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ANALYSIS OF ARTIFICIAL INTELLIGENCE AND DATA ACT BASED ON ETHICAL FRAMEWORKS

Sun Gyoo Kang*

Abstract: Canada has recently introduced the Digital Charter Implementation Act of 2022. Both at the federal level as well as at the provincial level, different governments are trying to move forward with emerging technology by amending and implementing laws and regulations to put a safety net against various emerging risks, but at the same time, promote the growth of the innovative industry in Canada. Indeed, as one of the first countries, Canada introduced legislation regarding artificial intelligence (Artificial Intelligence and Data Act), and the goal of this paper is to check if the new legislation would encompass the basic artificial intelligence ethical frameworks such as privacy, accountability, transparency/explainability, fairness, and safety & security, which were recommended in three (3) different ethical declarations on artificial intelligence, among many others. The Artificial Intelligence and Data Act contains important sections incorporating accountability, transparency/explainability, fairness, and safety & security. Considering a risk-based approach targets high-impact systems and requires risk management and monitoring against the risk of harm and biased output. It also requires persons responsible for high-impact systems to communicate all the necessary information publicly and to be audited in case of concern with its artificial intelligence systems. The new legislation imposes administrative monetary penalties and offenses similar to the proposed regulations in the EU. As for privacy, similar to the EU, it is outside of the new law's scope, but another law covers the topic independently already Nevertheless, the Artificial Intelligence and Data Act also has some pitfalls. It lacks clarity and specific requirements found in the law of the EU. Furthermore, the scope is an issue as it only covers private sector actors, and there is doubt about the real independence and neutrality of the commissioner.

Keywords: Artificial Intelligence; Artificial Intelligence and Data Act; Risk-based Approach; Canada; EU

* Law and Ethics in Tech, Canada.

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INTRODUCTION

On June 16, 2022, the Federal Government of Canada proposed Bill C-27[1], which made the news for its newly amended privacy law, the Consumer Privacy Protection Act ("CPPA"). In addition to the newly amended federal privacy law, the Artificial Intelligence and Data Act ("AIDA") was introduced and has created a wave of questions among the artificial intelligence industry. One of the hot questions is on what exactly is a "*high-impact system*"[2]. The answers to many of the questions asked by the designers, data scientists and engineers will likely be included in the regulations that will be subsequently introduced and without the regulations, it is hard to evaluate and compare with other jurisdictions (i.e.: EU's Artificial Intelligence Act).

As a matter of fact, this paper does not aim to compare this new legislation with other proposed legislations in the EU or the United States. Also, the regulations that will support the proposed legislation are yet to come out so this paper will try to analyse just with the proposed law itself.

Nonetheless, the infinite possibility of what an artificial intelligence system can do is not easily measurable. As advocated in the Asilomar Principle[3]human beings cannot confirm the upper limits of what an artificial intelligence can do. And we know that law has its own limit as most of the time, the laws and regulations would rather react and will not cover all the aspects in our life. For that reason, ethics then naturally becomes an important aspect for artificial intelligence.

In order to perform a thorough analysis, three (3) ethical principle guidelines were analyzed: Montréal Declaration Responsible AI[4], The Toronto Declaration: Protecting the right to equality and non-discrimination in machine learning systems[5] and Asilomar AI Principle[6]. Then the five (5) main ethical frameworks were chosen: 1) Privacy, 2) Fairness, 3) Accountability, 4) Transparency/ Explainability and 5) Safety and Security for analysis. At the end, the main articles of the AIDA will be analyzed based on these ethical frameworks to see if AIDA is commensurate with the artificial intelligence ethical framework principles.

---

[1] Bill C-27, *An Act to enact the Consumer Privacy Protection Act, the Personal Information and Data Protection Tribunal Act and the Artificial Intelligence and Data Act and to make consequential and related amendments to other Acts (Canada)*, 1st session, 44th Parliament, 2022 (Consumer Privacy Protection Act)).

[2] Bill C-27, *An Act to enact the Consumer Privacy Protection Act, the Personal Information and Data Protection Tribunal Act and the Artificial Intelligence and Data Act and to make consequential and related amendments to other Acts (Canada)*, 1st session, 44th Parliament, 2022, section 5 (1) of the Artificial Intelligence and Data Act (Canada) (Artificial Intelligence and Data Act).

[3] Principle 19) Capability Caution of the ASILOMAR AI PRINCIPLES <https://futureoflife.org/2017/08/11/ai-principles/> accessed on 8 August 2022 (Asilomar AI Principles).

[4] Montréal Declaration Responsible AI <www.montrealdeclaration-responsibleai.com/_files/ugd/ebc3a3_506ea08298cd4f8196635545a16b071d.pdf> accessed on 8 August 2022.

