the United Kingdom

To control corporate governance disasters in the 1980s, the UK passed several laws, beginning with the Financial Services Bill in 1986.[142] In the UK, the term compliance first appeared around 1986 with the Financial Services Act.[143] This Act is followed by several further Acts of Parliament pertaining to the financial services sector, including the Company Directors Disqualification Act 1986, the Insolvency Act 1986, the Banking Act 1987,

Hukukunda Uyum (Compliance) (On İki Levha Yayıncılık, 2020), 194; Aktiengesetz (AktG), § 76/I.

139 Aktiengesetz (AktG), § 93/I.

140 Yaşar, *Compliance*, 195.

141 Yaşar, 195.

142 Katrin Kanzenbach, "The Role of the Compliance Officer – A Comparison of US, UK and German law and Practice" (PhD diss., Universidad Católica San Antonio de Murcia, 2017), 140, http://hdl.handle.net/10952/2893.

143 Chris Taylor, "The Evolution of Compliance," *Journal of Investment Compliance* 6, no.4, (2005): 54, http://dx.doi.org/10.1108/15285810510681883.

the Companies Act 1989, and the Criminal Justice Act 1993.[144] All of these laws established a legal foundation for the advancement of compliance.[145]

The Companies Act of 2006 explicitly outlines the types of general duties of directors.[146] Directors of UK companies are subject to fiduciary duties and the duty of reasonable care. The said duties "are based on certain common law rules and equitable principles." Nevertheless, the English courts have not addressed any explicit oversight duty or compliance duty for directors.[147]

4.4. In Türkiye

4.4.1. Relevant Legislation

Compliance duty is not explicitly regulated in Turkish law. However, there are provisions regarding compliance in various codes like the Turkish Commercial Code (TCC) No. 6102, Capital Market Law No. 6362, and Banking Law No. 5411.[148]

According to Article 1529 of TCC, the Capital Markets Board (SPK) is the authorized body to determine corporate governance principles in public joint stock companies, the principles of the board of directors' statement regarding this, and the rating rules and results of companies in this regard.

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[144] Company Directors' Disqualification Act, 1986, c. 46; Insolvency Act, 1986, c. 45; Banking Act 1987 (Repealed), 1987, c. 22.; Companies Act, 1989, c. 40; Criminal Justice Act, 1993, c. 36; Kanzenbach, "Compliance Officer," 140.
[145] Kanzenbach, 150.
[146] Companies Act 2006, c. 46, § § 171-177.
[147] Kanzenbach, "Compliance Officer," 377.
[148] Turkish Commercial Code, No. 6102, https://www.mevzuat.gov.tr/mevzuatmetin/1.5.6102.pdf; Capital Market Law, No. 6362, https://www.mevzuat.gov.tr/mevzuat?MevzuatNo=6362&MevzuatTur=1&MevzuatTertip=5; Banking Law, No. 5411, https://www.bddk.org.tr/Mevzuat/DokumanGetir/961.

Also, Article 17 of the Capital Market Law states that the procedures and principles regarding the content and publication of corporate governance principles and corporate governance compliance reports in public joint stock companies, the rating of companies' compliance with corporate governance principles, and independent board memberships will be determined by the SPK. According to the same article, SPK is authorized to require public joint stock companies whose shares are traded on the stock exchange to comply with corporate governance principles and to determine the procedures and principles regarding this.

Nevertheless, the SPK communiqués do not clearly or directly incorporate the idea of compliance. Furthermore, the TCC and secondary legislation do not explicitly incorporate the concept of compliance.[149]

It is accepted in Turkish doctrine that the board of directors is obliged to carry out a compliance program or organization due to the TCC Article 369/1 and TCC Article 375/1.[150] These articles of the TCC is intended for all joint stock companies, regardless of whether they are public or closed.[151] It is accepted that this compliance duty lies with the company's board of directors.

The regulations on banks explicitly delineate the compliance responsibilities of their boards of directors; however, they do not establish new obligations but rather clarify and elaborate on the supervisory and compliance duties stipulated in the Turkish Commercial Code.[152] Based on

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149 Pulaşlı, "Compliance," 49, Pulaşlı, *Şirketler Hukuku Genel Esaslar,* 693.

150 Pulaşlı, "Compliance," 53.

151 Pulaşlı, 54.

152 Articles 23/III and 29 of Banking Law, No. 5411; Regulation on Internal Systems And Internal Capital Adequacy Assessment Process Of Banks, Article 4/I, https://www.bddk.org.tr/Mevzuat/DokumanGetir/1089.

the regulations, compliance organization must be carried out by the board of directors in banks.

The compliance duty of the board of directors in companies subject to independent audit is emphasized in the Independent Auditing Standards.[153] In addition, the Standards include methods that can be applied in the company to prevent and detect noncompliance and state that a "compliance department" can be established.[154]

4.4.2. Compliance Duty of the Board of Directors

4.4.2.1.In General

The board of directors is a governing body comprised of individuals elected by the general assembly or appointed by the articles of association. In accordance with the provision of TCC Article 365, the legal management and representation body of the joint stock company is the board of directors.

The TCC outlines the responsibilities of the board of directors in Article 374 et seq. The board of directors is authorized to take decisions on all kinds of works and transactions necessary for the realization of the company's business subject, except for those left under the authority of the general assembly as specified by the law and the articles of association.

The main and also non-delegable duties and powers of the board of directors are managing and representing the partnership (TCC Article 365 et seq.), establishing the necessary order for the oversight and senior management of the company (TCC Article 375/1(a), (c)), notifying the court in case the company's assets become insolvent and taking the necessary

153 Independent Auditing Standards 250, para. 3, https://www.kgk.gov.tr/Portalv2Uploads/files/Duyurular/v2/TDS/TDS_2021_Seti/BDS%20250.pdf.

154 Independent Auditing Standards 250, para A2.

precautions (TCC Article 375/1(g); 376 et al.), preparing and conducting general assembly meetings (TCC Article 375/1(f); 410 et seq.), implementing the general assembly decisions, pursuing the case by filing an annulment lawsuit against the decisions taken when necessary (TCC Article 445 et seq.), making and executing preparations for amendment of the articles of association, capital increase and decrease (TCC Article 453 et al.; 456-475), ensuring the use of existing partners' priority rights over newly issued shares in capital increases (TCC Article 461), carrying out the registration and announcement tasks required by law (such as TCC Articles 455, 471), calling the general assemblies of privileged shareholders to meetings (TCC Article 454), keeping the company's books, preparing annual activity reports and corporate governance statements (TCC Article 375/1(f)), fulfilling duties related to the termination of the partnership and liquidation procedures.

Thus, the non-delegable and inalienable powers of the board of directors, as well as its obligations regarding oversight, are listed in TCC Article 375; however, the exact limits of these are not explicitly defined. Each duty listed in the Article interacts with other duties, as the fulfillment of one duty relies on the performance of another.

The evaluation of the provisions regulating the duties of the board of directors in the TCC reveals that the board of directors in a joint-stock company has the compliance duty and should establish a monitoring network and an appropriate organization to ensure compliance in the company.[155] Hence, the board of directors is responsible for establishing and implementing the compliance system in the organization, and they must diligently execute their management duties in this regard. In terms of

155 Pulaşlı, "Compliance," 53; Tuğçe Nimet Yaşar, "Şirketler Hukuku Açısından 'Compliance' Kavramı ve Borsaya Kayıtlı Şirketlerde Uygulanması" (PhD diss., Ankara University, 2018), 311, Ulusal Tez Merkezi (521498).

company organization, there are flexible structure regulations in the TCC, and the board of directors structures the management freely.[156]

4.4.2.2.Duty of Care

According to Article 369/1 of TCC, "Directors and third parties in charge of the management are obliged to perform their duties with the care of a prudent director and safeguard the interests of the company in accordance with the principle of honesty." It is accepted that the duty of care has a dual function. First, the duty of care expresses the duties that directors must fulfill within the scope of this obligation and plays a role in determining the duties that are not explicitly stated in the law. Secondly, duty of care is used to determine directors and managers' faults in alleged liable matters.[157]

The prudent director that is stated in Article 369/1 of TCC is an objective criterion that embodies what is ideal and is not influenced by the subjective characteristics of the individual responsible for management.[158]

[156] Abuzer, Kendigelen, *Yeni Türk Ticaret Kanunu – Değişiklikler, Yenilikler ve İlk Tespitler*, 3rd ed. (On İki Levha Yayıncılık, 2016): 258-259; Hasan Pulaşlı, *Şirketler Hukuku Şerhi Cilt I*, 5th ed. (Adalet Yayınevi, 2024), 1179.

[157] İsmail Kırca, Feyzan Hayal Şehirali Çelik, and Çağlar Manavgat, *Anonim Şirketler Hukuku Cilt 1* (Banka ve Ticaret Hukuku Araştırma Enstitüsü Yayınları, 2013), 656-657; Necla Akdağ Güney, *Anonim Şirket Yönetim Kurulu*, 2nd ed. (Vedat Kitapçılık, 2016), 188; Reha Poroy, Ünal Tekinalp, and Ersin Çamoğlu, *Ortaklıklar Hukuku I*, (Vedat Kitapçılık, 2019), 420.

[158] Akdağ Güney, *Yönetim Kurulu*, 194; Hasan Pulaşlı, "Türk Ticaret Kanunu Tasarısı'na Göre Anonim Şirket Yönetim Kurulu Üyelerinin Özen Yükümlülüğü ve Müteselsil Sorumluluğu," Banka ve Ticaret Hukuku Dergisi 25, no.1 (2009), 53; Kendigelen, *Yeni Türk Ticaret Kanunu*, 260; Kırca, Şehirali Çelik, and Manavgat, *Cilt 1*, 657; Sibel Hacımahmutoğlu, "The Business Judgment Rule: İşadamı Kararı mı Yoksa Ticari Muhakeme Kuralı mı?," Bankacılık ve Ticaret Hukuku Dergisi 30, no.4 (2014): 136; Pınar, "Rekabet," 391; Ünal Tekinalp, *Sermaye Ortaklıklarının Yeni Hukuku*, 5th ed. (Vedat Kitapçılık, 2020), 287.

Nevertheless, the company's scale, the prevailing market conditions, and the nature of the director's work can affect the said criterion.[159]

According to the rationale of the Article, the director role here does not have to encompass specialized knowledge.[160] If the decision is justifiable by those operating in the same sector at the time it was made, the director should not be held responsible even if damage occurs.[161]

However, the code does not provide a definition of the concept of a prudent manager or clearly explain its boundaries. The prudent director criterion is expressed in the rationale for Article 369 of the TCC: "The prudent director criterion recognizes that a director can exercise their "businessperson judgment" (business judgment rule) in accordance with corporate governance principles, and it is based on the principle that the director should not bear liability when a risk arises. According to the generally accepted rule, if appropriate research is conducted, information is received from the relevant parties, and a decision is made by the board of directors, even if developments are completely to the contrary and the company suffers a loss, directors cannot be held negligent."[162]

According to common opinion, prudent director criterion is the same as the business judgment rule in line with the rationale.[163] Directors must not

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159 Emrullah Kervankıran, "Alman Hukukunda Business Judgment Rule'nin Kodifikasyonu – Türk ve Amerikan Hukuku ile Karşılaştırmalı Bir Değerlendirme," in *Prof Dr. Hüseyin Ülgen'e Armağan İkinci Cilt*, ed. Ömer Teoman, Arslan Kaya, and Cenker Değirmenci (Vedat Kitapçılık, 2007), 252; Hacımahmutoğlu, "The Business Judgment Rule," 136-137; Pulaşlı, *Şirketler Hukuku Şerhi Cilt I*, 1146.

160 Rationale for Article 369 of TCC No. 6102.

161 Cafer Eminoğlu, "Anonim Şirkette Özen ve Bağlılık Yükümlülüğünün Kişi Bakımından Kapsamına İlişkin Bazı Değerlendirmeler," A*nkara Barosu Dergisi* 80, no. 1 (2021): 85, https://doi.org/10.30915/abd.1118331.

162 Rationale for Article 369 of TCC No. 6102.

163 Akdağ Güney, *Yönetim Kurulu*, 189; Kervankıran, "Business Judgment Rule," 262; Mehmet Bahtiyar, *Ortaklıklar Hukuku*, 16th ed. (Beta Yayıncılık, 2022): 210-211; Poroy, Tekinalp, and Çamoğlu, *Ortaklıklar Hukuku I*, 421; Pulaşlı, *Şirketler Hukuku Şerhi Cilt I*, 1453.

exceed the duties and authorities given to them and must perform their duties in good faith and in the best interest of the company in the scope of the business judgment rule.[164]

The prudent director criterion is less stringent than the reasonable businessman.[165] In the rationale of Article 369 of TCC, it is stated that the prudent director criterion is different from the concept of a prudent/reasonable businessman and that the Supreme Court decisions define the prudent/reasonable criterion with harsh, even excessive expectations and that applying the same criterion to the board of directors may lead to unfair results.[166]

The application of the reasonable businessman criteria, which requires considering all possibilities and foreseeing and evaluating all possibilities, from market conditions to exchange rate risks and political risks, to the directors of the joint-stock company who are required nothing apart from being of legal age and competent, may lead to unfair results.[167] However, according to Kırca, there is a conceptualization problem in the distinction between the Turkish words "tedbir" and "basiret", and choosing "tedbir" over "basiret" will not solve the problem. The word "basiret" is more appropriate to express the context, and the important thing is to make clear what is meant by the duty of care.[168]

According to Hacımahmutoğlu, business judgment rule is is not easy to apply and requires a less stringent standard of care compared to the objective standard of care. For the rule to be applicable, the constitutive elements of the rule must be clearly regulated in the law. Hacımahmutoğlu, "The Business Judgment Rule,"145.

164 Tekinalp, and Çamoğlu, 421

165 Rationale for Article 369 of TCC No. 6102; Kervankıran, "Business Judgment Rule," 261; Poroy, Tekinalp, and Çamoğlu, 421.

166 Rationale for Article 369 of TCC No. 6102.

167 Poroy, Tekinalp, and Çamoğlu, *Ortaklıklar Hukuku I*, 421.

168 Kırca, Şehirali Çelik, and Manavgat, *Cilt 1*, 658-659.

For directors to be considered prudent, their decisions, actions, and transactions must first comply with the law.[169] Directors must ensure that they comply with the law, as well as ensure that all activities and transactions within the firm and with external parties are compliant with the law, while also monitoring these. This duty includes informing employees about laws, rules, and regulations; controlling employees and processes; preventing possible violations of law; detecting the illegalities that are thought to exist; penalizing the persons concerned due to the existing violations of the law; creating a compliance organization.[170]

Compliance with all legal rules must be ensured in the company, regardless of the field of law; however, considering the company's illegalities that have occurred in the past, it is a requirement of the board of directors' duty of care to intensify supervision regarding compliance with legal rules in a specific field of law where the irregularities have occurred or in the sector in which the company operates.[171] The business can set up distinct departments or programs (such a "competition compliance unit/program" or an anti-money-laundering compliance program) in this context.[172]

4.4.2.3.Duty of Oversight

The TCC implements a monist structure in company management; therefore, the board of directors is responsible for both managing the company and overseeing its operations.[173] The board of directors' oversight duty is not limited to reviewing management's activity and operations but

[169] Yaşar, "Compliance," 252.
[170] Yaşar, 254.
[171] Kırca, Şehirali Çelik, and Manavgat, *Cilt 1*, 562.
[172] Pınar, "Rekabet," 376, Yaşar, "Compliance," 282.
[173] Kendigelen, *Yeni Türk Ticaret Kanunu*, 258; Pulaşlı, *Şirketler Hukuku Şerhi Cilt I*, 1158; Tekinalp, *Sermaye Ortaklıkları,* 230.

also includes general oversight of the company, which is one of the board of directors' main responsibilities.[174]

The concept of oversight is only addressed in the TCC's provisions pertaining to joint-stock companies, specifically in the articles regarding the high-level oversight obligation (TCC 375/1) and the oversight obligation of directors, managers, and liquidators (TCC 553/3).[175]

The duty of high-level oversight is regulated in Article 375/1-e of the TCC as a non-delegable and inalienable duty.[176] This Article of the TCC states that, "(1) The board has the following non-delegable and inalienable duties and authorities: e) Overall supervision of the person in charge of management, in particular to determine as to whether they comply with law, articles of association, internal directives, and written instructions of the board." The article clearly contains the "comply with law" expression.

As it is stated in the doctrine, the phrase "supervision of the flow of transactions" in the rationale for Article 375/1-e of TCC[177] outlines the duty of high-level oversight as the creation of a necessary system inside the organization, rather than direct oversight by the board of directors.[178]

To fulfill the duty of high-level oversight, an appropriate and accurate system must be established to oversee all corporate operations and transactions, with the individuals responsible inside the organization being carefully chosen.[179] The oversight of the system's operation as well as its

174 Yaşar, "Compliance," 277.
175 Yaşar, 116.
176 Akdağ Güney, *Yönetim Kurulu*, 161-167.
177 Rationale for Article 375 of TCC No. 6102.
178 Yaşar, "Compliance," 278.
179 Salman, "Compliance Kavramı," 138.

evolution and adjustment to shifting conditions is under the scope of the duty as well.[180]

In accordance with TCC Article 375/1-b, the board of directors must designate a compliance officer with the authority to formulate and execute the compliance principles. The board of directors also must put in place an appropriate and thorough reporting system since it is responsible for supervising the compliance officer. A written decision containing the minimum requirements of the compliance program must be made and communicated to all employees within the framework of a top-down instruction. In addition, the supervision of whether this instruction is complied with should be provided by a compliance officer, and the results should be reported to the board of directors on a continuous basis.[181] The lack of awareness regarding compliance as a concept does not serve as an acceptable justification for the board of directors' duty of care in accordance with Article 369 of the TCC.[182]

4.4.2.4.Review and Improvement of Compliance Systems

Establishing a compliance system alone does not suffice to meet compliance duty, since compliance duty is a continuous duty.[183] Updating, improving, overseeing, and controlling the system should also be done by the board of directors. Oversight is done to ensure the effectiveness of the system, and the oversight can be done by persons from within or outside the company. The purpose of improvement is to make the compliance management system a dynamic and constantly developing system. The system must also be adapted to new conditions such as new regulations. In this context,

[180] Yaşar, "Compliance," 294.
[181] Pulaşlı, "Compliance," 58-59.
[182] Pulaşlı, 59.
[183] Yaşar, "Compliance," 389.

oversight findings should be evaluated, and necessary measures to eliminate the deficiencies of the system should be taken.[184]

These activities can be performed by the compliance officer. However, this oversight must be in the form of an audit carried out by competent, neutral, and separate units; therefore, regular controls will not be enough.[185] Consequently, it is advised that the audit be conducted by either internal auditing, whose competence and independence are ensured, or by independent auditors from outside the company.[186]

4.4.3. Delegation of Compliance Duty

Unless the duties are delegated, the board of directors of a joint stock company is fully responsible for managing the company and making all managerial decisions, as well as carrying out all transactions. While this is typically true for small companies, it is impractical for the board of directors to execute all tasks in medium and big joint stock companies.[187]

In accordance with Article 367 of the Turkish Commercial Code, the board of directors may partially or fully delegate its duties and authorities, except for non-delegable duties and authorities, to one or more directors or third parties. The company's articles of association must include a provision allowing for the delegation of duties, and an internal directive to regulate the company’s management must be prepared.[188]

[184] Yaşar, 392.
[185] Salman, “Compliance Kavramı,” 43.
[186] Yaşar, “Compliance,” 390-391.
[187] Kırca, Şehirali Çelik, and Manavgat, *Cilt 1*, 555.
[188] TCC No. 6102 Article 367.

The board of directors' delegable duties and powers are the management of daily operations.[189] Since compliance is a natural element of high-level oversight and senior management, and due to their non-transferable nature, compliance duty cannot be delegated completely.[190] The board of directors can only delegate some compliance tasks through a duly executed delegation of authority.[191]

The delegable duties include auditing whether the company complies with the legislation it is subject to, taking measures to prevent possible non-compliances, and informing the board of directors if a non-compliance is detected.[192]

The board of directors has three main compliance duties that cannot be delegated: to determine the company's risk profile, to determine an appropriate compliance program and to establish a compliance organization as a result of the risk assessment, and to integrate the compliance program into the company's activities.[193]

4.4.4. Liability of Directors

4.4.4.1.In General

According to TCC Article 553, if directors violate their obligations arising from the law and the articles of association, they are liable for the damage

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189 According to Kırca, the provision regulating the delegation of management was not included for the delegation of decisions that are routine, have a very low level of importance, have a predetermined framework, and do not require the use of discretionary power. Kırca, Şehirali Çelik and Manavgat, *C. I*, s. 593.

190 Yaşar, "Compliance," 312.

191 Yaşar, 312.

192 Paslı, "Compliance," 328-329.

193 Klaus Moosmayer, *Compliance – Praxisleitfaden für Unternehmen*, 2nd ed.., (C.H. Beck, 2012), 1-2 cited in Tuğçe Nimet Yaşar, "Şirketler Hukuku Açısından 'Compliance' Kavramı ve Borsaya Kayıtlı Şirketlerde Uygulanması" (PhD diss., Ankara University, 2018), 312-314, Ulusal Tez Merkezi (521498)

to the company, the shareholders and the creditors.[194] In order for directors to be held liable, the elements of damage, illegality, fault, and causal link must have occurred.[195] Some other breaches that cause liability for the directors are stipulated under TCC 549-552.

In addition to the company, each shareholder can demand compensation for the company's loss. In case the company goes bankrupt, the company's creditors can also demand compensation. The shareholders and creditors will only be able to request the compensation to be paid to the company because the company is the main right holder according to the Code.

As stated in TCC m. 557/I, in the event that more than one person is responsible for unlawful acts, these persons will be jointly and severally liable for their faults and to the extent that the damage can be inflicted on them according to the requirements of the situation.

4.4.4.2.Liability Arising from Compliance Duty

This thesis will assess the liability of directors arising from their compliance dutiy. The board of directors, which does not fulfill its compliance duty, may be held liable for the damage it causes in accordance with the provisions of Article 553 of TCC.[196]

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194 Akdağ Güney, *Yönetim Kurulu*, 339-340; Rationale for Article 555 of TCC No. 6102. Typically, a liability litigation can be initiated by the company if the director's improper action directly impacts the company. However, legislators also granted shareholders the right to sue for compensation for the direct harm suffered by the company, in light of the possibility that the company would refrain from initiating legal proceedings in order to shield the board of directors.

195 Rıza Ayhan, Hayrettin Çağlar, and Mehmet Özdamar, *Şirketler Hukuku Genel Esaslar,* 5th ed. (Yetkin Yayınları, 2023), 359-365; Akdağ Güney, *Yönetim Kurulu*, 293; Tekinalp, *Sermaye Ortaklıkları,* 445.

196 Paslı, "Compliance," 332.

The directors’ compliance responsibility is primarily to the company, as it bears the consequences of illegality primarily. The compliance duty of the directors primarily includes their own obligation to comply with the law.[197] Therefore, any unlawful behavior of directors in the company's internal relations constitutes a violation of the duty of care, including the compliance duty. The compliance duty of the directors also includes the company's obligation to comply with the law in external relations.

Whether or not the board of directors has delegated the delegable management powers, it must establish a monitoring system in the company within the scope of the compliance obligation and monitor whether this system is working effectively. If the directors fail to take measures to ensure compliance with the law, the unlawful behavior of the employees may lead to violation of the compliance duty of the board.[198] Even if the board of directors has taken the measures and created the compliance system, however if it is created insufficiently by taking deficient measures, directors still may be held responsible for the unlawfulness of the employees.[199]

The board of directors has discretion over how to fulfill its compliance duty, and the decision it makes in this regard is a business judgment decision. The board of directors cannot be held responsible for decisions that qualify as business decisions.[200]

This matter is explained in Article 553/3 of the Turkish Commercial Code, which stipulates that no one can be held liable for areas beyond their control. The rationale for the Article states that the aim is to prevent the directors from being held liable for any violation of the law or articles of association in the company with an understanding of oversight that is

[197] Paslı, 332.
[198] Yaşar, “Compliance,” 398.
[199] Yaşar, 399.
[200] Rationale for Article 369 of TCC No. 6102.

beyond human capacity.[201] Regardless of whether the outcome is adverse to the company, it is adequate for directors to make the necessary effort in making a decision, to have the basic information regarding the decision, and for the decision to be in accordance with the law.

A company needs a well-staffed compliance unit with enough funding and employees for the compliance system to be implemented and influence the company's culture.[202] Company employees or externally selected persons may also be delegated with creating the compliance system.[203]

Directors cannot delegate their compliance duty, and in case of delegation, this delegation becomes invalid, and the directors cannot escape their liability.[204] If the board of directors delegates compliance tasks to third parties through a duly executed delegation of authority, it cannot become liable in terms of the delegated tasks. Directors shall not be liable for the acts and decisions of the persons they delegated unless it is proven that they did not exercise reasonable care in selecting the persons who took over these duties and authorities, as it is stipulated in Article 553/2 of TCC.[205]

However, in this case, duty of care in selection, instructing and supervision will be in question.[206] Its liability for nondelegable compliance duties remains intact.[207] Directors shall remain liable for any failure to implement a compliance system within the firm with the necessary care and for any violations of its oversight duty regarding the system.[208] Even if the compliance system has been established in the company, directors should keep an eye on whether the system carries the necessary elements and

[201] Rationale for Article 553 of TCC No. 6102.
[202] Karatepe Kaya and Solak, "İhbarcılık," 737.
[203] Karatepe Kaya and Solak, 737.
[204] Yaşar, *Compliance*, 444.
[205] TCC No. 6102 Article 553.
[206] Kırca, Şehirali Çelik, and Manavgat, *Cilt 1*, 612.
[207] Salman, "Compliance Kavramı," 41.
[208] Yaşar, 400.

whether it functions effectively.[209] Meanwhile, while the board's oversight duty continues, the improper selection of managers or the tolerance of their erroneous activities are grounds for directors' liability.[210]

[209] Yaşar, 401.

[210] Paslı, "Compliance," 332.

CHAPTER II: THE ROLE OF ARTIFICIAL INTELLIGENCE IN CORPORATE COMPLIANCE

1. FUNDAMENTALS OF ARTIFICIAL INTELLIGENCE

1.1. Definition

AI is a new type of technology that works with data. To provide an adequate explanation of AI, the definition and explanation of data need to be provided first. Data is defined differently in almost every resource. However, it can be briefly defined as "a set of values and characters that are represented electronically and can be read by machines, ready for processing"[211] in the scope of this research. AI techniques can then be used to extract insights from data or make decisions based on the knowledge derived from it.[212]

Analyzing data sets that are too big or complicated for conventional data processing tools to manage is known as "big data analytics".[213] Even though there is no consensus on the definition of big data, three main features consistently stand out.[214] Big data is defined as data with high volume, high variety, and high velocity.[215]

Once appropriate data is obtained, algorithms are the key to transforming data into a valuable and practical form. An algorithm is a predetermined sequence of instructions that software follows in order to accomplish a

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[211] Osman Gazi Güçlütürk, "Türk Hukukunda Makine Öğrenmesine Dayalı Yapay Zekada Verinin Hukuka Uygun Şekilde Kullanılması" (PhD diss., Galatasaray University, 2021), 12, Ulusal Tez Merkezi (702185).

[212] Luka Enriques and Dirk A. Zetzsche "Corporate Technologies and the Tech Nirvana Fallacy," *Hastings Law Journal* 72, no. 1 (2020): 12, https://repository.uclawsf.edu/hastings_law_journal/vol72/iss1/2/.

[213] Enriques and Zetzsche, "Corporate Technologies," 65.

[214] Güçlütürk, "Makine Öğrenmesi," 16.

[215] Guidelines on the Protection of Individuals with regard to the Processing of Personal Data in a World of Big Data, Council of Europe, 2017, https://rm.coe.int/16806ebe7a.

specific task. Thus, an algorithm is a collection of rules that define how to convert an input into an output.[216] Algorithms are created by humans, so their outputs depend on the intentions of the humans who created them and can create bias.[217]

Eventually, John McCarthy introduced the idea of AI for the first time in 1955.[218] In the Dartmouth Project proposal, a functional definition of AI was provided. This project was one of the most important studies in regards to AI. It took 2 months, and 10 scientists carried out this project in 1956 at Dartmouth College in Hanover, New Hampshire. They defined AI in their proposal as below: "For the present purpose the artificial intelligence problem is taken to be that of making a machine behave in ways that would be called intelligent if a human were so behaving".[219]

There are many definitions and explanations of AI in literature and other resources. Harry Surden describes AI as the use of technology to automate activity that often necessitates human intelligence.[220] Another definition of AI made by the Cambridge dictionary is "the study of how to produce machines that have some of the qualities that the human mind has, such as the ability to understand language, recognize pictures, solve problems, and learn."[221]

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[216] Zachary C. Lipton, "The Foundations of Algorithmic Bias," *Approximately Correct* (blog), November 7, 2016, http://approximatelycorrect.com/2016/11/07/thefoundations-of-algorithmic-bias/.

[217] Güçlütürk, "Makine Öğrenmesi," 20.

[218] John McCarthy et al., "A Proposal for the Dartmouth Summer Research Project on Artificial Intelligence" (unpublished manuscript, August 31, 1955), PDF file, http://jmc.stanford.edu/articles/dartmouth/dartmouth.pdf.

[219] John McCarthy et al, "A proposal," 11.

[220] Harry Surden, "Artificial Intelligence and Law: An Overview," *Georgia State University Law Review* 35, (2019): 1307, https://scholar.law.colorado.edu/faculty-articles/1234.

[221] *Cambridge Dictionary,* "artificial intelligence," accessed September 30, 2023, https://dictionary.cambridge.org/dictionary/english/artificial-intelligence. According to Merriam-Webster, AI is "the capability of computer systems or algorithms to imitate

Official organizations have some definitions as well. The European Commission explained AI in a report as "artificial intelligence (AI) refers to systems that display intelligent behavior by analyzing their environment and taking actions – with some degree of autonomy – to achieve specific goals."[222], and in a white paper on AI, as, "AI is a collection of technologies that combine data, algorithms and computing power."[223] There is also another definition made by the European Parliament: "AI is the ability of a machine to display human-like capabilities such as reasoning, learning, planning and creativity."[224]

A group of experts was appointed by the European Commission to provide advice on its AI strategy, and it is named the AI-High-Level Expert Group on Artificial Intelligence (HLEG).[225] This group's definition is below: "Artificial intelligence (AI) refers to systems designed by humans that, given a complex goal, act in the physical or digital world by perceiving their environment, interpreting the collected structured or unstructured data, reasoning on the knowledge derived from this data and deciding the best action(s) to take (according to pre-defined parameters) to achieve the given

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intelligent human behavior." *Merriam-Webster Dictionary*, "artificial intelligence," accessed September 30, 2023, https://www.merriam-webster.com/dictionary/artificial%20intelligence.

[222] *Communication from the Commission, Artificial Intelligence for Europe*, COM (2018) 237 final, (April 25, 2018), https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2018%3A237%3AFIN.

[223] *White Paper on Artificial Intelligence - A European Approach to Excellence and Trust*, COM (2020) 65 final, (Feb. 19, 2020), https://commission.europa.eu/system/files/2020-02/commission-white-paper-artificial-intelligence-feb2020_en.pdf.

[224] "What is Artificial Intelligence and How It is Used?," Topics, European Parliament, updated June 20, 2023, https://www.europarl.europa.eu/news/en/headlines/priorities/artificial-intelligencein-the-eu/20200827STO85804/what-is-artificial-intelligence-and-how-is-it-used.

[225] "High-level expert group on artificial intelligence," Policies, European Commission, updated October 14, 2022, https://digital-strategy.ec.europa.eu/en/policies/expert-group-ai.

goal. AI systems can also be designed to learn to adapt their behavior by analyzing how the environment is affected by their previous actions."[226]

1.2.Types of Artificial Intelligence

As it is also stated by HLEG, AI encompasses various methods and techniques, namely ML (deep learning, reinforcement learning), machine reasoning (planning, scheduling, knowledge representation and reasoning, search, and optimization), and robotics (control, perception, sensors and actuators, and the integration of all other techniques into cyber-physical systems).[227]

In the Artificial Intelligence Act, a definition is made as follows: "'AI system' means a machine-based system that is designed to operate with varying levels of autonomy and that may exhibit adaptiveness after deployment, and that, for explicit or implicit objectives, infers, from the input it receives, how to generate outputs such as predictions, content, recommendations, or decisions that can influence physical or virtual environments"[228]

Apart from its definition, AI is grouped according to experts or usage areas. One of the least sophisticated categories of AI systems is rule-based systems. These systems are knowledge-based and are built by domain experts who transfer knowledge into a set of computer instructions. Data-

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[226] High-Level Expert Group on Artificial Intelligence, *A Definition of AI: Main Capabilities and Disciplines,* (2018): 7, https://digital-strategy.ec.europa.eu/en/library/definition-artificial-intelligence-main-capabilities-and-scientific-disciplines.

[227] HLEG on Artificial Intelligence, *A Definition of AI*, 7.

[228] Regulation (EU) No. 2024/1689 of the European Parliament and of the Council of 13 June 2024 Laying Down Harmonised Rules on Artificial Intelligence and Amending Regulations (EC) No 300/2008, (EU) No 167/2013, (EU) No 168/2013, (EU) 2018/858, (EU) 2018/1139 and (EU) 2019/2144 and Directives 2014/90/EU, (EU) 2016/797 and (EU) 2020/1828 (Artificial Intelligence Act), 2024 O.J. (L 2024/1689), https://eur-lex.europa.eu/eli/reg/2024/1689/oj.

based systems, on the other hand, consume data and learn from it.[229] By only executing logical commands that have been explicitly specified in advance, a system may achieve a result similar to human interaction. In this case, no intellectual activity can be mentioned since the inputs accepted by the application and the outputs it will produce are completely predetermined and predictable.[230] Since the inputs that the program will accept and the results it will create are entirely predefined and predictable, no intellectual work can be claimed in this scenario. This type of AI is used for manual or repeating assignments normally done by human beings. These are very similar to computer programs. In the compliance area, it is possible to use this kind of AI to analyze documents and rules extraction for AML and know your customer profiling.[231]

The second type of AI, data-based systems, is more similar to human intelligence. In this category, AI learns and functions without the need for certainty or pre-programming rules.[232] With this type, it is possible to create a system that serves real-time compliance. ML is a technique in this type of AI.[233] And there are also different types of ML, like supervised,

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[229] Rembrandt Devillé, Nico Sergeyssels, and Catherine Middag, "Basic Concepts of AI for Legal Scholars," in *Artificial Intelligence and the Lawi* ed. Jan De Bruyne and Cedric Vanleenhove (Intersentia, 2023), 4.

[230] Güçlütürk, "Makine Öğrenmesi," 277; Devillé, Sergeyssels, and Middag, "Basic Concepts of AI," 3.

[231] Raghad Al-Shabandar et al., "The Application of Artificial Intelligence in Financial Compliance Management," in *AIAM 2019: Proceedings of the 2019 International Conference on Artificial Intelligence and Advanced Manufacturing*, (Association for Computing Machinery, 2019), 2, https://doi.org/10.1145/3358331.3358339.

[232] Jeff Kerns, "What's the Difference between Weak and Strong AI?," *Machine Design*, February 16, 2017, https://www.machinedesign.com/robotics/what-s-difference-between-weakand-strong-ai.

[233] Enriques and Zetzsche, "Corporate Technologies," 66. "Machine learning is a subset of AI that uses statistical, data-based methods to progressively improve the performance of computers on a given task, without humans reprogramming the computer system to achieve enhanced performance. In practice, the learning is achieved through extensive "practice" with multiple feedback rounds through which the machine is told whether it has passed or failed a task."

unsupervised, semi-supervised, and reinforcement learning.[234] The most popular ML technique is supervised learning, which analyzes a set of training labeled data and decides how best to forecast the pertinent outcome variable.[235]

Another prevalent categorization of AI includes categories of artificial narrow intelligence (ANI) and artificial general intelligence (AGI).[236] ANI is a category of AI systems designed to perform a specific task. For example, chess-playing AI systems may match or even exceed human performance in chess but lack the capacity to perform other tasks, either entirely or with the same level of competence as humans. These systems are common in today's world. AGI, on the other hand, refers to systems that have the capacity to perform any task a human can do at the same level of competence. There is also a hypothetical third type called artificial super intelligence (ASI), which is used for AI systems that can overperform humans in every possible task; in other words, surpass human intelligence.[237]

According to another opinion, many technologies that are under AI can be categorized generally as rule-based technologies and ML technologies.[238] Rule-based systems require a source of rules, such as documents describing regulations, and these rules must be programmed into the system. The systems can then ask users relevant questions and make decisions by

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234 Al-Shabandar et al., "Financial Compliance Management," 2.

235 Al-Shabandar et al., "Financial Compliance Management," 4.

236 Rajiv Desai, "Artificial Intelligence (AI)," *Dr Rajiv Desai: An Educational Blog*, March 23, 2017, http://drrajivdesaimd.com/2017/03/23/artificial-intelligence-ai/.

237 Volkan Dülger, "Günümüz Yapay Zekâ Teknolojisi ve 'Robot Yargıç/Avukat' Gerçeği: Mesleğimiz Elimizden Gidiyor mu?," *H Plus Dergisi*, (2021): 8, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3792182.

238 Rene Buest, "Artificial Intelligence is About Machine Reasoning—or When Machine Learning is Just a Fancy Plugin," *CIO,* November 3, 2017, https://www.cio.com/article/230943/artificial-intelligence-is-about-machine-reasoning-or-when-machine-learning-is-just-a-fancy-plugin.html.

reasoning with the answers. Understanding the reasoning behind a rule-based system is also straightforward.[239] The main features of ML techniques, such as neural networks, include requiring large datasets that are used as training, validation, and test sets; learning autonomously without manually programmed rules, and an inability to explain their reasoning beyond the fitted parameters.[240]

One ML technique that has gained significant popularity in recent years is deep learning, which is based on neural networks. Deep learning is widely applied in natural language processing (NLP), a field focused on processing unstructured text data and highly relevant in the compliance domain. Naive Bayes classifier, logistic regression, nearest neighbor, support vector machines, decision trees, boosted trees, and random forests are some other examples.[241]

1.3.Regulations on Artificial Intelligence

The first regulation on AI in the European Union is the Artificial Intelligence Act (AI Act), approved by the European Parliament in March 2024.[242] This Act is also the first comprehensive AI law in the world.[243] According to the explanatory memorandum in the proposal of the European Commission,

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239 John Kingston, "Using Artificial Intelligence to Support Compliance with the General Data Protection Regulation," *Artificial Intelligence and Law* 25, (2017): 431, https://doi.org/10.1007/s10506-017-9206-9.

240 Kingston, "Using Artificial Intelligence to Support Compliance," 432.

241 Mandeep Sidana, "Types of Classification Algorithms in Machine Learning," *Medium* (blog), February 28, 2017, https://medium.com/@Mandysidana/machine-learning-types-of-classification-9497bd4f2e14.

242 European Parliament, "Artificial Intelligence Act: MEPs Adopt Landmark Law," press release, March 13, 2024, https://www.europarl.europa.eu/news/en/press-room/20240308IPR19015/artificial-intelligence-act-meps-adopt-landmark-law.

243 "EU AI Act: First Regulation on Artificial Intelligence," European Parliament, last updated June 18, 2024, https://www.europarl.europa.eu/news/en/headlines/society/20230601STO93804/eu-ai-act-first-regulation-on-artifi cial-intelligence.

the Act's primary aim is to guarantee the effective operation of the single market by establishing the conditions for the advancement and use of trustworthy AI inside the Union.[244]

According to the EU Commission, the High-Level Expert Group's "Policy and Investment Recommendations for Trustworthy AI", AI should be lawful, ethical, and robust technically and socially to establish trustworthiness.[245] There are also seven key requirements recommended for AI systems to meet to be reliable according to the EU Commission- The High-Level Expert Group's "Ethics Guidelines for Trustworthy Artificial Intelligence". These are human agency and oversight, technical robustness and safety, privacy and data governance, transparency, diversity, non-discrimination and fairness, societal and environmental well-being, and accountability.[246]

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[244] *Proposal for a Regulation of the European Parliament and of The Council Laying Down Harmonised Rules on Artificial Intelligence (Artificial Intelligence Act) and Amending Certain Union Legislative Acts*, COM (2021) 206 final, April 21, 2021), https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52021PC0206. "Specific objectives are to set requirements specific to AI systems and obligations on all value chain participants in order to ensure that AI systems placed on the market and used are safe and respect existing law on fundamental rights and Union values; to ensure legal certainty to facilitate investment and innovation in AI by making it clear what essential requirements, obligations, as well as conformity and compliance procedures must be followed to place or use an AI system in the Union market; to enhance governance and effective enforcement of existing law on fundamental rights and safety requirements applicable to AI systems by providing new powers, resources and clear rules for relevant authorities on conformity assessment and ex post monitoring procedures and the division of governance and supervision tasks between national and EU levels; to facilitate the development of a single market for lawful, safe and trustworthy AI applications and prevent market fragmentation by taking EU action to set minimum requirement for AI systems to be placed and used in the Union market in compliance with existing law on fundamental rights and safety."

[245] High-Level Expert Group on Artificial Intelligence, *Policy and Investment Recommendations for Trustworthy Artificial Intelligence*, (2018*):* 6, https://digital-strategy.ec.europa.eu/en/library/policy-and-investment-recommendations-trustworthy-artificial-intelligence.

[246] High-Level Expert Group on Artificial Intelligence, *Ethics Guidelines for Trustworthy AI*, (2019), https://digital-strategy.ec.europa.eu/en/library/ethics-guidelines-trustworthy-ai.

Other regulations and texts related to AI from the European Union include the Data Governance Act, Data Act, Open Data Directive, EU Strategy for Data, AI Liability Directive, and White Paper on AI.[247]

In the US, AI can be seen in the Blueprint for an AI Bill of Rights[248], Executive Order 13960 on Promoting the Use of Trustworthy Artificial Intelligence in the Federal Government,[249] and National Artificial Intelligence Initiative Act (NAIIA).[250]

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[247] Regulation (EU) No. 2022/868 of the European Parliament and of the Council of 30 May 2022 on European Data Governance and Amending Regulation (EU) 2018/1724 (Data Governance Act), 2022 O.J. (L 152), https://eur-lex.europa.eu/eli/reg/2022/868/oj; "European Data Governance Act," Policies, European Commission, updated October 10, 2024, https://digital-strategy.ec.europa.eu/en/policies/data-governance-act; "Data Governance Act Explained," Policies, European Commission, updated October 11, 2024, https://digital-strategy.ec.europa.eu/en/policies/data-governance-act-explained#:~:text=The%20Data%20Governance%20Act%20(DGA,of%20data%20for%20altruistic%20purposes; Regulation (EU) No. 2023/2854 of the European Parliament and of the Council of 13 December 2023 on Harmonised Rules on Fair Access to and Use of Data and Amending Regulation (EU) 2017/2394 and Directive (EU) 2020/1828 (Data Act), 2023 O.J. (L 2023/2854), https://eur-lex.europa.eu/eli/reg/2023/2854/oj; Directive (EU) 2019/1024 of the European Parliament and of the Council of 20 June 2019 on Open Data and the Re-Use of Public Sector Information, 2019 O.J. (L 172), http://data.europa.eu/eli/dir/2019/1024/oj; *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions a European Strategy for Data*, COM (2020) 66 final, (February 19, 2020), https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020DC0066; *Proposal for a Directive of the European Parliament and of the Council on Adapting Non-Contractual Civil Liability Rules to Artificial Intelligence (AI Liability Directive)*, COM (2022) 496 final, (September 28, 2022), https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52022PC0496.

[248] "Blueprint for an AI Bill of Rights," White House Office of Science and Technology Policy, October 2022, https://www.whitehouse.gov/ostp/ai-bill-of-rights/. "The Blueprint for an AI Bill of Rights is a set of five principles and associated practices to help guide the design, use, and deployment of automated systems to protect the rights of the American public in the age of artificial intelligence."

[249] Executive Office of the President, *Promoting the Use of Trustworthy Artificial Intelligence in the Federal Government* (2020), https://www.federalregister.gov/documents/2020/12/08/2020-27065/promoting-the-use-of-trustworthy-artificial-intelligence-in-the-federal-government.

[250] National Artificial Intelligence Initiative Act of 2020, 15 U.S.C. §§ 9401-9417 (2021).

AI and many other emerging technologies remain unregulated and undefined in numerous legal systems, including Turkish law. However, the National Artificial Intelligence Strategy 2021-2025 has been established in order to create value on a global scale within the AI ecosystem.[251]

There are also several legal issues related to this topic, such as whether AI can be considered a legal person. New technologies and AI, specifically for this study, could be associated with many law-related subfields. This research will focus on the relationship between AI and compliance.