[5]The Toronto Declaration: Protecting the right to equality and non-discrimination in machine learning systems <www.torontodeclaration.org/wp-content/uploads/2019/12/Toronto_Declaration_English.pdf> accessed on 8 August 2022 (Toront Declaration).

[6] Asilomar AI Princples <https://futureoflife.org/2017/08/11/ai-principles> accessed on 8 August 2022.

I. ARTIFICIAL INTELLIGENCE AND DATA ACT

A. Scope

Unlike EU's Artificial Intelligence Act ("AIA")[7], AIDA only applies to private sectors and does not apply to the public sector. It would be interesting to know the exact reason why the public sector is out of scope but if we compare with the privacy legislation at the federal level in Canada, it might be logical that the legislation related to artificial intelligence also follows the same structure. In the federal privacy legislation, there is the PIPEDA[8] that is applicable to the private sector and Privacy Act[9] that is applicable to the public sector. Another guess is that the public sector already has the Directive on Automated Decision-Making ("Directive") so the federal government might have thought that the Directive was enough for the moment. Nonetheless, there are some concerns[10] with the narrow scope of the AIDA, and the fact that the public sector is not in scope could be a major issue. Also, the Directive has its own issues as it does not cover areas impacting federal employees including the hiring process[11].

In the United States, after a failed attempt in 2019 to introduce a bill on automated-decision making, the Algorithmic Accountability Act of 2022[12] ("AAA") was reintroduced in 2022 with some amendments from the 2019 version. Similar to AIDA, AAA, as the current form, would be applicable only to private sector actors as well. Indeed, AAA describes them as covered entities[13] and captures two types of businesses: 1) big firms deploying augmented critical decision processes ("ACDP")[14] and 2) medium size firms deploying automated decision-making systems ("ADS") which will be used by the big firms[15].

B. Definition

1. Artificial Intelligence System

As of today, there is no single set of definition of what an artificial intelligence system is but section 2 of the AIDA tries to define it as follows:

> *artificial intelligence system means a technological system that, autonomously or partly autonomously, processes data related to human activities through the use of a genetic algorithm, a neural network, machine learning or another*

---

[7] Commission, '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 (Artificial Intelligence Act).
[8] *Personal Information Protection and Electronic Documents Act,* S.C. 2000, c. 5.
[9] *Privacy Act*, R.S.C., 1985, c. P-21.
[10] 'Roundtable on the Artificial Intelligence and Data Act' (Centre for Media, Technology & Democracy, July 12 2022), <https://youtu.be/Ll46lPnfvZU> accessed on 8 August 2022.
[11] Omar Bitar, Benoit Deshaies & Dawn Hall, '3rd Review of the Treasury Board Directive on Automated Decision-Making' (2022), <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4087546> access on 8 august 2022.
[12] H.R.6580 - 117th (2021-2022): Congress Algorithmic Accountability Act of 2022, (2022, February 3). https://www.congress.gov/bill/117th-congress/house-bill/6580 (Algorithmic Accountability Act).
[13] Artificial Intelligence Act, Section 2(7)(a).
[14] Artificial Intelligence Act, Section 2(7)(a)(i).
[15] Artificial Intelligence Act, Section 2(7)(a)(ii).

technique in order to generate content or make decisions, recommendations or predictions. (système d'intelligence artificielle)

So it must basically be an autonomous or partly autonomous system which processes data and the data must be related to human activities.To add, the definition provides examples of techniques such as genetic algorithm, a neural network, machine learning and any other technique to generate content or make decisions, recommendations or predictions. Obviously, the last part is to be future-proof. Furthermore, *human activities* are not defined in AIDA.

The EU's AIA's definition of the artificial intelligence system is as follows:

'artificial intelligence system' (AI system) means software that is developed with one or more of the techniques and approaches listed in Annex I and can, for a given set of human-defined objectives, generate outputs such as content, predictions, recommendations, or decisions influencing the environments they interact with[16]*;*

The EU's AIA definition is more specific by providing a list of technologies in its Annex I, which is amendable as well, and below are what EU considers as artificial intelligence techniques and approaches:

(a)Machine learning approaches, including supervised, unsupervised and reinforcement learning, using a wide variety of methods including deep learning;

(b)Logic- and knowledge-based approaches, including knowledge representation, inductive (logic) programming, knowledge bases, inference and deductive engines, (symbolic) reasoning and expert systems;

(c)Statistical approaches, Bayesian estimation, search and optimization methods[17]*.*

In the United States, Section 2 (2) of AAA describes automated decision system as below:

AUTOMATED DECISION SYSTEM.—The term "automated decision system" means any system, software, or process (including one derived from machine learning, statistics, or other data processing or artificial intelligence techniques and excluding passive computing infrastructure) that uses computation, the result of which serves as a basis for a decision or judgment.