2. INTEGRATION OF ARTIFICIAL INTELLIGENCE INTO CORPORATE COMPLIANCE

2.1. In General

AI is predicted to have a significant impact on all operational and internal control issues, including strategy formulation and risk management, due to its performance in data collection and processing.[252] The application of AI involves using computers to perform functions that would typically require human intelligence.[253] What separates AI from traditional computer

[251] Digital Transformation Office of the Presidency of Türkiye and Ministry of Industry and Technology, *Ulusal Yapay Zekâ Stratejisi 2021-2025*, August 2021, https://cbddo.gov.tr/UYZS.
[252] John Armour, and Horst Eidenmüller, "Self-Driving Corporations?," *Harvard Business Law Review* 10, no. 1, (2020): 99, https://journals.law.harvard.edu/hblr/volume-10-issue-1/; Kenneth A. Bamberger, "Technologies of Compliance: Risk and Regulation in a Digital Age," *Texas Law Review* 88, no.4 (2010): 722-738, https://ssrn.com/abstract=1463727; Saqib Aziz, and Michael M. Dowling, "Machine Learning and AI for Risk Management," in *Disrupting Finance: FinTech and Strategy in the 21st Century,* ed. Theo Lynn et al. (Palgrave Pivot, 2019), 33, https://doi.org/10.1007/978-3-030-02330-0.
[253] Ajay Agrawal, Joshua Gans, and Avi Goldfarb, eds., *The Economics of Artificial Intelligence* (The University of Chicago Press, 2019), 3.

programs, which are already used to automate routine chores, is that it has a large capacity to automate non-routine or knowledge-based work.[254]

Nearly all areas of a company's operations may benefit from AI in some way, such as information and communication management, investor profiling, product development, monitoring, profitability, risk, decision-making regarding corporate strategy, investment, personnel selection, procurement, manufacturing planning and control, pricing, marketing, and of course, compliance.[255] The legal industry has rapidly advanced and now widely uses AI as well.[256] However, compliance might be one of the most critical area for companies to use AI, since compliance is closely related to all other operations of the companies.

After the 2007–2008 global financial crisis, especially the firms operating in finance have become subject to increased scrutiny. Since then, spending of companies in compliance is increasing, and this situation has resulted in technologies providing an inevitable and feasible compliance solution.[257] AML and data protection are the areas that were taken into particular consideration.

Technology can generally aid in providing more efficient compliance methods. Both regulators and the companies that are liable to comply with regulations take advantage of these new technologies. By reducing

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254 Armour and Sako, "AI-Enabled Business Models," 2; Agrawal, Gans, and Goldfarb, "*Artificial Intelligence,"* 238.

255 Armour and Eidenmüller, "Self-driving Corporations?," 96; Armour and Sako, "AI-Enabled Business Models," 2-3.

256 Meltem Karatepe Kaya, "Yapay Zekanın Şirket Yönetimine Olası Katkılarının Türk Şirketler Hukuku Kapsamında Değerlendirilmesi ve Yapay Zekanın Hukuki Statüsünün Belirlenmesinde Şirketler Hukukundan Çıkartılabilecek Dersler," *Ankara Hacı Bayram Veli Üniversitesi Hukuk Fakültesi Dergisi* 25, no.3 (2021): 69, https://doi.org/10.34246/ahbvuhfd.979208.

257 Douglas W. Arner, Janos Nathan Barberis, and Ross P. Buckley, "The Emergence of Regtech 2.0: From Know Your Customer to Know Your Data," *Journal of Financial Transformation* 44, (2016): 10, https://ssrn.com/abstract=3044280.

expenses, optimizing resource usage, expediting administrative procedures, and attaining higher result accuracy, AI may dramatically increase efficiency and improve compliance service quality. AI aid is necessary due to compliance being tough and laborious. Particularly for compliance with complex regulations that demand expertise to comply with, like data protection, AI might be really helpful. However, it is worth noting that AI-based systems are not always a must for every company. If compliance can be achieved more cost-effectively and efficiently without AI, there is no need to apply it to the system.

Even though ensuring end-to-end compliance through an AI system is not possible, some tasks within the compliance process can still be enhanced with AI. Some tasks might still require human intervention, even if AI is used. AI might not be able to carry out some compliance tasks in the near future, but it will carry out many others.[258] Examples can be found in the field of NLP, such as entity recognition, which involves detecting specific words like company names in a text, and information retrieval, which is used to find relevant documents within a large collection of documents.[259]

AI, with multi-disciplinary expert inputs, is used for many compliance tasks. So, interdisciplinary expertise is required to use AI in compliance, such as knowledge of law, data science, project management, etc.[260]

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[258] Text classification, scenario summarization and analysis, trend detection, and case-specific decision support system development are some of the most common applications of AI. Karatepe Kaya, "Dersler," 70.

[259] Daniel Jurafsky, and James H. Martin, "Speech and Language Processing: An Introduction to Natural Language Processing, Computational Linguistics, and Speech Recognition," (online manuscript, August 20, 2024): 237, https://web.stanford.edu/~jurafsky/slp3.

[260] John Armour, and Mari Sako, "AI-Enabled Business Models in Legal Services: From Traditional Law Firms to Next-Generation Law Companies?," *Journal of Professions and Organization* 7, no. 1 (2019): 9, https://doi.org/10.1093/jpo/joaa001.

Complex compliance tasks were an obstacle to using AI in this area because of the difficulty of encoding them into certain rules. However, the recent developments in technology and the availability of large data sets enabled progress in ML. With ML, it is now possible to automate such complex, non-routine tasks, like recognizing human handwriting.[261]

ML is already used in compliance-related areas as well. AI may perform several jobs in the compliance domain, including real-time monitoring, developing alert systems, tracking changes in legislation, risk scoring, and document analysis. For instance, fraud detection, AML, or identity theft are some of the areas in which it is possible to use AI.[262] With AI, it is possible to analyze transaction data decades old in just 250 milliseconds to prevent fraud.[263] According to a firm specializing in AI fraud detection solutions, one of its clients reduced its false positives by 60% and increased real fraud detection by 50% in 2020.[264] Also, 83% of organizations (1,187 ACFE members) expect to implement generative AI as part of their anti-fraud programs in the next two years, according to a ACFE report.[265]

Another notable example of AI's application is the Luanda Leaks incident.[266] With AI, it was examined how Isabel dos Santos, Angola's

[261] David Lehr, and Paul Ohm, "Playing with the Data: What Legal Scholars Should Learn About Machine Learning," University of California Davis Law Review 51 (2017): 653, https://lawreview.law.ucdavis.edu/sites/g/files/dgvnsk15026/files/media/documents/51-2_Lehr_Ohm.pdf.

[262] Coalition for Integrity, *Using Machine Learning*, 14.

[263] Louis Columbus, "Top 9 Ways Artificial Intelligence Prevents Fraud," *Forbes*, July 9, 2019, https://www.forbes.com/sites/louiscolumbus/2019/07/09/top-9-ways-artificial-intelligence-prevents-fraud/#7fdca95514b4.

[264] Tibi Puiu, "Artificial Intelligence for Fraud Detection is Bound to Save Billions," *ZME Science,* March 23, 2020, https://www.zmescience.com/science/ai-fraud-detection-0942323/.

[265] ACFE and SAS Institute, *2024 Anti-Fraud Technology Benchmarking Report*, 2024, 4, https://www.sas.com/en_us/offers/24q1/anti-fraud-technology.html?utm_source=linkedin&utm_medium=social&utm_campaign=-americas&utm_content=p.

[266] Coalition for Integrity, *Using Machine Learning*, 8.

former president's daughter, took hundreds of millions of dollars in public funds out of Angola. This was done by the International Consortium of Investigative Journalists by using ML to review "Luanda Leaks" which are documents more than 700,000 and 356 GB in size.[267] As seen in the last example given, ML can be used for anti-corruption compliance as well. Microsoft, AB InBev, and Alexion Pharmaceuticals are using ML solutions for anti-corruption compliance.

AI can be used to look for correspondences between documents and, in this way, detect the correlations between a standard's and a law's provisions that make it easy to ensure compliance.[268]

One of the usages of AI in the legal area is computational models of legal reasoning (CMLR).[269] These models not only apply legal reasoning to answer legal questions but also provide explanations and arguments. Waterman's Product Liability Expert System (W-LES) was an example of CMLR in the 1980s.[270] It provided automatic legal reasoning but was limited. When dispute descriptions were given to the system, the system recommended and analyzed the recommendation.

2.2.RegTech

RegTech is the general term for the technologies that relieve the management of compliance. RegTech has a big role in the compliance area.

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[267] Jeremy B. Merrill, "How Quartz used AI to sort through the Luanda Leaks," *Quartz*, January 19, 2020, https://qz.com/1786896/ai-forinvestigations-sorting-through-the-luanda-leaks/.
[268] Cesare Bartolini et al., "Towards Legal Compliance by Correlating Standards and Laws with a Semi-automated Methodology" (paper presented at the 28th Benelux Conference on Artificial Intelligence, Amsterdam, November 10-11, 2016): 47, https://doi.org/10.1007/978-3-319-67468-1_4.
[269] Kevin D. Ashley, *Artificial Intelligence and Legal Analytics New Tools for Law Practice in the Digital Age*, (Cambridge University Press, 2017): 4.
[270] Ashley, *Artificial Intelligence,* 8-9.

These technologies increase the effectiveness of compliance. A variety of cutting-edge technologies and applications known as RegTech are used to automate and optimize compliance procedures, keep an eye on regulatory developments, protect regulatory data governance, and lower the risk of noncompliance.[271] AI is also one of these technologies, apart from cloud computing, distributed ledger technology, blockchains, and the Internet of Things.

According to Butler and O'Brien, RegTech is "information technology (IT) that helps firms manage regulatory requirements and compliance imperatives by identifying the impacts of regulatory provisions on business models, products and services, functional activities, policies, operational procedures, and controls; enables compliant business systems and data; helps control and manage regulatory, financial, and non-financial risks; and performs regulatory compliance reporting."[272] RegTech solutions are designed to improve accuracy, lower the risk of human error and other hazards, and save time and money related to regulatory compliance.[273]

2.3. Steps in Developing ArtificiaI Intelligence Solutions for Compliance

To develop an AI model, certain steps should be followed. These steps are first defining a problem, selecting and testing an ML model, generating outputs, then reviewing outputs for consistency, and lastly evaluating and

[271] Alessio Azzutti, Pedro Magalhães Batista, and Wolf-Georg Ringe, "Good Administration in AI-Enhanced Banking Supervision: A Risk-Based Approach," (EBI Working Paper Series, 2023.140, revised October 2024), 6, https://ssrn.com/abstract=4430642.
[272] Tom Butler, and Leona O'Brien, "Understanding RegTech for Digital Regulatory Compliance," in *Disrupting Finance: FinTech and Strategy in the 21st Century,* ed. Theo Lynn et al. (Palgrave Pivot, 2019), 86, https://doi.org/10.1007/978-3-030-02330-0.
[273] Azzutti, Batista and Ringe, "Good Administration," 6-7.

explaining the implications of the outputs.[274] These steps may require human intervention as well.[275]

Transactions and relationships that cause noncompliance or are suspicious and require examinations might be detected by the system. AI can detect behavioral patterns for suspicious or high-risk transactions and relationships as well.[276] After defining the problem, looking for data to use in AI is the next step. The data needed and existing should be understood, and then model design for suitable outputs should be considered. Distinguishing the data source is important because if the data that will be used in the model is not relevant to the problem, the model will fail to be useful. It is essential to quantify the outputs for a defined problem and select inputs that effectively explain those outputs. For example, the transaction amount would be an important feature for a fraud detection task, as unusual amounts can indicate fraud. The next part is building datasets. It is important to use a dataset that is sufficient to train the model.[277] With larger datasets, it will be easier for ML models to detect more complicated patterns.[278] So building ML compliance solutions will be much easier for big companies because of their ability to build and collect large datasets.

When implementing a model, customisation is an important element. Off-the-shelf models that are simple to implement may not always be applicable

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274 Armour and Sako, "AI-Enabled Business Models," 9.

275 While starting to develop a ML solution for compliance, for framing the problem, the steps that should be followed might be listed as: defining the problem, detecting the data that will be used for solution, designing the data for the model, determining the data source, deciding and ranking the most accessible inputs, and identifying quantifiable outputs. Coalition for Integrity, *Using Machine Learning*, 18-25.

276 Coalition for Integrity, 2o.

277 Armour and Eidenmüller, "Self-driving Corporations?," 97.

278 Rodney Weidemann, "Using AI to Uncover Fraud and Corruption," *ITWeb*, February 21, 2019, https://www.itweb.co.za/content/KBpdgvpPDzavLEew.

to a company’s data sets. To adapt an off-the-shelf model to the unique data sets and requirements of a company, customization is crucial.[279]

Once data collection is complete, the data will be transformed, and the model will be trained. Transforming the data means making it usable for an ML model. Data transformation can entail a number of processes, such as transforming categorical data to numerical data, addressing missing data, eliminating non-alphanumeric characters, and altering data types.[280] Before training an ML model, it's important to ensure that the dataset is large enough to address the defined problem. Challenges such as class imbalance, overfitting, underfitting, and model bias can be faced during the development of an ML model. However, there are solutions to overcome these problems, although success is not guaranteed. After a model is developed, appropriate measures should be used to evaluate the effectiveness of the model. Accuracy, precision, recall, and F1 score are some of the measures used to evaluate effectiveness in this step, specifically for classification models.[281] Clustering and regression are some of the other categories of ML techniques that require different evaluation metrics. The last step is evaluating the results.

Upon developing an effective ML model, engineering practices are followed to deploy the model, ensuring it is made available to the end user in a feasible way. The process is not complete after the deployment of a model. ML solutions should always be monitored, such as by continuously calculating and observing evaluation metrics, and updated as deemed necessary. Documentation can be another important step in the

[279] Deloitte and United Overseas Bank (UOB), *The Case for Artificial Intelligence in Combating Money Laundering and Terrorist Financing*, 2018, 13.
[280] Coalition for Integrity, *Using Machine Learning*, 11.
[281] “Classification: Precision and Recall, in Machine Learning Crash Course,” Google, last updated November 9, 2024, https://developers.google.com/machine-learning/crash-course/classification/precision-and-recall.

development of ML solutions, especially for compliance-related applications. Documentation of every step in the development of ML solutions is needed to present it to regulators and auditors.

To have a working model, it is essential to reproduce a series of outcomes consistently.[282] Therefore, a solid and consistent process, including monitoring performance and documenting the training process, has to be established by companies to assess and validate the results of the models.[283]

2.4. Artificial Intelligence Solutions for Compliance

2.4.1. In General

In this part, some AI techniques that can be used for compliance will be explained. Also, technologies and applications, especially those used by companies for compliance purposes will be given.

NLP, optical character recognition (OCR), and robotic process automation (RPA) are some AI techniques used in the compliance area. Expert systems, knowledge graphs, semantic search data discovery and generative modeling, visual perception, speech recognition, decision-making, and translations between languages are some ways to use these AI techniques.[284]

NLP, in particular, is one of the most important fields of ML for compliance. The data that will be used for compliance might be categorized as unstructured in the context of ML. Text, e-mails, documents, and news articles might be given as examples of unstructured data.[285] NLP is used for transforming this kind of data into a structured and numerical format to be

282 Deloitte and UOB, *Money Laundering and Terrorist Financing*, 12.
283 Deloitte and UOB, 12.
284 Al-Shabandar et al., "Financial Compliance Management," 2.
285 Coalition for Integrity, *Using Machine Learning*, 5.

used in ML.[286] This technology is rewarding, especially in the languages of the Indo-European language family.[287] Turkish and other languages with distinct structures have not evolved with this technology as much as Indian-European languages like English.[288] NLP technology is utilized in chatbots, language translations, speech-to-text conversion, and text-to-speech conversion.[289]

2.4.2. Solutions in the Market

In the compliance sector, there are many AI-based solutions that use NLP techniques. Recent NLP technologies can categorize and identify interconnections among legal sources.[290]

IBM's Watson Compare & Comply is one of the most well-known examples.[291] Sentieo's NLP technology enables the analysis of financial documents.[292] This system is used by companies that operate in finance. Another example is developed by Refinitiv.[293] With the technology called Reuters News Tracer, it is possible to understand whether the news on Twitter is real or fake.[294] Kensho is another NLP solution that is also used

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[286] Al-Shabandar et al., 4.

[287] Meltem Karatepe Kaya, "The Use of Artificial Intelligence in Law," in *Multidisciplinary Perspectives of AI: Past, Present, Future,* ed. Harika Süklün (On İki Levha Yayıncılık, 2021), 128.

[288] Karatepe Kaya, "Artificial Intelligence," 129.

[289] Karatepe Kaya, 129.

[290] Bartolini et al., "Legal Compliance," 49.

[291] Al-Shabandar et al., "Financial Compliance Management," 4.

[292] Sentieo, "Fight information overload with our AI-powered research platform.," 2019. https://sentieo.com/

[293] Al-Shabandar, The Application of Artificial Intelligence in Financial Compliance Management, 4. "Sentiment analysis using AI has also been applied by Refinitiv to extract sentiment from transcripts using NLP, ML, information retrieval, text analytics and human-computer interactions."

[294] Sameena Shah, and Reginald Chua, "Is It News or Noise?," *Thomson Reuters*, https://archive.annual-report.thomsonreuters.com/2016/is-it-news-or-noise.html.

by Goldman Sachs.[295] With Kensho, it is possible to convert unstructured data to structured ones to be used in ML. Ayasdi created an AI platform using NLP. This platform is used by Citi to aid with capital planning and HSBC for AML.[296]

There are numerous other AI solutions.[297] For instance, a digital tool named BoardEffect supports directors about compliance.[298] This tool is beneficial in three areas: the meeting cycle, the annual board cycle, and the board development cycle. Arago Hiro is a platform driven by AI and used by UBS Global Production Services for process automation.[299] Nasdaq SMARTS Market Surveillance's ML technology is another example first used by Hong Kong Exchange in 2018 for compliance and market surveillance.[300] FCA has a Digital Regulatory Reporting Project that aims to improve the effectiveness and efficiency of regulatory reporting.[301] A UK-based company, Cube, developed a product called Automated Regulatory Intelligence, a compliance automation platform used by some of the world's largest banks, including Citi, Wells Fargo, the Royal Bank of Canada, and Deutsche Bank.[302]

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[295] "Kensho," Kensho, accessed March 15, 2024, https://www.kensho.com.
[296] Al-Shabandar et al., "Financial Compliance Management," 4.
[297] Al-Shabandar et al., 4.
[298] Jeremy Barlow, "Compliance Management and Board of Directors' Role in Compliance and Ethics," *BoardEffect*, February 27, 2017, https://www.boardeffect.com/blog/compliance-management-board-directors-role/.
[299] Dan DeFrancesco, "UBS Implements Arago's Artificial Intelligence Platform," *Waterstechnology*, October 27, 2016, https://www.waterstechnology.com/trading-tech/2475612/ubs-implements-aragos-artificial-intelligence-platform.
[300] Nasdaq, "HKEX Deploys Nasdaq SMARTS Machine Learning Technology for Market Surveillance," press release, April 16, 2018, https://www.nasdaq.com/about/press-center/hkex-deploys-nasdaq-smarts-machine-learning-technology-market-surveillance.
[301] "Digital Regulatory Reporting," Financial Conduct Authority, last updated February 10, 2023, https://www.fca.org.uk/innovation/regtech/digital-regulatory-reporting.
[302] "Cube," CUBE, accessed March 15 2024, https://cube.global/.

There is another platform, Compliance.ai, that tracks regulatory updates automatically.[303] A joint venture between the Royal Bank of Scotland and Vocalink in the UK developed an ML system for fraud detection that examines transactions by clients to detect fraudulent invoicing and other possible instances of fraud.[304] Promontory from IBM provides AI-driven solutions to lower RegTech expenses.[305] As an instance of solutions, IBM's Watson AI expertise and Promontory's domain-specific knowledge are combined to provide real-time audio conversation analysis, including turning voice interactions into text, which is then categorized into possible noncompliance categories using NLP.[306]

There are also some other projects in the compliance area that used NLP and NLS as OpenLaws, ProLeMAS and MIREL.[307] For example, Eurocases sorts the EU case law documents according to their subject with NLP.[308]

One of the ML examples used in the market is mentioned in detail in a report of a non-profit organization, Coalition for Integrity.[309] AB InBev, one of the biggest breweries in the world, needed a compliance system after the acquisition of another brewer company, SABMiller, in 2016. For multinational companies, ensuring compliance across the entire organization requires significant effort and expense, particularly in the area of anti-corruption compliance. So, after this enlargement, developing a

303 "Compliance.AI," Compliance.AI, accessed March 15 2024, https://www.compliance.ai/.

304 Aziz and Dowling, "Risk Management," 44. "A study by Colladon and Remondi (2017) using real data from 33,000 transactions of an Italian factoring firm shows the effectiveness of such analysis in fraud detection."

305 "IBM Promontory," IBM, accessed March 15, 2024, https://www.promontory.com/.

306 Aziz and Dowling, "Risk Management," 45.

307 Bartolini et al., "Legal Compliance," 49; "OpenLaws," OpenLaws, accessed March 15, 2024, https://openlaws.us/; "ProLeMAS," Livio Robaldo, accessed March 15, 2024, http://www.liviorobaldo.com/prolemas.html.

308 "Eurocases," Products, Eurocases, accessed March 15, 2024, https://eurocases.eu/.

309 Coalition for Integrity, *Using Machine Learning*, 39.

technological solution was inevitable for AB InBev. They started to develop and build a data platform named Operation BrewRIGHT in three years. This platform is equipped with ML technology that uses data from various systems and departments in all countries in which the company operates. The platform was developed for several topics, from AML to antitrust, related to compliance. With the establishment of this platform, it is now possible for compliance employees to investigate transactions easily.[310] This platform has improved compliance processes and reduced the investigation costs of suspect payments.[311] AB InBev's Global Vice President for Ethics and Compliance, Matt Galvin, stated that AB InBev had to pay around $1.8 million for one investigation into a certain kind of third-party vendor in three countries. With this platform, the firm pays around $250,000 for one investigation into the same vendor in six countries.[312]

Another example is Microsoft's Compliance Analytics Program Solution. The company's Compliance and Ethics team developed a technology solution for compliance risks aimed at recognizing and controlling "high-risk" contracts and third parties.[313]

And lastly, drugmaker Alexion Pharmaceuticals started looking for an ML solution for anti-corruption while under investigation by the Securities and Exchange Commission into its compliance with the U.S. Foreign Corrupt Practices Act, an anti-bribery law. They selected a solution from Lextegrity

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310 Dylan Tokar, "AB InBev Taps Machine Learning to Root Out Corruption," *The Wall Street Journal*, January 17, 2020, https://www.wsj.com/articles/ab-inbev-taps-machine-learning-to-root-out-corruption-11579257001.