This definition seems to cover more than the AIDA and AAA as it is broader than just the artificial intelligence systems.

2. Biased Output

Section 5 (1) of the AIDA's definition of a biased output is as follows:

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[16] Artificial Intelligence Act, Article 3.
[17] Artificial Intelligence Act, Appendix I.

> *biased output means content that is generated, or a decision, recommendation or prediction that is made, by an artificial intelligence system and that adversely differentiates, directly or indirectly and without justification, in relation to an individual on one or more of the prohibited grounds of discrimination set out in section 3 of the Canadian Human Rights Act, or on a combination of such prohibited grounds. It does not include content, or a decision, recommendation or prediction, the purpose and effect of which are to prevent disadvantages that are likely to be suffered by, or to eliminate or reduce disadvantages that are suffered by, any group of individuals when those disadvantages would be based on or related to the prohibited grounds. (résultat biaisé)*

AIDA seems to focus on the result or output coming from the artificial intelligence system. This definition specifically refers to the discrimination set out in section 3 of Canadian Human Rights Act ("CHRA")[18]. It includes "*race, national or ethnic origin, colour, religion, age, sex, sexual orientation, gender identity or expression, marital status, family status, genetic characteristics, disability and conviction for an offence for which a pardon has been granted or in respect of which a record suspension has been ordered*". Furthermore, there might be a part in the regulation or a stand-alone regulation that may define a biased output[19].

On the other hand, the definition seems to not include "biased output" from artificial intelligence systems that are used to prevent discrimination and harm. This may be a concern as recently FTC published a report noting that even artificial intelligence used to counter bias and discrimination may bring additional harms such as:

> *Inherent design flaws and inaccuracy: AI detection tools are blunt instruments with built in imprecision and inaccuracy. Their detection capabilities regarding online harms are significantly limited by inherent flaws in their design such as unrepresentative datasets, faulty classifications, failure to identify new phenomena, and lack of context and meaning.*
>
> *Bias and discrimination: In addition to inherent design flaws, AI tools can reflect biases of its developers that lead to faulty and potentially illegal outcomes. The report provides analysis as to why AI tools produce unfair or biased results. It also includes examples of instances in which AI tools resulted in discrimination against protected classes of people or overblocked content in ways that can serve to reduce freedom of expression.*
>
> *Commercial surveillance incentives: AI tools can incentivize and enable invasive commercial surveillance and data extraction practices because these technologies require vast amounts of data to be developed, trained, and used. Moreover, improving AI tools accuracy and performance can lead to more invasive forms of surveillance[20].*

---

[18] Canadian Human Rights Act, R.S.C., 1985, c. H-6.
[19] Artificial Intelligence and Data Act, Section 36 (a).
[20] Federal Trade Commission, 'Combatting Online Harms Through Innovation' (2022, June 16), <www.ftc.gov/reports/combatting-online-harms-through-innovation> access on August 8 2022.

3. Harm

Section 5(1) of AIDA also defines what harm means exactly in the context of an artificial intelligence system.

Harm means

(a) physical or psychological harm to an individual;

(b) damage to an individual's property; or

(c) economic loss to an individual. (préjudice)

The goal of AIDA basically is to make responsible persons of high-impact artificial intelligence systems have a risk management program. Along with bias, no harm should be produced from artificial intelligence systems and if produced, there should be controls in place to mitigate the inherent risk.

4. High-Impact System

The focus of AIDA is on high-impact systems. Sections 7 and 8 of AIDA says:

"7 *A person who is responsible for an artificial intelligence system must, in accordance with the regulations, assess whether it is a high-impact system.*"

"8 *A person who is responsible for a high-impact system must, in accordance with the regulations, establish measures to identify, assess and mitigate the risks of harm or biased output that could result from the use of the system.*"

Basically, AIDA lets the person perform the assessment to see if its artificial intelligence system is a high-impact system or not. Should it be considered to be a high-impact system, it has the obligation to mitigate the risks. However, AIDA does not really provide a definition. Section 5 (1) of AIDA proposes as a definition: "*high-impact system means an artificial intelligence system that meets the criteria for a high-impact system that are established in regulations*." Until the regulations are published, the industry will not know what exactly is a high-impact system.

Nevertheless, deductions could be made from different sources such as the Directive, AIA and the AAA. The former applies to Canadian governments wishing to utilize automated decision-making system, which by definition is broader[21] than the definition of an artificial intelligence system[22] and the second one applies to private and public organizations in regards to artificial intelligence system[23]. The Directive proposes four (4) impact assessment levels:

- *Level I: little to no impact on*
    - *the rights of individuals or communities,*

[21] Government of Canada, Appendix A of the Directive on Automated Decision-Making (2021, April 1) </www.tbs-sct.canada.ca/pol/doc-eng.aspx?id=32592#appA>.
[22] Artificial Intelligence and Data Act, section 2.
[23] Artificial Intelligence Act, Article 3 (1).