311 AB InBev, *Annual Report*, 2020, https://www.ab-inbev.com/content/dam/abinbev/news-media/press-releases/2021/02/AB%20InBev%202020%20Annual%20Report_FINALpdf.pdf.

312 Tokar, "AB InBev."

313 Coalition for Integrity, *Using Machine Learning*, 46.

Inc. that integrates compliance policies and procedures with efficient approval and workflow processes.[314]

2.5. Artificial Intelligence Implications for Compliance in Finance Companies

2.5.1. In General

This topic deserves special attention in relation to the finance sector since this sector is subject to overregulation. To prevent future financial crises, new regulations have been implemented to promote transparency.[315] Along with the regulatory fines, financial companies' compliance burden has substantially risen due to the new regulations.

Financial companies' operations were altered as a result of the financial crisis and subsequent regulatory changes; they scaled down their activities, decreased their profitability, and reduced their risk-taking.[316]

Widespread regulatory changes have impacted technological advancement in the world's biggest banks, and they have been the main forces behind the development of regtech since the financial crisis, as these companies demand effective instruments to navigate complicated regulatory requirements.[317] However, a significant rise in legal and compliance operations had already begun before 2008, as they grew in size and reached new industries and countries, bringing new operational and legal

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314 Dylan Tokar, "Corporate Compliance Programs Hit Refresh with Data-Analytics Tools," *The Wall Street Journal*, September 22, 2020, https://www.wsj.com/articles/corporate-compliance-programs-hit-refresh-with-data-analytics-tools-11600767001.
315 Al-Shabandar et al., "Financial Compliance Management," 1.
316 Arner, Barberis, and Buckley, "Regtech," 5.
317 Arner, Barberis, and Buckley, 7-8.

problems.[318] So, the use of AI in compliance management is becoming more popular among financial institutions and regulators.[319]

In addition to the overregulation factor, the emergence of fintech companies and the competition that arose from them became another driver of the development of regtech in the finance sector.[320] Fintech companies influence all aspects of the global financial system, have revolutionized finance, and have introduced new regulatory difficulties.

The expansion of FinTech has been driven by start-ups and information technology companies.[321] While fintechs are in direct competition with traditional banks in Europe and the US, such activity is not common in Türkiye. Banks in Türkiye are incorporating fintechs into their ecosystems rather than competing with them. However, conventional banks started to increasingly acquire fintech companies or form partnerships with them globally.[322]

AI is used by financial companies for various objectives, such as anticipating cash flow events, adjusting credit scores, trading, portfolio management, advisory services, detecting fraud, risk management, and compliance. For instance, a survey made by the Bank of England and the FCA in 2019 shows that 57% of the 200 financial firms, including the biggest banks, are using AI applications for risk management and compliance purposes, including anti-fraud and AML.[323] According to another survey

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318 Arner, Barberis, and Buckley, 9.

319 Al-Shabandar et al., "Financial Compliance Management," 1.

320 Arner, Barberis, and Buckley, "Regtech," 3-4.

321 Arner, Barberis, and Buckley," 3-4, 7.

322 Finextra, "Banks Rushing to Collaborate with FinTech Startups," News, September 16, 2016, https://www.finextra.com/newsarticle/29443/banks-rushing-to-collaborate-with-fintech-startupsi.

323 James Proudman, "Managing Machines: The Governance of Artificial Intelligence," June 4, 2019, https://www.bankofengland.co.uk/-/media/boe/files/speech/2019/managing-machines-the-governance-of-artificial-intelligence-speech-by-james-proudman.

made by Refinitiv in 2019, 90% of 4,500 financial institutions have already used ML, either partially or entirely.[324] Additionally, IDC, a premier technology research and consulting company, predicts that financial services will be the leading sector to spend the most on AI solutions in 2024–2028.[325]

AI is also used by auditors, who are an integral part of the supervision of companies, to conduct investigations into financial stability and compliance.[326] Instead of evaluating manually collected historical data, AI is enabling continuous monitoring that facilitates real-time decision-making in the auditing area.[327] Massive rises in the amount and types of data sent to regulatory bodies present a huge chance to automate compliance and tracking processes.[328]

However, before deciding to use ML, it is still crucial to consider the company's innovation strategy, specific financial crime compliance concerns, current operational issues, and the likelihood of success.[329]

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[324] Refinitive, *Smarter Humans. Smarter Machine.*, 2019, 10, https://www.lseg.com/content/dam/lseg/en_us/documents/media-centre/press-releases/refinitiv/refinitiv-ai-ml-survey-report.pdf.

[325] "IDC: Artificial Intelligence Will Contribute $19.9 Trillion to the Global Economy Through 2030 and Drive 3.5% of Global GDP in 2030," IDC Media Center, IDC, August 19, 2024, https://www.idc.com/getdoc.jsp?containerId=prUS52600524.

[326] Karen Kroll, "Using Artificial Intelligence in Internal Audit: The Future is Now," *Internal Audit 360*, March 18, 2021, https://internalaudit360.com/using-artificial-intelligencein-internal-audit-the-future-is-now/.

[327] Gérard Hertig, "Use of AI by Financial Players: The Emerging Evidence" (ECGI Working Paper Series in Law, No 623/2022, 2022), 16, http://ssrn.com/abstract_id=4013559.

[328] Arner, Barberis, and Buckley," 4.

[329] Deloitte and UOB, *Money Laundering and Terrorist Financing*, 10.

2.5.2. Anti-Money Laundering, Counter Terrorist Financing, and Know Your Customer

Financial companies are required to implement a robust, risk-based AML/CFT system that encompasses the reporting of suspicious transactions, governance, rules and procedures, record-keeping, and training.[330]

The European Anti-Money Laundering Directive (AMLD6), the Money Laundering, Terrorist Financing and Transfer of Funds Regulations 2017 and the Criminal Finances Act 2017 of the UK, and the Law on Prevention of Laundering Proceeds of Crime of Türkiye are among the regulations that must be adhered to by the relevant companies.[331]

It is necessary for financial companies to submit reports to regulatory agencies such as the European Banking Authority (EBA), the National Crime Agency of the UK (NCA), the Financial Crimes Enforcement Network of the US (FinCEN), and the Turkish Financial Crimes Investigation Board (MASAK).[332]

In Türkiye, pursuant to Article 5 of the Law on Prevention of Laundering Proceeds of Crime, the Ministry of Finance is authorized to determine the

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[330] Umut Turksen, Vladlena Benson, and Bogdan Adamyk, "Legal Implications of Automated Suspicious Transaction Monitoring: Enhancing Integrity of AI," *Journal of Banking Regulation* 25, (2024): 362, https://doi.org/10.1057/s41261-024-00233-2.

[331] Directive (EU) 2024/1640 of the European Parliament and of the Council of 31 May 2024 on the Mechanisms to Be Put in Place by Member States for the Prevention of the Use of the Financial System for the Purposes of Money Laundering or Terrorist Financing, Amending Directive (EU) 2019/1937, and Amending and Repealing Directive (EU) 2015/849 (Text with EEA relevance), 2024 O.J. (L 2024/1640), http://data.europa.eu/eli/dir/2024/1640/oj; The Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations, 2017, No.692, https://www.legislation.gov.uk/uksi/2017/692/contents; Law on Prevention of Laundering Proceeds of Crime, No. 5549, https://www.mevzuat.gov.tr/mevzuat?MevzuatNo=5549&MevzuatTur=1&MevzuatTertip=5.

[332] Al-Shabandar et al., "Financial Compliance Management," 4.

procedures and principles regarding the measures to be taken, including the establishment of internal audit, control, and risk management systems and the appointment of administrative officials equipped with the necessary authority to ensure compliance with the obligations imposed by the Law. The regulation governing the implementation of this law stipulates that a compliance officer may be assigned, and if so, this officer shall report suspicious transactions to MASAK.[333]

According to the Regulation on Compliance Program, published based on Article 5 of Law No. 5549, banks and others listed in the regulation are obliged to establish a "compliance program" and appoint a "compliance officer" to ensure compliance with the relevant Law and secondary legislation to prevent laundering proceeds of crime and financing of terrorism. [334]

Financial companies must proceed through the know your customer (KYC) process with every new client to avoid fraud, financing of terrorism, and money laundering as part of AML regulations.[335]

The overall cost of financial crime compliance for 1,088 financial organizations in North America, Latin America, Europe, and Asia-Pacific in 2022 was $274.1 billion, according to a report.[336] Despite spending billions to combat money laundering, it is becoming increasingly challenging to

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333 Articles 3/1-k and 27/1 of the Regulation on Measures Regarding Prevention of Laundering Proceeds of Crime and Financing of Terrorism, No. 26751, https://masak.hmb.gov.tr/regulation-on-measures-regarding-prevention-of-laundering-proceeds-of-crime-and-financing-of-terrorism/.

334 Articles 3/1-h, ı, 4 and Regulation on Program of Compliance with Obligations of Anti-Money Laundering and Combating the Financing of Terrorism, No. 26999, https://masak.hmb.gov.tr/regulation-on-program-of-compliance-with-obligations-of-anti-money-laundering-and-combating-the-financing-of-terrorism/.

335 Al-Shabandar et al., 5.

336 LexisNexis Risk Solutions, *True Cost of Financial Crime Compliance Global Study*, 2023, https://risk.lexisnexis.com/global/en/insights-resources/research/true-cost-of-financial-crime-compliance-study-global-report.

monitor and identify illegal operations using conventional methods, as individuals targeting financial companies for criminal purposes also utilize technologies such as internet banking and electronic payments.[337]

Regtech has thrived in the AML area, and regulators are contemplating these technologies for oversight and analysis of the data that come from financial companies as well.[338] AI assists financial companies in identifying fraud or money laundering by monitoring customer transactions. AI may improve a bank's threat detection and reporting system's efficiency.[339]

A more concrete example would be the application of AI for name screening, which involves searching international databases of criminals, sanctioned, and blacklisted persons, as well as detecting suspicious activity and determining their risk level.[340] An example from the sector is United Overseas Bank's Anti-Money Laundering Suite (AMLS) ML solution.[341] This platform incorporates elements such as KYC, transaction monitoring, name screening, and payment screening, all based on the Bank's AML strategy.[342]

There is also an AI-based AML foundation, Invidem (formerly named Nordic KYC Utility), founded by the six biggest Nordic banks. This foundation is used for compliance with KYC regulations.[343] HSBC is using

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337 Deloitte and UOB, *Money Laundering and Terrorist Financing*, 2.
338 Arner, Barberis, and Buckley, "Regtech," 13.
339 Deloitte and UOB, *Money Laundering and Terrorist Financing*, 8.
340 Deloitte and UOB, 9-10.
341 UOB, "UOB and Tookitaki Strengthen Combat Against Money Laundering Through Co-Created Machine Learning Solution," news release, August 24, 2018, https://www.uobgroup.com/web-resources/uobgroup/pdf/newsroom/2018/UOB-and-Tookitaki-strengthen-combat-against-money-laundering.pdf.
342 Deloitte and UOB, *Money Laundering and Terrorist Financing*, 25.
343 Sanna Wass, "Nordic Banks' Agreement on One KYC Standard a 'Unique Advantage' For New Utility," *S&P Global*, August 20, 2020, https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-

another AI technology for anti-money laundering that was created by a data analytics company called Quantexa.[344] This platform is now used by ING, Allianz, and the Public Sector Fraud Authority of the UK.

Also, in Türkiye, H3M Analytics is developing softwares that detects and reports money laundering transactions using AI and offers its products to many leading companies in the finance sector, like Ziraat Bankası, İş Bankası, Akbank, etc.[345] For instance, Kroton, the pioneering use of active learning technology in graph networks, has been executed with İş Bankaso, facilitating the identification of money laundering networks that remain undetected through the analysis of individual entities.[346]

Research by the ACFE revealed that only 18% of the organizations polled have currently adopted AI to combat financial crime. However, 32% of these organizations anticipate using AI within the next 1-2 years.[347]

Since regulatory agencies harshly punish financial companies for law infractions, particularly in AML/CFT, companies are cautious about deploying advanced AI/ML systems in financial surveillance and money laundering activities. The fact that fraudsters can identify weaknesses in AI systems, especially if they are built by a third party, is another reason to

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headlines/nordic-banks-agreement-on-one-kyc-standard-a-unique-advantage-for-new-utility-59716897.

[344] "Tech for Good: How HSBC is Using Technology to Combat Crime," Resources, Quantexa, May 6, 2024, https://www.quantexa.com/resources/hsbc-using-technology-to-combat-crime/.

[345] "KROTON: (Real) AI based Anti-Money-Laundering," Linkedin, https://www.linkedin.com/products/h3m-io-kroton-real-ai-based-antimoneylaundering-that-actually-works/.

[346] "Active Learning (AL) is about AI asking questions to learn, instead of memorizing and mimicking already labelled sample space. Every day the system investigates 10s of millions of transactions and generates questions for the analysts. AL enables a much more valuable sampling space and insights for the models, therefore increasing the precision of the models." "Bank Case Studies," H3M.IO, https://h3m.io/case-studies.

[347] ACFE and SAS, *Benchmarking Report*, 8.

avoid utilizing complicated AI models.[348] Consequently, financial companies prefer the implementation of simple AI systems for monitoring while maintaining ultimate human oversight to evaluate each questionable operation or suspicious transaction.[349]

2.6.Business Readiness for Artificial Intelligence Solutions

Before implementing an AI-based solution, a company should evaluate the business use case to determine whether there is a real need for it. The steps in this context include dedicating the problem and suggesting solutions, arranging a dataset sufficient to train a model, transforming the data, and training the model and making predictions.[350]

If a company has large data sets, using ML might be advantageous in terms of the wide-ranging outputs it can produce.[351] However, ML may not be necessary for every company; rule-based programs might be sufficient for some companies. A company should consider the problem at hand, evaluate potential technologies, and choose the most suitable one.

There are many steps companies must take to achieve ML readiness and use AI efficiently. First, the problem should be clear. In our case, the problem is managing compliance. It is crucial to determine which specific problem ML will be applied to, and the scope of the solution should also be defined. Another question to answer is where the solution will be applied. Third-party, customer, or employee noncompliances might be categories for the solutions. Also, broadening the scope of the solution only after testing narrow-scoped solutions and assessing whether the outputs are

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348 Turksen, Benson, and Adamyk, "Enhancing Integrity of AI," 372.
349 Turksen, Benson, and Adamyk, 372.
350 Coalition for Integrity, *Using Machine Learning*, 11.
351 Armour and Eidenmüller, "Self-driving Corporations?," 97.

sufficient might be a beneficial option for companies.[352] Second, it is crucial to have enough data to use in ML models. Accessibility, maintainability, and usability of data are also important for establishing a system.[353] Third, developing and validating ML models poses other challenges for companies.

Also, the model should be accurate and have high-quality functionality.[354] And lastly, developing the model is not enough; the ML should be improved constantly. The system should always be supervised. Risks might rise and should be controlled; otherwise, they are likely to cause big losses and damages for the company.

Establishing costs should also be considered by the business entity. Businesses should think about the possible costs and returns on investment associated with a ML solution.[355] If the solution reduces the old system's cost, this might be a positive factor to choose an AI system.

Before deploying such a technology, evaluation of the maturity or validity of the current technology and identification of improvement possibilities; comprehension of the principal risks and threats; a solid governance framework for AI in the company; determining the strategy, framework, and the implications of implementing AI; strategy for operationalising and documenting the AI process; appropriate structure for monitoring and validating the approach for operationalisation as well as the outcome of deployment that it meets regulatory objectives and addresses risks

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352 Coalition for Integrity, *Using Machine Learning*, 17.

353 AISOMA, "AI-Readiness – Is Your Business Ready for the Use of AI? A Checklist with 7 Points," *Medium* (blog), March 16, 2018, https://medium.com/@webadmin_46735/ai-readiness-is-your-business-ready-for-the-use-of-ai-a-checklist-with-7-points-92510f0f5dd3.

354 Philip Robinson, "How to Track Machine Learning Readiness and Why We Should All Care," *Medium* (blog), February 20, 2019, https://towardsdatascience.com/how-to-track-machine-learning-readiness-andwhy-we-should-all-care-8639ca7dd7b6.

355 Coalition for Integrity, *Using Machine Learning*, 17-18.

appropriately; and robust due diligence of vendors selected to provide the technology know-how and infrastructure are important actions to be taken. [356]

For success, the model architecture must have all the required controls and be able to work inside the business process; essential skills and resources must be properly empowered by facilitating training for the review team and giving clear explanations to the reviewers on the rationale behind particular forecasts; governance must be included in the model lifecycle; and the documentation of the model must have essential components such as a detailed description of the technology and its functioning, business needs, anticipated outcomes, risk mitigation strategies, testing and assurance protocols, and disaster recovery plans.[357]

3. EVALUATION OF ARTIFICIAL INTELLIGENCE'S POSITION IN COMPANIES

3.1. In General

One of the major discussions revolves around AI's role in companies. AI can contribute to companies in three distinct forms: assisted AI, advisory (augmented) AI, and autonomous (actor) AI.[358] These categories are generally based on the level of AI autonomy.

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[356] Deloitte and UOB, *Money Laundering and Terrorist Financing*, 11.
[357] Deloitte and UOB, *Money Laundering and Terrorist Financing*, 32.
[358] Vegard Kolbjørnsrud, Richard Amico, and Robert J. Thomas, *The Promise of Artificial Intelligence: Redefining Management in the Workforce of the Future*, (Accenture Institute for High Performance, 2016), 12, https://www.researchgate.net/publication/306039533; Möslein, Robots in the Boardroom, 8; Anand Rao, "AI: Everywhere and Nowhere (Part 3)," *Insurance Thought Leadership* (blog), June 8, 2016, https://www.insurancethoughtleadership.com/ai-machine-learning/ai-everywhere-and-nowhere-part-3.

Assisted AI, also known as narrow or soft AI, is the least autonomous and productive.[359] While this type of AI can carry out some operations, it cannot make judgments independently.[360] Apple's Siri, Android rival, and the Google Assistant are some examples.[361] Advisory AI is more autonomous and productive in comparison to assisted AI. Although it cannot make decisions on its own, it can collaborate with people to make decisions.[362] This type of AI offers knowledge and guidance that would be challenging or take longer to acquire in traditional methods.[363] IBM's Watson platform is one of the advisory AI solutions. And the last one, autonomous AI, represents the highest-level role. It's capable of independently assessing possibilities, reaching conclusions, or questioning established norms; consequently, it makes decisions on its own.[364] One of the examples is the fully autonomous vehicle Waymo.[365] Autonomous robotic trading and handling of loan applications are some other areas where this type of AI is utilized.[366] In all forms, AI will play a pivotal role in the company's decision-making.[367]

Therefore, usage of AI for compliance might be in these three forms also. AI, which companies use for compliance, primarily serves as an assistant or advising tool in all situations. Although the initial application of AI in compliance is to assist humans, it is expected that this will evolve into a

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[359] Martin Petrin, "Corporate Management in the Age of AI," *Columbia Business Law Review* 2019, no. 3 (2020): 980, https://doi.org/10.7916/cblr.v2019i3.5118.
[360] Anand Rao, "AI: Everywhere and Nowhere."
[361] Petrin, "Corporate Management," 981.
[362] Anand Rao, "AI: Everywhere and Nowhere."
[363] Rao.
[364] Kolbjørnsrud, Amico and Thomas, *The Promise of Artificial Intelligence*, 17; Rao.
[365] "Waymo," Waymo, accessed September 3, 2024, https://waymo.com/.
[366] Kolbjørnsrud, Amico and Thomas, *The Promise of Artificial Intelligence*, 17.
[367] Möslein, "Robots in the Boardroom," 7.

decrease in the need for human oversight, ultimately leading to the emergence of AI-led management.[368]

Compliance tasks could be evaluated the same as company management tasks and primarily divided into two categories: administrative tasks and non-administrative judgment tasks. Compliance responsibilities in areas like strategy, innovation, creativity, and people management will be defined as non-administrative duties.[369] There is no doubt that AI can fulfill the administrative tasks of compliance as explained in detail in the above chapter.[370] Nevertheless, the question of whether AI will eventually replace humans in non-administrative judgment duties remains controversial. However, it is clear that AI will also have a significant impact in all these areas.

3.2. AI as an Assistant or Advisory Tool

Compliance tools in the market can be categorized under these roles.[371] While humans share decision-making authority with augmented AI and learn from each other, assisted AI only performs specific tasks, and human beings retain full decision-making authority.[372] These two roles can be evaluated as one in which decision-making delegation is only partial.[373]

Assistant AI tools serve as a guide for companies, offering suggestions; on the other hand, augmented AI tools function as a business partner, assessing the decisions made by the management and actively contributing

[368] Petrin, "Corporate Management," 1013.
[369] Kolbjørnsrud, Amico and Thomas, *The Promise of Artificial Intelligence*, 12.
[370] Petrin, "Corporate Management," 971.
[371] Armour and Eidenmüller, "Self Driving Corporations?," 96.
[372] Möslein, "Robots in the Boardroom," 8.
[373] Möslein, 9.

to the development of a shared strategy by providing alternative options.[374] Advisory AI tools may help with difficult problem-solving and decision-making by asking and answering questions and creating scenarios and simulations.[375]

3.3. Artificial Intelligence as a Director

The last and most advanced role for AI to contribute to companies is being appointed as a director. If the relevant legislation permits the appointment of legal persons as directors, AI can also function as a director. However, directly serving as a director does not appear to be a possible option in the near future, as it will be explained, especially for compliance purposes.

Appointing software instead of a human being to the board can be advantageous and therefore more appealing for companies due to the convenience it can provide to both the board and the company. For instance, challenges that are unique to human species, such as time constraints and difficulty locating sufficient time, are not encountered with AI directors.[376] Reduction in agency costs, absence of individual aspirations or pursuits[377], and having a greater ability to reconcile interests are other benefits of appointing AI directors.[378] Moreover, implementing AI as a director has the

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[374] Sevda Bora Çınar, "Şirketler Hukukunun Geleceği Üzerine Bir İnceleme: Şirket Yönetiminde Yapay Zekâ" (PhD diss., Akdeniz University, 2022), 151, Ulusal Tez Merkezi (741960).
[375] Kolbjørnsrud, Amico and Thomas, *The Promise of Artificial Intelligence*, 17.
[376] Will Pugh, "Why Not Appoint an Algorithm to Your Corporate Board?," *Slate*, March 24, 2019, https://slate.com/technology/2019/03/artificial-intelligence-corporate-board-algorithm.html.
[377] Karatepe Kaya, "Yapay Zeka," 92; Dülger, "Robot Yargıç/Avukat," 6-7. Artificial intelligence, which is devoid of emotions and moods such as sadness, anger, jealously, and ambition, might be more suited for to be a director compared to a human in this respect, as it does not possess these disadvantages.
[378] Armour and Eidenmüller, "Self-driving Corporations?," 108; Pugh, "Appoint an Algorithm."

capacity to enhance management effectiveness, as AI can be trained to operate solely in the organization's best interests. Appointing AI as a director has the potential to improve decision-making, streamline operations, and provide new perspectives to management.[379] From the compliance perspective, it is possible to expect an improvement in the company's compliance since AI can be designed to recognize and strictly follow all relevant laws.[380] Therefore, one of the main differences that distinguishes AI from human directors is that their compliance with laws can be ensured much more easily with their codes and algorithms.[381] However, this comes with the strong assumption that AI is free from bias, has access to sufficient data and is capable of adequately performing the requiring tasks.

Vital is known as the world's first AI director.[382] Vital (Validating Investment Tool for Advancing Life Sciences), created by a firm in the UK, was appointed director in 2014 by Deep Knowledge Ventures, a Hong Kong-based venture capital firm.[383] This AI director has the same voting rights as other regular directors in deciding whether or not the company invests in a certain business.[384] Vital contributed to two important investment decisions for the company. One of them was the funding of Pathway Pharmaceuticals, which ranks and chooses customized cancer

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[379] Muzaffer Eroğlu, and Meltem Karatepe Kaya, "Impact of Artificial Intelligence on Corporate Board Diversity Policies and Regulations," *European Business Organization Law Review* 23, (2022): 543, https://doi.org/10.1007/s40804-022-00251-5.
[380] Petrin, "Corporate Management," 1022.
[381] Möslein, "Robots in the Boardroom," 17.
[382] Ellie Zolfagharifard, "Would You Take Orders from a Robot? An Artificial Intelligence Becomes the World's First Company Director," *Daily Mail*, May 19, 2014, http://www.dailymail.co.uk/sciencetech/article-2632920/Would-orders-ROBOT-Artificial-intelligence-world-s-company-director-Japan.html.
[383] Zolfagharifard, "Orders from a Robot."
[384] Rob Wile, "A Venture Capital Firm Just Named an Algorithm to Its Board of Directors — Here's What It Actually Does," *Business Insider*, May 13, 2014, https://www.businessinsider.com/vital-named-to-board-2014-5?IR=T.

treatments based on platform technology, and Insilico Medicine, which creates computer-assisted approaches for drug discovery in aging research.[385] However, due to the AI's lack of status as a corporate director under Hong Kong corporate laws, Vital is treated "as a director with observer status."[386] Another AI director example is from a Scandinavian tech firm, Alicia T, who has been designated to vote on managerial choices in 2016.[387]

4. ADVANTAGES AND CHALLENGES OF ARTIFICIAL INTELLIGENCE-BASED COMPLIANCE SOLUTIONS

4.1. Advantages

The primary objectives of utilizing AI are to achieve cost and time savings, enhance productivity, mitigate risks, and improve the certainty of decision-making.[388] Better utilization of data will enhance monitoring, resulting in lower agency costs and flatter organizational structures.[389]

As stated by the Director of Strategy and Competition of the FCA, technology in general might be helpful in simplifying the process of

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385 Möslein, "Robots in the Boardroom," 1.

386 Nicky Burridge, "Artificial Intelligence Gets A Seat in the Boardroom," *Nikkei Asia*, May 10, 2017, https://asia.nikkei.com/Business/Artificial-intelligence-gets-a-seat-in-the-boardroom.

387 Samar Ashour, "Artificial Intelligence in the Boardroom: An Outright Exposure to Directorial Liability?," *Oxford Business Law Blog*, October 17, 2020, https://blogs.law.ox.ac.uk/business-law-blog/blog/2020/10/artificial-intelligence-boardroom-outright-exposure-directorial#:~:text=If%20the%20use%20of%20AI,reason%20of%20reliance%20on%20AI.."
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388 Stephen Anthony Woods et al., "Personnel Selection in the Digital Age: A Review of Validity and Applicant Reactions, and Future Research Challenges," *European Journal of Work and Organisational Psychology* 29, no. 1, (2020): 65, https://doi.org/10.1080/1359432X.2019.1681401.

389 Philippe Aghion, Benjamin Jones, and Charles I. Jones, "Artificial Intelligence and Economic Growth," (NBER Working Paper Series Cambridge, MA, October 2017), https://www.nber.org/system/files/working_papers/w23928/w23928.pdf.

complying with reporting requirements. Secondly, it can enhance efficiency in regulatory compliance by bridging the gap between the objective of regulatory standards and their subsequent interpretation and implementation inside companies. Third, technology aids companies in managing and utilizing their existing data, facilitates improved decision-making, and identifies noncompliant entities more efficiently. Eventually, facilitate the execution of compliance tasks in a more efficient and distinct manner.[390]

According to a research, bank compliance costs were almost $100 billion globally in 2016.[391] Not just the banks or the companies that operate in finance struggle with compliance costs. As it is seen in AB InBev's situation above, it is more than possible to reduce these costs with suitable technology. For example, BBVA's 8,000 employees of 137,000 were working in compliance in 2019, and they invested in AI to reduce this cost.[392]

JWG, a think tank focused on financial regulation, explained the high costs of financial compliance as, "It took 30,000+ pages and 1.7 million paragraphs to describe the rules in MiFID II and has cost the industry over €2.5 billion to date to implement. Much of this cost has been spent interpreting and re-writing the rules into business texts and computer code. And the problem is only going to get more complicated. Over 50,000 regulations were published across the G20 between 2009 and 2012. This rose to over 50,000 regulatory updates in 2015, almost double that of 2012. It seems that, much like Moore's law in the field of computing, there is a

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390 Christopher Woolard, "Innovation in RegTech," July 20, 2016, https://www.fca.org.uk/news/speeches/london-fintech-week-2016-innovation-regtech.
391 Hayley McDowell, "Banks Spent Close To $100 Billion on Compliance Last Year," *The Trade News*, April 13, 2017, https://www.thetradenews.com/Sell-side/Banks-spent-close-to-$100-billion-on-compliance-last-year/.
392 Aziz and Dowling, "Risk Management," 47.

'Regulatory Law' that means the operational burden of controlling regulations will double every few years."[393]

The ever-growing volume of regulations is one of the leading causes of compliance costs. The quantity of regulations poses significant challenges for companies. Since, when compared to humans, AI is far more capable of handling and analyzing large amounts of complicated data, it has the potential to enhance compliance.[394]

4.2. Challenges

4.2.1. In General

Developing software for compliance comes with numerous challenges. Inaccurate assumptions, inherent bias, missing data, and lack of validation are still potential issues with AI-driven decision-making.[395] Out-of-date or irrelevant data, a sample size that is inadequate or is not diverse enough, unsuitable data collection methods, and an imbalance between the training data and the data that was actually used during operations are some of the data challenges.[396] While some of these challenges have straightforward solutions, others are more complex and may not be full resolved in the near future. According to Refinitiv survey, biggest ML adoption challenges are poor data quality, lack of data availability, finding data science talent.[397]

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[393] Tom Groenfeldt, "Taming the High Costs of Compliance with Tech," *Forbes*, March 22, 2018, https://www.forbes.com/sites/tomgroenfeldt/2018/03/22/taming-the-high-costs-of-compliance-with-tech/?sh=2cc07d575d3f.

[394] Petrin, "Corporate Management," 1021.

[395] Hertig, "Use of AI," 24.

[396] Deloitte, *Managing Algorithmic Risks: Safeguarding The Use Of Complex Algorithms and Machine Learning*, 2017, 4-6, https://www2.deloitte.com/us/en/pages/risk/articles/algorithmic-machine-learning-risk-management.html.

[397] Refinitive, *Smarter Humans. Smarter Machine.*, 13.

Additionally, these technological solutions provide genuine risks even though they provide strong compliance tools, according to a law professor in this area, Kenneth Bamberger.[398]

4.2.2. Detecting Law

The primary challenge in achieving compliance and developing compliance-focused software is identifying the relevant laws. Determining which set of rules to use in a specific situation and understanding the meaning of these rules is crucial.

In terms of scoping and fragmentation, there are many sources of the law to consider, not just codes. For example, the scope of the data protection law is broad and hazy. Even like explanatory memorandums, court cases, written legislation, directives, uncodified customary law, and jurisprudence; not only national sources but also international and supranational legal sources should be considered.[399]

If all the related legislation is not processed, the output will be inaccurate, and the intended result will not be achieved, leading to a failure in compliance. Involving all legislation might be impossible since a regulation about a topic might be included in any other code. It is possible to confine

[398] Bamberger, "Technologies of Compliance," 669–670. "They permit computer programmers to interpret legal requirements; they mask the uncertainty of the very hazards with which policy makers are concerned; they skew decision making through an "automation bias" that privileges personal self-interest over sound judgment; and their lack of transparency thwarts oversight and accountability. These phenomena played a critical role in the recent financial crisis."

[399] Sandra Olislaegers, "Early Lessons Learned in the ENDORSE Project: Legal Challenges and Possibilities in Developing Data Protection Compliance Software," in *Privacy and Identity Management for Life 7th IFIP WG 9.2, 9.6/11.7, 11.4, 11.6/PrimeLife International Summer School Trento, Italy, September 5-9, 2011 Revised Selected Papers*, ed. Jan Camenisch et al. (Springer, 2012), 74.

the scope of compliance, which would place limits on the software. Nevertheless, the main provisions must be contained.

Norm conflicts are generally resolved according to explicit conflict resolution rules. However, if there is no rule for resolving the conflict, a non-codified hierarchy of norms will be applied. These are known as: higher legislation prevails over lower legislation; if they are at the same level, specific rules prevail over general rules; or newer rules prevail over older legislation.

How to apply this hierarchy of norms will be the next problem. According to Sandra Olislaegers, there are three options.[400] First, the system can signal when there is a norm conflict, and users can apply the conflict resolution to the system (human choice). Second, a flexible system can apply conflict resolution itself. Third, the hierarchy of norms can be hardcoded into the system (a closed system with a hardcoded legal hierarchy).

With the first one, a serious number of tasks will be assigned to the users because of the norm conflicts. With the second one, after allowing the system, the hierarchy of norms will be applied by the system automatically and autonomously. The third one is a nearly impossible solution, unless the scope of the software is extremely limited. Many conditions and all exceptions should be incorporated into the system, as there will be changes in the law. The second option seems to be the most suitable one under these conditions.

The next step is to define and state the meaning of the law, which will depend on the type of legal norm (open norms, substantive norms, procedural norms, competence norms, and behavioral norms).

[400] Olislaegers, 77-78.

Interpretation of legal norms might be automated if it is possible, or human guidance might be used for interpretation.[401]

Achieving compliance is not always simple because of the lack of criteria in regulations. Companies need standards about regulation to be available to help them achieve compliance. For instance, European Union harmonised standards provide the necessary criteria for companies to comply with EU legislation.[402] However, this is a rare instance.[403] While the lack of criteria and uncertainty regarding complying with certain laws is already a challenge, implementing AI under this circumstance will pose difficulties.

4.2.3. Modeling the Data

It is crucial to have large volumes of pre-labeled and relevant data to create a model that functions properly.[404] It is difficult to find enough data for specific legal disputes, making it challenging to use AI techniques to build an effective model.

Another problem is whether AI experts can create a model, which consists of two components: 1-0/yes-no. According to Lord Hoffman, "If a legal rule requires a fact to be proved (a 'fact in issue'), a judge or jury must decide whether or not it happened. There is no room for a finding that it might

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[401] Olislaegers, 80.

[402] "Harmonised Standards," European Commission, accessed September 20, 2023, https://single-market-economy.ec.europa.eu/single-market/european-standards/harmonised-standards_en.

[403] Cesare Bartolini et al., "Towards Legal Compliance by Correlating Standards and Laws with a Semi-automated Methodology" (paper presented at the 28th Benelux Conference on Artificial Intelligence, Amsterdam, November 10-11, 2016) https://doi.org/10.1007/978-3-319-67468-1_4.

[404] Maxi Scherer, "Artificial Intelligence and Legal Decision-Making: The Wide Open? Study on the Example of International Arbitration," (Queen Mary School of Law Legal Studies Research Paper No. 318/2019, May 22, 2019), 15-16, https://ssrn.com/abstract=3392669.

have happened. The law operates a binary system in which the only values are 0 and 1. The fact either happened or it did not. If the tribunal is left in doubt, the doubt is resolved by a rule that one party or the other carries the burden of proof. If the party who bears the burden of proof fails to discharge it, a value of 0 is returned and the fact is treated as not having happened. If he does discharge it, a value of 1 is returned and the fact is treated as having happened."[405]

Even though some legal questions have yes-no answers, every case has a different legal dispute, and its components will raise different questions. Therefore, each algorithm and model may need to be tailored to the specific case. Lastly, previous data may become irrelevant due to new regulations.

4.2.4. Data Quality and Availability

Just as modeling data is important, the quality of the data used in the model is also crucial.[406] ML requires comprehensive, good-quality, and bias-free data to function properly.[407] If data quality is not adequate for AI to function well, it might have a negative outcome for performance. Automated alerts for lacking or out-of-date data might be a solution for this challenge.[408] Data might be stored in different departments or systems. Internal policies may pose challenges in using the data, or the data required for ML may not be stored by the firm.

Data availability is important, especially for supervised learning. A large amount of data is not sufficient; it should also be representative of the problem. Ensuring this is challenging due to compliance requirements,

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[405] Scherer, "Artificial Intelligence," 17.

[406] Sebatian Schelter et al., "On Challenges in Machine Learning Model Management," *Bulletin of the IEEE Computer Society Technical Committee on Data Engineering* (2018): 6.

[407] Al-Shabandar et al., "Financial Compliance Management," 2.

[408] Schelter, "Machine Learning Model Management," 7.

which are closely tied to laws with many different contexts. Additionally, labeling the training data for ML is challenging and can be costly. Expertise is needed to label the data that will be processed in ML. Because of these obstacles, using AI for medium and small organizations is relatively difficult.

4.2.5. Prior Examples

AI helps analyze Big Data by predicting event probabilities based on past circumstances.[409] ML is a technology that learns from prior data. It lacks the creative intelligence that makes it possible to learn without examples.[410] The purpose of ML is to use the analysis of past data to create future-generalizable rules. Heuristics identified by an algorithm through analysis of previous data should be feasible enough for generating reliable outcomes in novel and unforeseen events in the future.[411] In the absence of them, it is not possible to produce an ML model that works properly.

4.2.6. Black Box Models and Transparency Issues

It is challenging to understand and confirm how some algorithms do a certain task. The algorithms' mechanisms become less clear as models become more complicated to improve performance.[412] Because of this transparency issue, compliance issues might arise with ML too. Due to the lack of explainability of how a system works, ethical problems may arise. For instance, discrimination is an ethical issue for ML. However, it is now

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409 Enriques and Zetzsche, "Corporate Technologies," 12.

410 Carl Benedikt Frey, and Michael A. Osborne, "The Future Of Employment: How Susceptible Are Jobs to Computerisation?," *Technological Forecasting And Social Change* 114, (2017): 262, https://doi.org/10.1016/j.techfore.2016.08.019.

411 Harry Surden, "Machine Learning and Law," *Washington Law Review* 89, (2014): 105, https://ssrn.com/abstract=2417415.

412 Deloitte and UOB, *Money Laundering and Terrorist Financing*, 19.

possible to explain complex models using recent methods like LIME or Shapley values, which is a widely adapted approach, especially for deep learning and NLP.[413]

4.2.7. Bias

Ethical problems can also occur directly because of the producers of AI.[414] The AI is not independent of the subjective opinions and sentiments of those who produce it. The most significant issue that may result from it is bias.[415] Biased logic may affect both the input data and the design of algorithms.[416] Therefore, ethical concerns might arise from the AI's reflection of personal preconceptions.

Programmers or producers' engaging in cooperation with competing firms and undermining the company's interests through the utilization of AI and inherent biases are some risks.[417] Since AI software is still being developed by people, it will always be subject to our inherent biases and will only be as good as the data and instructions given to it.[418]

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[413] Peter Cooman, "Demystifying Black-Box Models with SHAP Value Analysis," *Medium* (blog), May 12, 2018, https://medium.com/civis-analytics/demystifying-black-box-models-with-shap-value-analysis-3e20b536fc80. "There has been a lot of research in this space on how to make model outcomes more explainable. Some examples of this are SHapley Additive explanation (SHAP) and Local Interpretable Model-Agnostic Explanations (LIME) which attempt to determine the impact of specific features on localised predictions. SHAP is filling the gap to provide the link between accuracy and human interpretation of models using game theory. While LIME aids the predictions of ML classificaters. Research in this space is ongoing.", "The Shapley value is a solution concept used in game theory" that is introduced by Lloyd Shapley in 1951.

[414] Eroğlu and Karatepe Kaya, "Impact of Artificial Intelligence," 562.

[415] Enriques and Zetzsche, "Corporate Technologies," 75.

[416] Deloitte, *Managing Algorithmic Risks,* 4.

[417] Eroğlu and Karatepe Kaya, "Impact of Artificial Intelligence," 558; Petrin, "Corporate management," 1005.

[418] Petrin, "Corporate Management," 1005.

Models may provide inaccurate results due to the cognitive biases of those who create or use them. Inaccurate results might also result from a lack of governance or when workers' actions don't match up with the company principles.[419] Consequently, automated choices are bound to be flawed and contaminated with prejudice when AI generates biased data.[420]

There are a few instances of prejudice that are readily apparent in the market.[421] For example, it is indicated in a research that advertisements promoting coaching services for high-paying occupations were shown to males more often than to females in India.[422] Another study found that customers who have Afro-American-sounding names wait longer or face cancellation more, and female passengers face longer and more expensive rides on peer transportation apps.[423]

4.2.8. Lack of Creative and Social Intelligence

ML systems still struggle with jobs requiring "social intelligence" or the understanding of how people will interpret potentially confusing messages.[424] Facing works and special services for particular ones are some

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419 Deloitte, *Managing Algorithmic Risks,* 4.

420 Samar Ashour, "Artificial Intelligence: A Roadblock in the Way of Compliance with the GDPR?," *Oxford Business Law Blog,* April 1, 2021, https://blogs.law.ox.ac.uk/business-law-blog/blog/2021/04/artificial-intelligence-roadblock-way-compliance-gdpr.

421 Eroğlu and Karatepe Kaya, "Impact of Artificial Intelligence," 563.

422 Amit Datta, Michael Carl Tschantz, and Anupam Datta, "Automated Experiments on Ad Privacy Settings: A tale of Opacity, Choice, and Discrimination," Proceedings on Privacy Enhancing Technologies 2015, no.1 (2015): 105, http://dx.doi.org/10.1515/popets-2015-0007.

423 Yanbo Ge et al., "Racial and Gender Discrimination in Transportation Network Companies," (NBER Working Paper Series, Cambridge, MA, October 2016), 16, https://www.nber.org/papers/w22776.

423 Soltes, "Corporate Compliance Programs," 983.

424 Armour and Sako, "AI-Enabled Business Models," 7; Frey and Osborne, "Computerisation."

examples.[425] ML lacks social intelligence, so it is hard to process semantic tasks for it. It is controversial whether creative or inventive machines will ever exist or whether AI simply lacks this potential.[426]

4.2.9. Skills Gap

One of the challenges is human-related. There is a lack of employees with enough expertise to provide AI/ML services in compliance.[427] According to a survey made in 2017, the top 1000 American firms worry about the skilled workers needed for AI.[428] Training and experience are key in this situation since it is not possible to have an AI-based system work properly without professionals.

Additionally, developing an initial model is not enough; the ML should be improved constantly. It is not possible for a company to just apply ML to a compliance solution. It is a continuous process that should be updated and improved regularly, highlighting the need for more AI professionals.[429]

4.2.10. Enabling Interoperability Between Systems

In the market, there are many RegTech solutions from different suppliers. The lack of a common model in this domain may cause confusion and disorder for companies using different solutions from various suppliers.

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[425] Armour and Sako, 30.
[426] Möslein, "Robots in the Boardroom," 14.
[427] Refinitive, *Smarter Humans. Smarter Machine.*, 13.
[428] Aziz and Dowling, "Risk Management," 46.
[429] Turksen, Benson, and Adamyk, "Enhancing Integrity of AI," 360.

CHAPTER III: POSSIBLE LEGAL IMPACTS OF USING ARTIFICIAL INTELLIGENCE IN CORPORATE COMPLIANCE

1. IN GENERAL

According to a study from 2021, 51% of Asia-Pacific respondents utilize AI for business, while 82% of European, Middle Eastern, and African respondents consider AI to be a vital component of their company strategy.[430] The utilization of AI is projected to lead to a 3.5% increase in global GDP by the year 2030.[431] Companies that use AI in their business processes will pursue numerous aims at once and maximize the results of several goals concurrently.[432] And one of the maximized results will be in the compliance area, as explained in the above chapter. The global reach and use of this technology make it impossible that this situation will not have legal consequences.

The way AI and law interact will heavily influence the future of legal practice, necessitating comprehension of both legal ideas and technology. In this chapter, the potential impacts of AI in the legal domain will be evaluated.

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[430] Hertig, "Use of AI," 13. According to the PWC report, by 2030, AI has the potential to make a significant economic impact, estimated at $15.7 trillion, surpassing the combined economic output of China and India in 2017. At the same time, the implementation of AI technology is projected to lead to the loss of 85 million jobs while simultaneously creating 97 million new employment opportunities. PricewaterhouseCoopers, *Sizing the Prize*, 2017, 3, https://www.pwc.com/gx/en/issues/analytics/assets/pwc-ai-analysis-sizing-the-prize-report.pdf; Hande Berktan, "Yapay Zeka Ekonomisinin 2030'da 15.7 Trilyon Dolarlık Hacme Ulaşması Bekleniyor," *Bloomberg HT*, April 9, 2022, https://www.bloomberght.com/yapay-zeka-ekonomisinin-2030da-157-trilyon-dolarlik-hacme-ulasmasi-bekleniyor-2303872.

[431] "IDC: Artificial Intelligence," IDC.

[432] Petrin, "Corporate Management," 970.

2. EVALUATING LEGISLATION TO USE ARTIFICIAL INTELLIGENCE IN COMPANIES

2.1. Duty Delegation to Artificial Intelligence

The board of directors may assign part of their duties to management, who are ultimately in charge of the company's daily operations in accordance with the related national law. The board may delegate to various individuals and committees. Usually, delegation refers to a specific range of duties and powers; otherwise, it would be impossible to fully delegate the management function to others. Consequently, the board's primary responsibility becomes the oversight of management, with just a small number of high-level managerial responsibilities reserved.

Although the directors have flexibility in forming the company's management organization, it is debatable whether they can delegate tasks to AI.[433] It is generally regulated that duties can be delegated to humans or persons; whether or not powers can be delegated to AI depends on the interpretation of the provisions. It is possible to conclude that directors can delegate duties to AI by interpreting legal provisions more broadly.[434]

Many national legislation require that the articles of association of the relevant corporation incorporate a provision for delegating duties. For instance, in Italy, Article 2381, para. 2 CC and in Switzerland, Article 716b, para. 1 OR are the provisions in this regard.[435] Although these kinds of provisions are common, the issue of whether AI may be assigned duties unresolved as they typically pertain to human delegates.

For instance, the Corporations Act of Australia permits directors to assign any or all of their functions to other natural persons; nevertheless, it does

[433] Möslein, "Robots in the Boardroom," 9.
[434] Möslein, 10.
[435] Möslein, 9.

not specifically permit the delegation of functions to AI.[436] However, there are several methods for delegation "unless the company's constitution provides otherwise," as stipulated in the Act.[437] It can be argued that it is possible to assign duties to AI in accordance with Australian legislation.

In the UK, it is regulated in the Companies Act that “a director of a company must act in accordance with the company's constitution and only exercise powers for the purposes for which they are conferred.”[438] Therefore, it is possible to delegate duties to AI if the company’s constitution grants such a possibility. For example, the Model Articles state that: “5.—(1) Subject to the articles, the directors may delegate any of the powers which are conferred on them under the articles— (a)to such person or committee; (b)by such means (including by power of attorney); (c)to such an extent; (d)in relation to such matters or territories; and (e)on such terms and conditions; as they think fit.”[439] While it is arguable whether this provision might also be used to assign jobs to AI, the delegation of decision-making powers to AI is not fully forbidden.[440]

As it is explained under Chapter I, duty delegation is possible with the company's articles of association including a provision allowing for the delegation of duties and an internal directive to regulate its management under Turkish law.[441] Thus, the board of directors can function as a supervisory board by overseeing those who have taken over authority and

[436] Corporations Act No. 50, 2001, 198D, https://www.legislation.gov.au/C2004A00818/latest/text.
[437] Ashour, “Artificial Intelligence in the Boardroom.”
[438] Companies Act, 2006, c. 46, §§ 171.
[439] The Companies (Model Articles) Regulations, 2008, No. 3239, 5, https://www.legislation.gov.uk/uksi/2008/3229/schedule/2/part/2/made?view=plain. According to UK law, all limited companies must have articles of association. “Model” articles are standard default articles of association that a company may apply.
[440] Möslein, “Robots in the Boardroom,” 10.
[441] TCC No. 6102 Article 367.

duties without engaging in the company's daily operations or routine tasks.[442]

According to Article 367 of TCC, duties can be delegated to one or more directors or third parties. Third parties are those who are not on the board of directors. These persons may be a shareholder, an employee, someone who has no relation to the company, or a legal person.[443]

On the other hand, it is not possible for the directors to delegate their duties to AI currently, since AI lacks legal personality. However, it might be possible to delegate duties to AI as it obtains legal personality in the future.

As it is explained in Chapter I, in Turkish law, compliance duties that can be delegated are the daily tasks. Compliance tasks can be delegated to AI in this context. For instance, establishing the necessary systems for financial planning to the extent required by accounting, financial auditing, and the management of the company is one of the undelegable duties of the board of directors, which is stipulated under Article 375/1-c of TCC.[444] What is meant by this provision is the determination of the accounting organization, consolidated accounting system, rules for keeping books and records, and preparation of accounting plans in accordance with the law and generally accepted accounting principles, that is, the organization of the order, or, in a sense, the accounting department.[445]

However, as it is explained in the rationale of the Article 375, it is the "duty of establishing order" that cannot be delegated, but keeping accounting records can.[446] The law does not oblige the board of directors to keep books

[442] Kırca, Şehirali Çelik and Manavgat, *Cilt 1*, 592.
[443] Kırca, Şehirali Çelik and Manavgat, 596.
[444] Kendigelen, *Yeni Türk Ticaret Kanunu*, 266.
[445] Rationale for Article 375/1-c of TCC No. 6102.
[446] Rationale for Article 375/1-c of TCC No. 6102.

and prepare financial statements themselves.[447] The board of directors has the option to delegate its authority to experts in these activities; moreover, it is a duty of care to employ experts if it lacks any or sufficient knowledge on the subject.[448] Using AI to exercise these duties can be evaluated in the scope of duty of care as well.

Nonetheless, while it may be feasible to delegate duties to AI, some duties of the directors, as outlined in Chapter I, cannot be delegated in any case. For instance, the duty and authority to keep commercial books not related to the accounting of the company that are stipulated under Article 375/1-f of TCC cannot be delegated.[449] However, considering the capabilities of AI, it is clear that it can perform these duties quickly and with almost no possibility of corruption.

Delegation of the non-delegable duties to AI might be possible in the future with the inclusion of AI in the boards of directors. Alternatively, the non-delegable duties of the board of directors can be adjusted, and these restrictions can be relaxed, considering the fact that AI can perform these tasks quicker, more effectively, and at a lower cost.[450]

Consequently, while it is currently not possible to delegate directors' duties to AI, that could change in the future when AI obtains legal personality; even the non-delegable tasks can be performed by AI as it begins to take part in the board of directors.

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[447] Kırca, Şehirali Çelik and Manavgat, *Cilt 1*, 548.
[448] Kırca, Şehirali Çelik and Manavgat, 548.
[449] These are keeping the share, board of directors' decision and general assembly meeting and negotiation books, preparing the annual activity report and corporate governance statement and submitting it to the general assembly, preparing general assembly meetings and executing general assembly resolutions. Article 375/1-f of TCC No. 6102.
[450] Zeynep Dönmez Canseven, "Yapay Zekânın Anonim Şirketin Yönetim Kurulunda Yer Almasının Hukuki Sorumluluğa Etkisi" (Master's Thesis, Yeditepe University, 2021), 110, Ulusal Tez Merkezi (669839).

2.2. Appointing Artificial Intelligence as a Director

It is not possible to appoint AI or even legal persons as directors in many countries.[451] Directors must be natural persons, especially in most of the capitalist economies, like the US.[452] According to the Companies Act 2006 of the UK, directors must be natural persons.[453] Section 9 of the Corporations Act of Australia also mandates that a director must be a natural person.[454] German corporate law also features similar provisions, allowing only natural persons to serve as directors.[455]

There are also countries that are less restrictive when it comes to allowing non-natural persons to serve as directors. Belgium, France, Liechtenstein, and Spain are some of these countries.[456] These countries allow legal persons to serve as directors, as long as they physically nominate a natural person to act as their representative.[457] However, in Liechtenstein, there is a restriction on corporate directors; at least one of the directors must be a natural person.

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451 Karatepe Kaya, "Dersler," 78.
452 Delaware Code, Title 8, § 141(b). (Delaware General Corporation Law). "The board of directors of a corporation shall consist of one or more members, each of whom shall be a natural person."; California Corporations Code § 164. "'Directors' means natural persons designated in the articles as such or elected by the incorporators and natural persons designated, elected or appointed by any other name or title to act as directors, and their successors."
453 Companies Act, 2006, c. 46, §§ 156 A, 250.
454 Ashour, "Artificial Intelligence in the Boardroom."
455 Möslein, "Robots in the Boardroom," 15. In the same way, Italian and Swiss company law stipulated that legal persons cannot be appointed as director as well.
456 Article 61.2 of the Code des sociétés of Belgium; Article 225-20 of the Code de Commerce of France; Article 212.1 of the Ley de Sociedades de Capital of Spain; Article 180 para. 1 Personen- und Gesellschaftsrecht of Liechtenstein.
457 Eroğlu and Karatepe Kaya, "Impact of Artificial Intelligence," 555.

Türkiye is also among the countries whose legislation allows legal persons to be directors.[458] However, a provision in the articles of association may require that the directors be natural persons or may include a provision regarding the legal types of legal persons that may be directors.[459]

According to the previous code, it was not possible to appoint legal persons as directors.[460] In the period of the previous code, it was argued that the connection between the representative and the legal person was severed when the representative of the legal person was elected to the board of directors and the legal person was not held responsible for the representative's actions and transactions.[461] With this amendment, the legal person itself can be held liable as a director instead of the natural person who is its representative.[462]

According to the provision of Article 359 of the TCC, if a legal person is elected as a director of a joint-stock company, in addition to the legal person, only one natural person elected by the legal person on behalf of the legal person must be registered and announced, and only this registered person can attend the meetings and vote on behalf of the legal person. A similar regulation could be envisaged for AI to ensure effective cooperation

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[458] TCC No. 6102 Article 359/2; Cafer Eminoğlu, and Fatma Betül Çakır, "Anonim Ortaklıklarda Tüzel Kişilerin Yönetim Kurulu Üyesi Seçilmesi ve Kamu Tüzel Kişilerinin Yönetim Kuruluna Temsilci Ataması," *Gazi Üniversitesi Hukuk Fakültesi* Dergisi 18, no. 3-4 (2014): 279; Fatih Bilgili, and Ertan Demirkapı, *Şirketler Hukuku Dersleri*, 8th ed. (Dora Yayınları, 2021), 273; Akdağ Güney, *Yönetim Kurulu*, 41; Şaban Kayıhan, *Şirketler Hukuku*, 5th ed. (Seçkin Yayıncılık, 2021), 208; Tekinalp, *Sermaye Ortaklıkları,* 228.

[459] İsmail Kırca, "Anonim Şirketlerde Tüzel Kişilerin Yönetim Kurulu Üyeliği," *Banka ve Ticaret Hukuku Dergisi* 28, no. 21, (2012): 53.

[460] With this amendment, it is no longer possible to elect a natural person as a director to represent a legal entity, and thus the debate over whether a legal entity shareholder can have more than one representative on the board of directors has also lost its validity. Kırca, "Tüzel Kişilerin Yönetim Kurulu Üyeliği," 52; Pulaşlı, *Şirketler Hukuku Şerhi Cilt I*, 1217-1218.

[461] Pulaşlı, 1215-1216.

[462] Pulaşlı, 1215-1216.

and communication between the AI director and other directors or shareholders.[463]

Since AI does not yet possess legal personality, the appointment to the board of directors of a joint-stock company is not possible. While it is not possible for AI to be a director under these provisions, there are also arguments about its legal personality. Possibilities such as evaluating AI as a product, legal person, or electronic personality are discussed. As will be briefly explained under Section 5.3, appointing personalities to AI, similar to companies, might be an appropriate solution in the future. Alternatively, the legislation will need to be amended to change the conditions for becoming a director in a way that will allow AI to become a director.[464]

Additionally, when AI participates in the board of directors, there may be pressure to follow its decisions. Adopting the opinion of the AI director will be the safest method, and it will be difficult to reveal their opinions for directors within the scope of the duty of care and liability.[465] A clear separation of management and oversight powers could be a solution to this problem, as both are held by the board of directors.[466] AI will be active and effective in the company's executive processes, and human directors, whose duties focus largely on data control, will fulfill these duties through the supervision environment.[467]

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463 Dönmez Canseven, "Yapay Zekâ," 112.

464 Harun Eryiğit, "Güncel Tartışmalar Işığında Yapay Zekâ ve A.Ş. Yönetim Kurullarının Yeniden Şekillendirilmesi," in *Uluslararası Bilişim ve Teknoloji Hukuku Sempozyumu Tebliğler Kitabı,* ed. Şerafettin Ekici, Ekrem Solak, and Muhammed Emre Avşar, (Adalet Yayınevi, 2021), 106.

465 Sergio Alberto Gramitto Ricci, "Artificial Agents in Corporate Boardrooms," *Cornell Law Review* 105, no. 3, (2020): 901-902, https://ssrn.com/abstract=3677627.

466 Eryiğit, "Güncel Tartışmalar Işığında Yapay Zekâ," 118.

467 Eryiğit, 118.

3. IMPACTS ON DUTY OF CARE

There is a danger that companies could collapse due to the rise in dangers and inaction in addressing them in a timely manner, as well as the determination of their root causes. Uncertainty, unpredictability, and sudden changes in complex business processes can escalate to a point where human observers are unable to monitor them.[468] In this context, addressing the risks might only be possible with an AI-powered system.

Boards of directors that rely exclusively on information from humans are gradually becoming obsolete. It is certain that whether using or not AI-based technologies in companies will affect the duty of care of the directors.[469] Determining whether AI will be used and choosing the proper AI application are decisions that the board of directors must take within the scope of their duty of care.[470]

In situations where demonstrating the necessary care is impossible without technological support, it is crucial to articulate the rationale for not using these technologies, considering the costs involved in acquiring them and the company's available resources. Additionally, it is crucial to demonstrate that the decisions made without technology are reasonable, of adequate quality, and rational.[471]

In the compliance domain, it is evident that the vast array of regulations and intricate business processes necessitate the use of AI's data processing capabilities for companies. Considering the success of AI in tasks with high

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[468] Bora Çınar, "Yapay Zekâ," 165.

[469] Baran Can Kaya, *Directors' Duty of Care in Corporate Governance: Legal, Technological and Sustainability Perspectives* (Adalet Yayınevi, 2024), 96.

[470] İrfan Akın, "Dijital Gelişmelerin Şirketler Hukuku Üzerindeki Etkisi," *Türk-Alman Üniversitesi Hukuk Fakültesi Dergisi* 4, no. 1 (2022): 20.

[471] Bora Çınar, "Yapay Zekâ," 165.

statistical load, it is necessary to evaluate whether the duty of care should be interpreted in a way that requires the use of AI for compliance.

Directors' being required to use AI due to its superior information processing skills can be discussed.[472] Although AI enhances efficiency and success in companies' compliance processes, there are expenses associated with deploying AI solutions, and it is an entrepreneurial decision.[473] For these reasons, decisions about whether to use AI should be evaluated within the scope of the business judgment rule. Directors who make decisions in accordance with the standards of business judgment rules will not face liability.[474]

In American law, where the business judgment rule has been used as a standard for decisions made by directors for almost two hundred years, it has been believed that decisions made within the scope of business management cannot be subject to litigation.[475]

Holding directors liable for every outcome of their decisions inherently diminishes the efficiency of decision-making processes.[476] The business judgment rule is determining the appropriate balance between authority and accountability.[477] This approach provides managers with the opportunity to advance, facilitating developments and ensuring that the company's progress is not obstructed by concerns over accountability.

The principle of the business judgment rule is established in American law, regulated as a positive norm in German law, and incorporated into Turkish

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472 Möslein, "Robots in the Boardroom," 11

473 Möslein, 12.

474 Akdağ Güney, *Yönetim Kurulu*, 189.

475 Kervankıran, "Business Judgment Rule," 258.

476 İsmail Kırca, "Anonim Şirket Yönetim Kurulu Kararlarında Takdir Yetkisi-Özen Borcu," *Banka ve Ticaret Hukuku Dergisi* 22, no. 3, (2004): 90.

477 Stephen M. Bainbridge, "The Business Judgment Rule as Abstention Doctrine," *Vanderbilt Law Review* 57, no. 1 (2004): 129, https://scholarship.law.vanderbilt.edu/vlr/vol57/iss1/3

law as the rationale of the TCC.[478] The Delaware Supreme Court defines the business judgment rule as "a presumption that in making a business decision, the directors of a corporation acted on an informed basis, in good faith, and in the honest belief that the action taken was in the best interests of the company."[479]

A breach of duty of care may result from failure to use adequate technology to improve compliance processing after evaluating business needs. Despite the increased prevalence and accessibility of these technologies compared to the past, it is still difficult to say that directors have a duty to delegate process information to AI. It is hard to mandate directors to use AI in accordance with their duty of care considering the requisite technological skills and associated costs involved in its development.[480] Additionally, the results of AI solutions may not always surpass human performance.[481]

However, considering the rapid advancement of AI, it is essential to conduct evaluations on a case-by-case basis.[482] Many companies that cannot adapt to developments quickly are likely to fall behind and perhaps disappear from the market. In this way, not using easily accessible and widely used AI-based tools in the sector could be considered a breach of the duty of care of directors.

It is becoming a fundamental part of the duty of directors of large companies to follow the latest trends in technology and integrate the innovations they deem necessary in the company.[483] Especially in the competitive sectors like finance, companies are constantly investing in

[478] Rationale for Article 369 of TCC No. 6102; Akdağ Güney, *Yönetim Kurulu*, 189; Kervankıran, "Business Judgment Rule," 254, 258-259, 261-262.
[479] *Aronson vs. Lewis*, *Delaware Supreme Court* 1984, 473 A. 2d s. 812.
[480] Möslein, "Robots in the Boardroom," 13.
[481] Möslein, 13.
[482] Güçlütürk, 277.
[483] Bora Çınar, "Yapay Zekâ," 169.

cutting-edge technologies to streamline processes. Although the implementation of AI in companies with substantial capital should be regarded as an essential measure that is consistent with corporate objectives, companies of a smaller scale should make the decision based on their needs and capabilities.[484]

Once the decision has been made to use AI within the scope of this duty, selecting the appropriate system service providers also falls under the duty of care. Additionally, while deploying AI for compliance, directors must ensure that all its activities adhere to laws, as failure to do so could breach their duty of care. Directors' duty of care requires them to monitor and ensure that all firm and external transactions are compliant with the law while also monitoring these.[485] While applying the AI's outcomes to company decisions, directors should question whether the data used by AI is consistent, reliable, and unbiased.

There is also the risk of the presence of pressure to follow AI's decisions.[486] Because they perceive AI as an intelligent program, natural persons serving as directors may feel pressured to agree with the views expressed by AI. Thus, directors can skip making judgments independently and instead rely on AI-made decisions across every area. Because of these, directors also should have done the necessary research and examination on the relevant subject, even if it would not be a detailed examination in every aspect, and must express their opinion.[487]

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484 Kaya, *Directors' Duty of Care*, 98.
485 Yaşar, "Compliance," 253-254, 280.
486 Ricci, "Artificial Agents," 901-902.
487 Ricci, 902.

4. IMPACTS ON DUTY OF OVERSIGHT

The board of directors' oversight duty includes general oversight of the company with reviewing management's activity and operations.[488] Even though some powers can be delegated to AI, corporate law restricts this delegation authority by requiring directors to oversee the company's activities directly.[489] Therefore, the board of directors will always retain the company's oversight duty, even if they transfer the compliance tasks to AI technologies.[490] The primary responsibility of the board will be oversight once the tasks have been delegated. More specifically, directors must monitor and lead AI technologies that have compliance tasks.

Directors must assure system stability, prevent mistakes, and ensure that AI's judgments are consistent with current regulations when it is used to perform compliance functions and assign decision-making authority to them.[491] In the future, this duty will require boards to be more involved with data governance matters.[492] This will lead to an increase in oversight duty.

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488 Yaşar, "Compliance," 277; Armour and Eidenmüller, "Self-driving Corporations?," 478.

489 Dairy Containers Ltd v. NZI Bank Ltd, 2 NZLR 30 (1995). "It is the fundamental task of the directors to manage the business of the company. Theirs is the power and the responsibility of that management. To manage the company effectively, of course, the must necessarily delegate much of their power to executives of the company, especially in respect of its day to day operation. […] The directors may delegate powers and functions, using that term in a broad sense, but they cannot delegate the management function itself"; Re Barings plc No. 5 1 BCLC (1999). "Directors have, both collectively and individually, a continuing duty to acquire and maintain a sufficient knowledge and understanding of the company's business to enable them properly to discharge their duties as directors."

490 Möslein, "Robots in the Boardroom," 10.

491 Möslein, 11.

492 Armour and Eidenmüller, "Self-driving Corporations?," 105.

Additionally, legislation may state more precise responsibilities for AI oversight, such as making sure AI is robust, has enough capacity, is used appropriately, and doesn't malfunction.[493]

Under Turkish law, the duty of high-level oversight is stipulated as a non-delegable and inalienable duty and requires the creation of a necessary system inside the company rather than direct oversight by the board of directors.[494] To fulfill the duty of high-level oversight, an appropriate and accurate system must be established to oversee all corporate operations and transactions, with the individuals responsible inside the organization being carefully chosen and monitored.[495] The duty also includes overseeing the AI's progress and adjusting to changing situations as well.[496]

5. IMPACTS ON LIABILITY

5.1. Evaluating Directors' Liability in the Decision to Adopt ArtificiaI Intelligence Solutions

Measures to ensure compliance, whether taken or not, will impact the compliance duty and may lead to liability for the directors. By showing that they have fulfilled their duty with care and diligence, directors might avoid liability.

The use of AI can be assessed as a measure within the context of corporate compliance. Therefore, the use or non-use of AI will influence the compliance duty, necessitating a liability-based evaluation. When a company implements AI as a necessary component for compliance

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[493] Möslein, "Robots in the Boardroom," 11.
[494] Yaşar, "Compliance," 278.
[495] Armour and Eidenmüller, "Self-driving Corporations?," 105.
[496] Yaşar, "Compliance," 294.

processes, it signifies that the directors have taken steps to fulfill their compliance duty. If the use of AI meets the necessary requirements to fulfill compliance duty, it can potentially eliminate the directors' liability. In this context, the use of AI will alleviate the liability of the board of directors.[497]

When evaluating the liability of directors, whether using AI or not, the business judgment rule will come into play.[498] As previously stated, holding directors liable for every consequence of their every decision prevents the development of the companies and innovative decisions.

The business judgment rule limits the liability of directors by granting them freedom to make decisions as long as they are taken with the necessary and sufficient information.[499] If the decision is made based on accurate data and with due care by directors, even if it causes damage, no liability arises according to the business judgment rule stipulated in Articles 369 and 553 of the TCC. [500] In this context, directors must carefully consider and explain their decision to refrain from using AI.

5.2. Evaluating Directors' Liability in Illegalities Caused by Artificial Intelligence

While using or not using AI for compliance will affect the directors' liability, once AI is used, there will be a liability dispute due to the illegalities caused by AI, leading to various possible outcomes. The legality of the activities and outputs of AI depends on the validity of the data evaluated by it and whether the algorithm that determines the working conditions operates in

[497] Akın, "Dijital Gelişmeler," 20.
[498] Armour and Eidenmüller, "Self-driving Corporations?," 105; Kervankıran, "Business Judgment Rule," 262; Pulaşlı, *Şirketler Hukuku Şerhi Cilt I*, 1453.
[499] Kaya, *Directors' Duty of Care*, 100-101.
[500] Akın, "Dijital Gelişmeler," 20.

accordance with the law.[501] In any event, the board of directors' liability is the main concern.

Primarily, when AI is used to assist or advise directors, it has the potential to decrease the number of managers and raise their exposure to liability lawsuits by focusing them on fewer persons.[502] In this scenario, the board must understand the functioning of assisted and augmented AI, monitor its selection, operations, and other AI-related tasks.[503] As AI lacks legal personality at this stage, they cannot be held liable, hence, directors will retain liability for all AI-driven decisions.

If AI obtains personality and the board of directors delegates its management authority partially or completely to an AI, in accordance with the provisions of Articles 367/2 and 553/2 of the TCC, directors will not be liable due to the delegated authority. However, if the duties delegated to AI are among the non-delegable duties of the board of directors, the liability of other directors will continue. Additionally, the directors' liability will persist if they fail to exercise due diligence in the selection, supervision, and instruction of the AI.

5.3. Evaluating Liability Due to Artificial Intelligence’s Illegalities

There are various possibilities regarding liability in case of unlawful violations while using AI. Whether AI can be held liable will be determined by the assumptions about the legal status of the AI. In the scope of the current situation, since AI does not possess a legal personality, it can be considered product.

[501] Akın, 20.
[502] Petrin, “Corporate Management,” 1013-1014.
[503] Möslein, “Robots in the Boardroom,” 10-11.

AI can be considered product within the scope of the Consumer Protection Law No. 6502 (TKHK), and consumers may claim compensation for the damage suffered from the seller or producer.[504]

A company that uses AI may claim against AI's seller for breach of contract for its damages, or in cases where the damages are caused to the shareholders or creditors, these may claim against the company due to AI.[505] The company may also have recourse to the seller for the amount it had to pay due to this demand.

In Turkish law, since it is necessary to be a consumer in order to be able to claim liability for the producer within the scope of the Consumer Protection Law No. 6502 (TKHK), it is not possible for the company to have recourse to the producer of the AI.[506] If companies are considered as consumers within the scope of the TKHK, it is possible for the purchase of the AI by the company that includes AI in its board of directors to be considered as a consumer transaction.[507]

It can also be accepted that AI is a product within the context of the Product Liability Directive 85/374.[508] The liability of the producer is generally regulated by this Directive, but since AI was not widespread at the time it was issued, there are uncertainties as to whether the Directive will be applied to damages caused by AI. However, the proposed AI Liability

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504 Onur Sarı, "Yapay Zekânın Sebep Olduğu Zararlardan Doğan Sorumluluk," *Türkiye Barolar Birliği Dergisi* 32, no. 147 (2020): 294, https://tbbdergisi.barobirlik.org.tr/m2020-147-1909.

505 Salih Karadeniz, "Yapay Zekanın Anonim Şirket Yönetim Kuruluna Üyeliği ve Üyelikten Doğan Sorumluluğunun Değerlendirilmesi," *TAAD* no. 54 (2023): 274, https://taad.taa.gov.tr/yuklenenler/dosyalar/dergiler/taad/taad-54/4666af08-3281-4800-b976- c5b64f8abf81-makale-3-1433-salih-karadeniz.pdf.

506 Consumer Protection Law, No. 6502, https://www.mevzuat.gov.tr/mevzuatmetin/1.5.6502.pdf.

507 Sarı, "Sorumluluk," 294.

508 Sarı, 294.

Directive establishes strict liability for both the owner and producer of AI products.[509]

Imposing liability on software developers or others involved in the development of AI systems for any negligent error that occurs while utilizing AI-based management is one potential resolution.[510] Therefore, designers and producers of AI systems should be alert to the possibility of unintended consequences and alternate uses for their work.[511] Providers and creators of software may be subject to strict liability or fault liability under this system.[512]

In the next steps, which AI is participating in the board of directors, it is crucial to reconsider whether the legal procedures designed for human agencies are still applicable to AIs performing as agents.[513] Since the formation of company law took into account human directors, it requires directors to be honest and behave in good faith.[514] Nevertheless, AI does not possess a personality and lacks its own distinct set of rights and obligations.[515] For instance, liability regimes may turn out to be essentially

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509 *Proposal for a Directive of the European Parliament and of the Council on Adapting Non-Contractual Civil Liability Rules to Artificial Intelligence (AI Liability Directive)*, COM (2022) 496 final, (September 28, 2022), https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52022PC0496

510 Petrin, "Corporate Management," 971.

511 Mark Coeckelbergh, "Artificial Intelligence, Responsibility Attribution, And a Relational Justification of Explainability," *Science and Engineering Ethics* 26 (2020): 2059, https://doi.org/10.1007/s11948-019-00146-8.

512 Petrin, "Corporate Management," 971.

513 Enriques and Zetzsche, "Corporate Technologies," 74.

514 Möslein, "Robots in the Boardroom," 3; Melvi A. Eisenberg, "The Duty of Good Faith in Corporate Law," *Delaware Journal of Corporate Law,* 31, no.1 (2006), 1.

515 Eroğlu and Karatepe Kaya, "Impact of Artificial Intelligence," 556. "It is assumed that software developers and other individuals responsible for designing robotic systems share responsibility for actions induced by carelessness in the use of robotic instruments built using artificial intelligence technology. However, whether the robot can share these obligations is disputed."

useless due to AI not suffering financial loss.[516] Therefore, appropriate legal action has to be taken.

In the UK, a company's management is entitled to commence a derivative action if there is a valid reason, such as “a cause of action of an actual or proposed act, negligence, default, violation of duty, or breach of trust, in the UK, as per Section 260 of the Companies Act 2006.”[517] A cause of action may be brought against the director, another individual, or both.[518]

In Türkiye, under Articles 553 and 555 of the TCC, the liability of directors and managers is regulated. Although the plaintiff can file a lawsuit against any director or against the entire board of directors, each director bears responsibility for the damage to the degree of their own culpability, not the whole amount. It is also possible to file a lawsuit for their liability to legal person directors pursuant to Article 553.[519] Since, in accordance with the differentiated liability principle, each director's liability will be limited to the extent of his fault.[520] If AI becomes a director, malicious individuals could exploit this legal loophole to create companies in which the responsible party is absent.[521]

In 2017, the European Commission proposed giving AI "electronic personality" by granting them legal entity and holding them accountable

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[516] Möslein, “Robots in the Boardroom,” 17.
[517] Eroğlu and Karatepe Kaya, “Impact of Artificial Intelligence,” 556.
[518] UK Companies Act 2006 Section 260.
[519] Eminoğlu and Çakır, “Yönetim Kurulu,” 277.
[520] Ayhan, Çağlar and Özdamar, *Şirketler Hukuku*, 367-368; Bilgili and Demirkapı, *Şirketler Hukuku,* 396; Akdağ Güney, *Yönetim Kurulu*, 371-375; Pulaşlı, *Şirketler Hukuku Genel Esaslar*, 668-669; Tekinalp, *Sermaye Ortaklıkları,* 423-424. Unlike the joint and several liability in the former law, the institution of differentiated liability has been introduced.
[521] Karatepe Kaya, “Dersler,” 82; Shawn Bayern, “The Implications of Modern Business-Entity Law for the Regulation of Autonomous Systems,” *Stanford Technology Law Review* 19, no. 93 (2015): 101. http://dx.doi.org/10.1017/S1867299X00005729.

for damages caused.[522] This would enable both civil and criminal law to hold AI accountable, as legal entities could potentially face criminal responsibility.[523] Although giving robots rights and obligations is a valid notion, the acquisition of personality by AI could remobe the manufacturers' and other actors' legal obligations, potentially leading to abuse of using AI for liability avoidance.[524] However, the European Parliament also stated in 2020 that it is not necessary to give legal personality to AI in the "civil liability regime for artificial intelligence."[525]

Besides that, company structures might provide effective legal entity for AI under some legislation.[526] In the Trustees of Dartmouth Coll. V. Woodward case, it is stated that "a corporation is an artificial being, invisible, intangible, and existing only in contemplation of law."[527] Therefore, AI can also be regulated in a similar manner to how corporations are.[528] In addition to providing legal personality, this can provide many benefits regarding liability regime, increasing usage and eliminating hesitation of users and manufacturers. Furthermore, since AI will have its own capital, it will be able to cover any possible losses from its own budget.[529]

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522 Report with Recommendation to the Commission on Civil Law Rules on Robotics, European Parliament 2015/2103 (INL), 2017, https://www.europarl.europa.eu/doceo/document/A-8-2017-0005_EN.html?redirect. "Creating a specific legal status for robots in the long run, so that at least the most sophisticated autonomous robots could be established as having the status of electronic persons responsible for making good any damage they may cause, and possibly applying electronic personality to cases where robots make autonomous decisions or otherwise interact with third parties independently."

523 Janosch Delcker, "Europe Divided Over Robot 'Personhood,'" *POLITICO*, April 11, 2018. https://www.politico.eu/article/europe-divided-over-robot-ai-artificial-intelligence-personhood/.

524 Karatepe Kaya, "Dersler," 85.

525 Civil Liability Regime For Artificial Inteligence, European Parliament.

526 Bayern, "Autonomous Systems," 97.

527 Trustees of Dartmouth Coll. v Woodward 17 US 518, 636 (1819).

528 Simon Chesterman, "Artificial Intelligence and the Limits of Legal Personality" (NUS Law Working Paper 2020/025, 2020), 823, https://ssrn.com/abstract=3682372.

529 Karatepe Kaya, "Dersler," 87.

A possible liability solution might be professional indemnity insurance. In recent years, in the US and many European countries, it has become necessary for directors and officers of joint-stock companies to have liability insurance to protect against damages that may be incurred by the company through their own fault.[530]

A similar provision is stipulated under Article 361 of the TCC. This article stipulates the professional indemnity insurance of the directors of joint stock companies, which can be implemented for AI directors as well.[531] This provision safeguards the company's and its shareholders' interests while offering incentives to investors.[532] Professional indemnity insurance is not mandatory but an optional right, and insurance companies are hesitant to take on such a significant risk since they are unable to determine the full degree of potential losses caused by directors.[533]

The insurance companies are reluctant to insure even human director, making it nearly impossible to find a company willing to insure AI directors. So, this might be an optimal solution theoretically; however, it is difficult to happen in real life. Additionally, insurance should not be considered an institution that directly eliminates the liability, although the issue of liability remains unresolved, the insurance will serve to compensate for the loss.[534] On the other hand, if the use of AI as a director becomes

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[530] Pulaşlı, *Şirketler Hukuku Şerhi Cilt I*, 1540-1541.
[531] TCC No. 6102 Article 361.
[532] Murat Yusuf Akın, and Muhammed Sulu, "Yönetim Kurulu Üyelerinin Menfaati ile Şirket Menfaatinin Çatışması Bağlamında Sorumluluk," *Marmara Üniversitesi Hukuk Fakültesi Hukuk Araştırmaları Dergisi* 25, no.1 (2019): 181, https://dergipark.org.tr/tr/download/article-file/746696; Nurdan Gürgen, "6102 Sayılı Türk Ticaret Kanunu Kapsamında Anonim Şirket Yönetim Kurulu Üyelerinin Mesleki Sorumluluk Sigortası," *Anadolu Üniversitesi Hukuk Fakültesi Dergisi* 2, no. 3 (2016): 252, https://dergipark.org.tr/tr/download/article-file/1279055.
[533] Rationale for TCC No. 6102; Karatepe Kaya, "Dersler," 83-84.
[534] Akın and Sulu, "Sorumluluk", 181.

widespread, the necessary legal infrastructure is in Türkiye to cover the damages caused by AI.[535]

The European Parliament has suggested implementing compulsory insurance and automated no-fault compensation funds as potential options to address the accountability gap and mitigate the substantial risks posed by AI directors.[536]

As a result, given the current state of AI and its lack of personality, it appears that the most reasonable way to deal with the illegalities caused by AI within the current legal system is product liability. The damaged party should be able to claim compensation for the damages suffered from the producer and the seller. However, as AI becomes widespread in the future and begins to enter boards of directors, current liability systems need to be evaluated. At that stage, assigning legal personality to AI, similar to companies, seems like a reasonable solution.

6. IMPACTS ON DATA PROTECTION

Despite its advantages, using AI in business processes has certain risks and may cause harm in several ways. Companies increasingly obtain data that can be categorized according to several criteria, such as a large number of customers' names and addresses that might potentially breach customer

[535] Karatepe Kaya, "Dersler," 83.

[536] Andrea Bertolini, "Artificial Intelligence and Civil Liability" (study for the European Parliament, 2020) https://www.europarl.europa.eu/RegData/etudes/STUD/2020/621926/IPOL_STU(2020)621926_EN.pdf. "It has been speculated that they could also require their own insurance system, as well as a central agency to track every robot in operation across the EU."; Civil Liability Regime for Artificial Intelligence, European Parliament Resolution of 20 October 2020 With Recommendations to The Commission on a Civil Liability Regime for Artificial Intelligence, European Parliament (2020/2014(INL)), https://www.europarl.europa.eu/doceo/document/TA-9-2020-0276_EN.html.

privacy, as a result of the nature of their businesses.[537] There may be more sensitive information that needs special handling since the company has not been authorized for use or gathering.[538] The rapid development of technologies increases the necessity of legal limits and obligations that need to be determined and known.[539] Therefore, when applying AI solutions, companies must ensure compliance with related data protection laws and data handling and consent requirements due to the large amount of data being used. For example, Directive on Privacy and Electronic Communications, Data Governance Act, General Data Protection Regulation (GDPR) and Personal Data Protection Law of Türkiye (KVKK)[540].

Prior to integrating an AI provider into the data environment, companies must conduct thorough due diligence to ensure proper management of all legal reviews and intellectual property ownership. [541] When applying AI, it is also likely to face the problem of managing data in accordance with legislative standards and with regard for the limits of local jurisdictions.[542]

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537 Bora Çınar, "Yapay Zekâ," 165.

538 Bora Çınar, 165.

539 Karatepe Kaya, "Dersler," 72; Burland v Earle (1902), AC 83. "According to Lord Davey, the majority shareholders were trying to have for themselves the company`s money, property and advantages at the expense of other shareholders."

540 Directive 2002/58/EC of the European Parliament and of the Council of 12 July 2002 Concerning the Processing of Personal Data and the Protection of Privacy in the Electronic Communications Sector (Directive on Privacy and Electronic Communications), 2002 O.J. (L 201), http://data.europa.eu/eli/dir/2002/58/oj; Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the Protection of Natural Persons with Regard to the Processing of Personal Data and on the Free Movement of Such Data, and Repealing Directive 95/46/EC (General Data Protection Regulation), 2016 O.J. (L 119), https://eurlex.europa.eu/eli/reg/2016/679/oj; Personal Data Protection, Law No. 6698, https://www.mevzuat.gov.tr/mevzuat?MevzuatNo=6698&MevzuatTur=1&MevzuatTertip=5.

541 Deloitte and UOB, *Money Laundering and Terrorist Financing*," 21.

542 Deloitte and UOB, 21.

In spite of AI having the potential to cut costs and boost productivity, it raises the risk of compliance expenses and penalties under data protection regulations for noncompliance.[543] However, according to O'Reilly, just over half (53%) of the companies with deep ML expertise actually consider the data privacy concerns of their initiatives.[544]

In this context, companies should take into consideration the general basic principles of the processing of personal data that are legality, fairness, and transparency.[545] For instance, according to Article 22(1) of the GDPR, "The data subject shall have the right not to be subject to a decision based solely on automated processing, including profiling, which produces legal effects concerning him or her or similarly significantly affects him or her".[546] Companies can avoid this provision by using human intervention or can rely on only automatic decisions with the clear permission of the data subject or if it is needed to fulfill a contract with the data subject.[547]

Other data protection issues, such as bias, explainability, and data minimization, may also arise, potentially leading to law breaches. As it is stated by O'Reilly, only 40% of the companies verify the ML models are fair and unbiased.[548] A data subject has the right, under Article 15, to acquire meaningful information about the logic involved in automated decisions; yet, it might be difficult to comprehend the reasoning behind an automated decision due to the complexity of algorithms.[549] Also, the data minimization principle of Article 5-1.c mandates the restriction of personal data to what

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543 Samar Ashour, "Compliance with the GDPR."

544 O'Reilly, *The State of Machine Learning Adoption in the Enterprise,* https://ae.oreilly.com/The_State_of_Machine_Learning_Adoption_in_the_Enterprise.

545 Article 5/1.a of GDPR and Article 4 of KVKK.

546 Article 22 of GDPR.

547 Ashour, "Compliance with the GDPR."

548 Cem Dilmegani, "45 Statistics, Facts & Forecasts on Machine Learning," *AIMultiple Research*, November 14, 2024, https://research.aimultiple.com/ml-stats/.

549 Article 15 of GDPR; Ashour, "Compliance with the GDPR."

is necessary for their processing."[550] However, if AI is able to process massive amounts of data, it could encourage corporations to collect more personal data than is actually necessary.[551]

Lastly, Article 5-1.d of GDPR[552] requires companies to ensure that personal data is accurate and up-to-date; issues of bias or others, such as AI incorrectly interpreting data, might cause the violation of this obligation.[553]

7. IMPACTS ON AML PROCESSES

By incorporating AI-supported applications into AML processes, real-time monitoring can be performed, and suspicious transactions can be stopped at an early stage by monitoring transactions instantly. In parallel, suspicious activity reporting and other compliance documentation to be made to the relevant institutions will be automated and the processes will be accelerated. Thus, reporting processes will be carried out more effectively and without errors, and the reporting burden on compliance teams will be reduced. With the help of AI, compliance experts may improve the AML procedures while devoting more time to high-value tasks like strategic planning and thorough investigations.

However, it should be considered that AI technologies in KYC are classified as high-risk systems under the AI Act, meaning operators are subject to risk management, cybersecurity, and human oversight requirements of the AI Act.[554] The AI Act mandates a risk-based approach wherein high-risk AI systems are to be governed by stricter controls.

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550 Article 5/1.c of GDPR.
551 Ashour, "Compliance with the GDPR."
552 Article 5-1.d. of GDPR.
553 Ashour, "Compliance with the GDPR."
554 Regulation (EU) No. 2024/1689 (Artificial Intelligence Act), 2024 O.J. (L 2024/1689); Hertig, "Use of AI by Financial Players," 21.

Clear regulatory requirements on data and data governance, documentation and record keeping, openness, human oversight, robustness, correctness, and security are necessary for a high-risk AI system in the finance sector.[555] Training data models and validating and testing datasets are requirements for organizations with high-risk AI systems, such financial services companies, according to Article 10(2) of the AI Act.[556]

Organizations in this category are also required to proactively document important design decisions and analyze data biases that could expose themselves to cyber-security risks.[557] According to Article 14 of the Act, both the creators and the users of high-risk AI systems must periodically employ human oversight over these systems. [558] This procedure serves as a corrective instrument to identify and rectify errors made by AI systems.

AI implemented within the AML/CFT system serves as a control mechanism, so it is important to maintain its explainability and transparency to guarantee regulatory assurance that the risk is effectively handled, especially when regulatory bodies necessitate a thorough comprehension of the system's operations.[559]

The improper application of AI systems in finance may inflict considerable harm on both company and financial ecosysyem. Therefore, it is essential to identify legal challenges, evaluate current regulatory frameworks for financial companies and assess the risks associated with the implementation of AI systems in in AML processes.[560]

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[555] Turksen, Benson, and Adamyk, "Enhancing Integrity of AI," 364.
[556] Article 10(2) of the Artificial Itelligence Act.
[557] Turksen, Benson, and Adamyk, "Enhancing Integrity of AI," 364.
[558] Article 14 of the Artificial Itelligence Act.
[559] Deloitte and UOB, *Money Laundering and Terrorist Financing*, 20; Turksen, Benson, and Adamyk, "Enhancing Integrity of AI," 360.
[560] Turksen, Benson, and Adamyk, "Enhancing Integrity of AI," 363.

With the use of AI in AML processes, problems may arise regarding the supervision of AML processes of financial companies by regulators. All these developments may require regulators such as MASAK, FATF, FinCEN to make AML regulations specific to the use of AI and may impose special reporting and auditing obligations on the use of AI. It will become necessary to make regulations regarding the transparency and explainability of AI by harmonizing auditing standards with the use of AI.[561]

As explained earlier, the decisions taken by AI should be explainable, but since many AI models work like a "black box," it will not be able to fully explain why a transaction is marked as "suspicious." Again, as mentioned before, depending on the data used in training of AI, there may be bias against certain ethnic groups, countries or sectors when evaluating suspicious transactions.[562]

The processes for protecting personal data of customers regarding the data used for AML analysis of AI may conflict with the obligation to store some data for many years in accordance with AML legislation.

Since AI use is not directly regulated in current AML legislation, issues regarding the legal basis of AI-supported risk scoring models and whether a customer being deemed high-risk by AI would constitute legal grounds will come to the fore. New regulations may be necessary in these areas. Questions will also arise such as whether AI can take measures such as blocking customer accounts in line with the findings, or whether human intervention is necessary.

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561 FATF, *Opportunities and Challenges of New Technologies for AML/CFT*, July 2021, 4, https://www.fatf-gafi.org/en/publications/Digitaltransformation/Opportunities-challenges-new-technologies-for-aml-cft.html.

562 Enriques and Zetzsche, "Corporate Technologies," 75; Petrin, "Corporate Management," 1005.

And finally, financial companies may face lawsuits and compensation claims as a result of account closures or transaction blockings due to false positive outputs as a result of AI-supported AML analysis. Due to these problems, new legal standards, liability models, contract models and compensation mechanisms may be required.

International alignment of ethical AI standards is crucial in mitigating barriers for companies operating across countries and safeguarding financial. Additionally, compliance with global data protection, privacy, and cybersecurity requirements is crucial when implementing AI tools.[563]

In order to assess the accuracy and relevance of the AI tools to the identified risks, a solid understanding of the models used by the AI tools is essential for supervisors. According to research conducted by FATF, some respondents stated that most supervisors lack the knowledge and tools to properly monitor emerging technology, and even the most technologically proficient supervisors frequently exhibit a slowness in adapting regulatory approaches.[564]

Fintech companies, which actively utilize AI systems, presents an additional challenge for regulators of financial companies. Traditional finance companies have experienced, necessary divisions to ensure compliance with regulations in a legal sector, and a suitable legal framework has been established for theses companies. On the other hand, fintech start-ups lack the internal resources and expertise, and often fail to fulfill strict AML/CFT regulations.[565] Although it is an essential part of their

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[563] UK Finance and EY, *Trust, Context and Regulation: Achieving More Explainable AI in Financial Services*, September 2020, 25, https://www.ukfinance.org.uk/system/files/Trust%2C%20Context%20and%20Regulation%20-%20Achieving%20more%20explainable%20AI%20in%20financial%20services.pdf.
[564] FATF, *New Technologies for AML/CFT*, 36.
[565] Turksen, Benson, and Adamyk, 362.

operations, these companies do not always prioritize compliance with legal obligations when selecting AI solutions.[566]

8. IMPACTS ON CORPORATE GOVERNANCE

8.1.In General

As stated in the above sections, corporate governance can be defined briefly as an organizational framework that manages a business.[567] The use of AI within a company inevitably impacts this system.

Not just AI, but all new technologies used in companies that affect corporate governance fall under the general category of CorpTech. CorpTech has the potential to streamline processes, but unless significant technological advancements completely replace human judgment in corporate decision-making, it won't render the fundamental functions of corporate boards obsolete.[568]

Initially, AI contributes to the core principles of corporate governance, such as transparency, fairness, accountability, and responsibility, in numerous ways.[569] For instance, Equilar's applications serve as an example.[570] These applications provide pay-for-performance ratings that may be used to establish if an executive is overpaid or underpaid compared to other executives of firms in a comparable industry.[571]

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566 Turksen, Benson, and Adamyk, 362.

567 "What is Corporate Governance?," Chartered Governance Institute UK & Ireland, accessed September 6, 2024, https://www.cgi.org.uk/about-us/policy/what-is-corporate-governance.

568 Enriques and Zetzsche, "Corporate Technologies," 62.

569 Eminoğlu, *Kurumsal Yönetim*, 14.

570 "Compensation Data Solutions for the Modern HR Leader," Equilar, accessed September 2, 2024, https://www.equilar.com/executive-compensation.html.

571 Enriques and Zetzsche, "Corporate Technologies," 67.

In addition to this, AI has a significant impact on other specific areas of corporate governance. The next sections will highlight the topics of board diversity and minority shareholder protection in relation to AI.

8.2. Board Diversity

8.2.1. In General

A new focus in the field of corporate governance is on eliminating homogeneous boards and establishing more diverse boards, gaining attention following corporate scandals like Enron, with the aim of enhancing these boards' efficacy in the decision-making process.[572] Recent researches suggest that boards with greater diversity contribute to higher-quality decision-making and foster better-performing companies.[573]

When seeking board diversity, it is important to consider factors such as age, nationality, education, and gender.[574] Various other elements contribute to the diversity of board composition, including individuals' professional experience, social connections, insider positions, and ethnicity.[575]

The topic of diversity is attracting the attention of investors, too, according to research by Credit Suisse.[576] The same research asserts a correlation between increased value and performance for companies and the diversity of senior management and the boardroom.[577] Increased diversity leads to a

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[572] Petrin, "Corporate Management," 1001.
[573] Eroğlu and Karatepe Kaya, "Impact of Artificial Intelligence," 545; Richard Kersley et al., "Research Institute The CS Gender 3000 in 2021: Broadening the Diversity Discussion,"(Credit Suisse, 2021), 7.
[574] Petrin, "Corporate Management," 1001.
[575] Eroğlu and Karatepe Kaya, "Impact of Artificial Intelligence," 550.
[576] Kersley et al., "Broadening the Diversity Discussion," 7.
[577] Kersley et al., 7.

more inclusive decision-making process and enhances the company's range of perspectives, strategic adaptability, and innovation.[578]

Diversity has become an increasingly important factor for boards of directors as a result of the recognized benefits.[579] Consequently, there is a growing trend toward implementing market and regulatory measures to enhance the presence of women in corporate boardrooms.[580]

Soft law and hard law instruments are implemented to ensure board diversity in order to raise corporate governance standards, improve economic efficiency, and uphold social equity and justice.[581] The board of directors' necessary qualifications might be set by the corporation through its own internal regulations.[582] Nonetheless, companies often abstain from enacting rules that restrict the discretion of shareholders.[583] Therefore, rather than being imposed by the company's internal regulations, external legislators or regulators should establish certain qualifications that director should have in areas like safeguarding minority shareholders and promoting social justice and equality.

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578 Eroğlu and Karatepe Kaya, "Impact of Artificial Intelligence," 549.

579 Eroğlu and Karatepe Kaya, 551.

580 Daniel Greene, Vincent J. Intintoli, and Kathleen M. Kahle, "How Deep is The Labor Market For Female Directors? Evidence from Mandated Director Appointments," *SSRN Electronic Journal* (2021), https://ssrn.com/abstract=3943718.

581 Ruth Mateos de Cabo et al., "Do 'Soft Law' Board Gender Quotas Work? Evidence from a natural Experiment," *European Management Journal* 37, (2019): 611, https://doi.org/10.1016/j.emj.2019.01.004. "A "hard quota" refers to a binding instrument that prevents companies lacking a gender-balanced board from remaining listed on a stock exchange, and compensating the board members or even operating. In contrast, a soft quota is not binding; hence, a firm that lacks a gender-balanced board can continue to operate, and only faces recommendations, warnings, and reports on the causes of noncompliance, or receive tax rebates and/or public subsidies for compliance."; Eroğlu and Karatepe Kaya, "Impact of Artificial Intelligence," 547.

582 Eroğlu and Karatepe Kaya, 548.

583 Eroğlu and Karatepe Kaya, 548.

To this end, many countries implement mandatory quota requirements to promote greater gender diversity on corporate boards. Gender quotas were implemented for the first time in 2003 by Norway.[584] This was a hard law quota. The new EU law on gender balance on corporate boards has been formally adopted by the European Parliament in 2022.[585] It will be necessary for companies to ensure a significant representation of women on their boards of directors by 2026. The target is to have at least 40% female non-executive directors or 33% female directors overall.[586]

Spain was the second country to enact a gender quota with the Spanish Gender Equality Act of 2007.[587] Additionally, this was the European Union's first "soft" quota, and it demanded that all major Spanish companies, both public and private, have at least 40% female and 40% male directors by 2015.[588]

Similar quota legislation, ranging from 30 to 40%, with punishments, has been introduced in France, Italy, Germany, Belgium and the UK to increase female involvement.[589] In Türkiye, according to the Communiqué on Corporate Governance (II-17.1) published by the SPK in 2014, companies traded on Borsa İstanbul must aim to have at least 25% female directors on

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584 Cabo et al., "Soft Law," 614. Norway initially implemented a quota for women on boards at 20%, which later increased to 40% over time.
585 Directive (EU) 2022/2381 of the European Parliament and of the Council of 23 November 2022 on Improving the Gender Balance Among Directors of Listed Companies and Related Measures, 2022 O.J. (L 315), http://data.europa.eu/eli/dir/2022/2381/oj.
586 "The European Women on Boards Directive What It Means and Why It Matters," Institute of Directors, April 3, 2023, https://www.iod.com/resources/inclusion-and-diversity/the-european-women-on-boards-directive-what-it-means-and-why-it-matters/#:~:text=What%20does%20the%20EU%20Directive,executive%20of%20at%20least%2033%25.
587 Cabo et al., "Soft Law," 612.
588 Cabo et al., 611.
589 Cabo et al., 612; Eroğlu and Karatepe Kaya, "Impact of Artificial Intelligence," 553.

their boards of directors.[590] This regulation is not a binding obligation, but companies are expected to set policies to achieve a higher proportion of female directors.

Some regulations have taken a broader approach to diversity, rather than focusing on just female board representation.[591] One example is the UK Corporate Governance Code, which states that socioeconomic class and ethnic origin should also be promoted in board appointments and succession planning.[592]

Nevertheless, some academics contend that the compulsory inclusion of female directors solely to meet the minimum requirement of the board of directors may be detrimental to the organization in situations where female administrators lack the requisite qualifications and expertise.[593]

8.2.2. Impacts of Artificial Intelligence on Board Diversity

Using AI in the corporate compliance processes will also support compliance with diversity regulations. Companies will be able to choose individuals with more varied backgrounds and broader experience, which they would typically ignore.[594] This would allow firms to make better recruiting decisions.

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590 Communiqué on Corporate Governance (II-17.1), https://www.mevzuat.gov.tr/mevzuat?MevzuatNo=19225&MevzuatTur=9&MevzuatTertip=5.

591 Petrin, "Corporate Management," 1002.

592 "UK Corporate Governance Code," Financial Reporting Council, January 22, 2024, https://www.frc.org.uk/library/standards-codes-policy/corporate-governance/uk-corporate-governance-code/.

593 Greene, Intintoli, and Kahle, "Female Directors," 2.

594 Işıl Erel, Léa H Stern, Chenhao Tan, and Michael S Weisbach, "Selecting Directors Using Machine Learning," (ECGI Working Paper Series in Finance, No 605/2019, 2021), https://ssrn.com/abstract=3144080.

Cognitive biases may be eliminated through the use of AI-based solutions, which also make it possible to make better decisions.[595] The decisions made by AI appear to be less prejudiced than those made by humans according to some studies.[596] For instance, AI can be used to select directors and employees. When compared to candidates chosen through conventional methods, through the use of algorithms, the picked individuals tend to have a more varied background, and the number of women who are chosen is significantly higher.[597]

In the next steps, AI can contribute to board diversity by acting as a board of directors as well. The AI directors on boards will possess the capability to assume the responsibilities of numerous directors. Consequently, an AI director will possess a wide array of talents, the capacity to make decisions, and the benefits of incorporating several concepts into a single role. [598] If AI can successfully deliver the anticipated advantages of board diversity, the significance of other elements that contribute to it will diminish.[599]

However, relying solely on algorithmic decisions can still result in prejudice and injustice, as the AI's decisions may still favor one group over another, even after removing human biases.[600] On the other hand, AI may exhibit biased judgments and engage in discriminatory behavior due to the

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595 Armour and Eidenmüller, "Self-driving Corporations?," 108.
596 Sendhil Mullainathan and Jann Spiess, "Machine Learning: An Applied Econometric Approach," Journal of Economic Perspectives 31, no. 2 (2017): 87–106, https://doi.org/10.1257/jep.31.2.87
597 Eroğlu and Karatepe Kaya, "Impact of Artificial Intelligence," 564; Erel, Stern, Tan, and Weisbach, "Selecting Directors," 23.
598 Petrin, "Corporate Management," 970.
599 Eroğlu and Karatepe Kaya, "Impact of Artificial Intelligence," 559.
600 Xinhao Hou, and Yao Tang, "Big Data Empowerment: Digital Transformation and Governance of Minority Shareholders: Evidence from China," 2024, 1, PLoS ONE 19(4): e0302268, https://doi.org/10.1371/journal.pone.0302268; Eroğlu and Kaya, 563.

influence of its creators or the data set it uses.[601] This potential could also have a detrimental effect on the diversity of the board.

Another issue that might arise is that while AI tracks diversity metrics, there might be data privacy or ethical issues because of the collection of candidates' personal data. Additionally, AI could create superficial diversity by solely focusing on quantitative metrics to comply with regulatory standards.

8.3. Minority Shareholder Protection

8.3.1. In General

A minority shareholder is an individual who lacks the ability to control the company's operations by voting, either alone or in collaboration with others.[602]

In order to safeguard the fundamental interests of minority shareholders and restore the disrupted balance among shareholders, it is essential to reduce the pressure of the majority shareholders. To accomplish that, company law grants opportunities such as minority rights to shareholders who hold a minority stake, which typically represents a specific proportion of the total number of shares.[603] The company law systems of various countries regulate such minority rights.[604] There are numerous minority rights in Turkish company law as well, such as those stipulated under

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[601] Enriques and Zetzsche, "Corporate Technologies," 75.
[602] Meltem Kaya, "Discussions Surrounding the Principle of Minority Shareholder Protection," *Ticaret ve Fikri Mülkiyet Hukuku Dergisi* 6, no. 2 (2020): 266.
[603] Bahtiyar, *Ortaklıklar Hukuku*, 259; Akdağ Güney, *Yönetim Kurulu*, 46; Kayıhan, *Şirketler Hukuku*, 252.
[604] Ferna İpekel Kayalı, "A Comparative Study of Takeover Regulation in the UK and France" (PhD Thesis, University of London, 2004), 165-166.

Article 411, Article 438, Article 420, Article 531, Article 437, Article 360, Article 559, and Article 486 of TCC.

Certain conditions regarding the number of shares or votes held, as observed in Türkiye, may be necessary to identify a minority shareholder.[605] To be qualified as a minority shareholder and access the corresponding rights and remedies, a shareholder must hold a minimum of ten percent of the share capital for non-public companies and five percent of the share capital in public companies, as stated in the TCC.[606]

Due to the generally distributing of the companies' profits, it is common to witness conflicts of interest between majority and minority shareholders.[607] As a result, minority shareholders often face a long-term disadvantage in the governance process.[608] Minority shareholders often show limited interest in attending shareholders' meetings and tend to pay less attention to the company's operational results and daily business activities compared to controlling shareholders.[609]

8.3.2. Impacts of Artificial Intelligence on Minority Shareholder Protection

With the help of developing technologies, minority shareholders have easier access to large data resulting from the digital transformation process.[610] This ensures that minority shareholders have access to decision references on an equal basis. Consequently, their willingness to participate in governance and protect their rights and interests increases due to the

[605] Kaya, "Discussions," 266.
[606] TCC No. 6102 Article 411/1.
[607] Pulaşlı, *Şirketler Hukuku Şerhi Cilt II*, 2002-2003.
[608] Hou and Tang, "Big Data Empowerment," 1.
[609] Hou and Tang, 2.
[610] David Yermack, "Corporate Governance and Blockchains," *Review of Finance* 21, no.1 (2017): 24, https://doi.org/10.1093/rof/rfw074.

transparency of company information.[611] Information sharing and communication among shareholders can be enhanced by AI technologies, enabling them to come together more efficiently and effectively exercise their rights.[612]

Active disclosure of company information may also bring more minority investors. Minorities can also use AI to increase their information processing and analytical skills and maximize data-driven behavioral judgments. These advancements will increase minority shareholders' motivation to actively utilize their voting rights at shareholder meetings in order to guarantee that their demands are carried out and that their lawful rights are protected.[613]

Hence, although digital transformation helps to minimize minority shareholders' disadvantage in reaching the information, additionally, it increases the impact of exit threats of minority shareholders through social media and networks.[614] So, through the utilization of exit threats, digital transformation will augment the degree of minority shareholder engagement in corporate governance.

Overall, AI's enhancing strong governance with improved transparency and accountability will help minority shareholders to track company activities. Also, the fairness and avoidance of bias in the processes will also attract minority shareholders. Additionally, enhanced risk management will increase protection of the company's reputation and financial stability, which also protects minority shareholders.

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611 Hou and Tang, "Big Data Empowerment," 5; Yermack, "Corporate Governance and Blockchains," 21.

612 Bora Çınar, "Yapay Zekâ," 71.

613 Hou and Tang, "Big Data Empowerment," 5.

614 Hou and Tang, 5.

However, AI is not independent from its designer or programmer. Minority shareholders also face the danger of having their rights and interests compromised by the programmer who is working with the majority owners through AI.[615] Investor confidence and the company's reputation might be impacted even by an assumption that the AI director is being manipulated.

[615] Karatepe Kaya, "Yapay Zeka," 89.

CONCLUSION

Compliance is critical for companies to not be subject to regulatory sanctions. Noncompliance can have financial consequences or even lead to the closure of the company. In this regard, it is also possible to evaluate compliance as a preventive legal concept.

However, the concept of compliance evolved not only for the benefit of individual companies but also for the benefit of society as a whole. Companies typically prioritize their own interests over the welfare of society. It is a hard-learned lesson through big financial crises, generally caused by the noncompliance activities of huge companies.

Following the financial crises, particularly the global financial crisis of 2008, companies began to focus on the development of regulatory changes. These laws are anticipated to enhance market transparency and hence diminish the probability of future financial crises.

The concept of compliance is developing within the framework of companies, and more specifically, joint stock companies, in both economic and legal contexts. Additionally, it bears a close connection to corporate governance. It has become a field of study within the context of corporate law and is defined as "corporate compliance". Corporate compliance has been comprehensively addressed, and its importance and effects on companies have been explained in the study.

The literature evaluates directors' decisions about providing compliance in the company within the framework of the business judgment rule. Systems for managing compliance systematically cover both internal and external threats through established procedures and routines. The programs aim to prevent misconduct, detect it when it occurs, and align corporate activities with regulation. Whistleblowing, which is mentioned in the thesis in detail, is one of the tools that is used to detect misconduct and is typically more effective than other detecting methods and processes. Some regulations also include provisions regarding the establishment of whistleblowing mechanisms in companies and the encouragement of whistleblowers.

Compliance has an exterior and an interior aspect in companies. While the external aspect of compliance is the legal entity's adherence to regulations, the internal aspect is the liability resulting from noncompliance within the company. Some legislation includes provisions on compliance and clearly outlines the compliance duty.

Due to the existing regulations in the USA, almost every company has a compliance system, and it is accepted that the board of directors' compliance duty falls under the duty of oversight, whereas the English courts have not explicitly provided for a compliance duty for the board of directors.

Although there is no direct regulation on this subject in Türkiye, various codes contain provisions regarding compliance. It is accepted that the board of directors of a joint-stock company has a compliance duty under the TCC. The compliance duty of directors is evaluated within the scope of the duty of care and the duty of oversight. Therefore, the board of directors must establish and implement the company's compliance system.

According to TCC Article 369/1, directors should perform their duties as expected from a prudent director. In the rationale for the Article, it is stated that a prudent manager can make a business judgment in accordance with corporate governance principles, and the director will not be liable because of the risks if appropriate research is conducted and adequate information is received. This duty also includes complying with the laws and ensuring that the company's activities and transactions align with the law.

One of the main responsibilities of directors is the general oversight of the company, which also includes reviewing management's activity and operations. Under the TCC Article 375/1-e, high-level oversight is stipulated. The Article's rationale defines the duty of high-level oversight as the establishment of a necessary oversight system.

In accordance with the provisions of Article 553 of TCC, the board of directors may be held accountable for the harm that is caused by failing to fulfill their compliance duty. At this point, whether the board has delegated its compliance duties will also be considered in the liability evaluation.

The impact of new technologies, specifically AI, on companies is substantial. Currently in many sectors, especially in finance, AI is used in various areas, including compliance. Industry leaders have already made AI an essential part of their organizations. The main advantages of using AI are cost and time efficiency, increased production, risk reduction, and enhanced decision-making certainty.

ML, particularly the NLP technique, has significantly benefited the compliance area and yielded numerous solutions. For instance, with ML, it is possible to automate complex, non-routine tasks, like recognizing human handwriting. Real-time monitoring, developing alert systems, tracking changes in legislation, risk scoring, and document analysis are some other tasks AI can fulfill in the compliance area. IBM's Watson Compare & Comply is a well-known solution that uses natural language processing (NLP) techniques to extract data from documents for risk classification, detection, and management.

Due to being subject to overregulations, compliance technologies are widely used in the finance sector. In this context, AI solutions are used in companies in the financial sector, particularly in the areas of cash flow, credit scoring, and fraud detection. Money laundering, financing of terrorism and know-your-customer processes, which are given importance by regulatory bodies and regulated specifically because of their potential to have global consequences by affecting the entire economic system, are discussed.

There are also some challenges while developing such technologies. These challenges can include poor data quality, inaccuracy, insufficient sample size, or bias. Companies must tackle these challenges from the initiation of the implementation of such technologies and continue to monitor them throughout their use. Some of them may be easily resolved, while others are not likely to be easily handled in the near future.

Moreover, as with any company operation, employing AI for compliance may not always be the optimal decision. It is important to assess the necessity of a business case, address the issue, and propose potential solutions before deploying them.

Inevitably there will be other consequences of using AI in the company. It is certain that the use of AI in the company will affect certain concepts and create new legal risks, which in turn will lead to the evolution of legal concepts and structures. Of course, they will all vary from legislation to legislation.

In light of all these evaluations, the effects of AI on legal matters have also been assessed within the scope of the study. The first topic is evaluating legislation to use AI in companies. AI can be used in different areas in companies based on its autonomy level. Automation of routine administrative duties is certainly within AI's capabilities. Despite the existence of some AI manager examples, the current legal conditions limit AI's use in companies to assistant or advisory support roles. Compliance tools in the market can be categorized as the same. They serve as a guide and offer suggestions.

Apart from that, using AI tools for compliance will have effects on directors’s duties. As it is evaluated in the thesis, whether using AI or not will have distinct consequences on directors’ duty of care. This is a decision that directors make in the scope of business judgment.

Mandating directors to utilize AI is unfeasible due to the necessary technological expertise and associated expenses. It is essential to articulate the rationale for not employing AI and demonstrate that the decisions made without it are reasonable and of adequate quality. Upon the decision to use AI, the selection of suitable system service providers, monitoring, and assurance that all AI operations comply with legal regulations are within the duty of care. Ultimately, even with the availability of AI assistance, directors should conduct thorough research and analysis on the pertinent issue and articulate their own opinions.

Furthermore, in the scope of their duty of oversight, directors must monitor and manage AI that pertain to compliance responsibilities. When using AI for compliance activities, directors must assure system stability, prevent errors, and make sure AI's judgments are in line with regulations. Additionally, directors will need to take a more active role in data governance issues in the future, which will lead to an increase in oversight duty.

Evaluations were made by focusing on the situations where liability may arise from the use of AI in compliance processes; additionally, directors’ liability in the decision to whether to use of AI for compliance is evaluated in the thesis. By incorporating AI into compliance procedures, directors can demonstrate that they have fulfilled their compliance duty and, in certain cases, even erase their liability. Nevertheless, directors' liability resulting from a lack of AI implementation does not appear to be feasible at this time because companies cannot be compelled to employ AI in any aspect of their activity, including compliance.

Afterwards, the liability possibilities regarding the illegalities that may arise due to AI solutions were evaluated. Since AI does not have a legal personality, the board members will continue to be responsible for the results of the decisions they will make. At this point, it would be possible to evaluate AI as a product, and the liability of the producer and seller may occur.

Additionally, AI will affect the areas related to data protection, AML, minority shareholder rights, and board diversity. The utilization of AI technologies for compliance may give rise to data protection concerns, including bias, explainability, and data reduction, potentially resulting in legal violations due to insufficient attention from companies. AI can also support compliance with diversity regulations. Nonetheless, dependence only on algorithmic determinations might perpetuate bias and inequity, despite the elimination of human biases. Conversely, AI may demonstrate biased judgments and partake in discriminatory conduct as a result of the influence of its developers or the dataset it employs. The enhancement of robust governance through AI with improved transparency and accountability will further appeal to minority shareholders. Furthermore, improved risk management will lead to the protection of minority shareholders.

This thesis aimed to reflect the present state of companies in regards to compliance and the use of AI for compliance, as well as to give legal consequences of this integration. The potential for AI to replace humans in non-administrative judgment roles remains questionable. Initially, AI was employed to assist human directors; however, it is anticipated that it would ultimately supplant humans, resulting in AI-driven management. As briefly mentioned in the thesis and anticipated in the literature, the potential for widespread AI utilization in diverse corporate positions necessitates the evaluation of further corporate law-related challenges.

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