- *the health or well-being of individuals or communities,*
- *the economic interests of individuals, entities, or communities,*
- *the ongoing sustainability of an ecosystem.*

- *Level II: Moderate impact;*
  - *the rights of individuals or communities,*
  - *the health or well-being of individuals or communities,*
  - *the economic interests of individuals, entities, or communities,*
  - *the ongoing sustainability of an ecosystem.*
- *Level III: High impact; and*
  - *the rights of individuals or communities,*
  - *the health or well-being of individuals or communities,*
  - *the economic interests of individuals, entities, or communities,*
  - *the ongoing sustainability of an ecosystem.*
- *Level IV: Very high impact.*
  - *the rights of individuals or communities,*
  - *the health or well-being of individuals or communities,*
  - *the economic interests of individuals, entities, or communities,*
  - *the ongoing sustainability of an ecosystem.*

In order to check the impact level of an automated decision-making system, one must go through the Algorithmic Impact Assessment tool[24], which consists of 48 questions divided into six (6) risk areas: 1) project, 2) system, 3) algorithm, 4) decision, 5) Impact and 6) data and 33 questions of mitigation areas, which can reduce the residual score. At the end, depending on the final score, the impact level is determined.

As for the AIA, it proposes 4 different types of artificial intelligence systems: (i) an unacceptable risk, (ii) a high risk, and (iii) low or minimal risk. Under the AIA,

[24] Government of Canada, 'Algorithmic Impact Assessment tool', <www.canada.ca/en/government/system/digital-government/digital-government-innovations/responsible-use-ai/algorithmic-impact-assessment.html#toc2-1> accessed on August 8 2022.

the artificial intelligence in the following area are considered to be high risk artificial intelligence system[25]:

- *critical infrastructures (e.g. transport), that could put the life and health of citizens at risk;*
- *educational or vocational training, that may determine the access to education and professional course of someone's life (e.g. scoring of exams);*
- *safety components of products (e.g. AI application in robot-assisted surgery);*
- *employment, management of workers and access to self-employment (e.g. CV-sorting software for recruitment procedures);*
- *essential private and public services (e.g. credit scoring denying citizens opportunity to obtain a loan);*
- *law enforcement that may interfere with people's fundamental rights (e.g. evaluation of the reliability of evidence);*
- *migration, asylum and border control management (e.g. verification of authenticity of travel documents);*
- *administration of justice and democratic processes (e.g. applying the law to a concrete set of facts).*

Lastly, as for AAA, the previous version of it had a specific definition of what a high-risk automated decision system was[26]. However, in the 2022 version, it refers rather to an augmented critical decision process which is an automated decision system that makes critical decisions. The definition of what a critical decision is:

> *The term "critical decision" means a decision or judgment that has any legal, material, or similarly significant effect on a consumer's life relating to access to or the cost, terms, or availability of—*
>
> *(A) education and vocational training, including assessment, accreditation, or certification;*
>
> *(B) employment, workers management, or self-employment;*
>
> *(C) essential utilities, such as electricity, heat, water, internet or telecommunications access, or transportation;*
>
> *(D) family planning, including adoption services or reproductive services;*

[25] European Commission, 'Regulatory framework proposal on artificial intelligence', (Shaping Europe's digital future 2022, September 29), <https://digital-strategy.ec.europa.eu/en/policies/regulatory-framework-ai#:~:text=AI%20systems%20identified%20as%20high,e.g.%20scoring%20of%20exams)%3B> accessed on September 30 2022.

[26] Algorithmic Accountability Act, Section 2 (7).

(E) financial services, including any financial service provided by a mortgage company, mortgage broker, or creditor;

(F) healthcare, including mental healthcare, dental, or vision;

(G) housing or lodging, including any rental or short-term housing or lodging;

(H) legal services, including private arbitration or mediation; or

(I) any other service, program, or opportunity decisions about which have a comparably legal, material, or similarly significant effect on a consumer's life as determined by the Commission through rulemaking[27].

So, using both the Directive, AIA and AAA as reference, one could assume that similar criteria would probably be used for AIDA but only the regulations would confirm it.

II. WHY ETHICAL GUIDELINES MATTERS

Laws and regulations are the rules covering different human activities and there are usually real consequences when one fails to comply with it. Yet, it takes time to adopt a bill of law and amending an existing one may also take several years. Nevertheless, artificial intelligence is an emerging technology just like quantum computing, metaverse, blockchain and cryptocurrency. Law is something that is often reactive and cannot cover all aspects of human activities.

However, numerous ethical guidelines can chaperone an artificial intelligence system from its inception, design, plan, implementation, test, activation and maintenance. Ethical guidelines are more flexible than law and can catch up with the fast emerging industry such as artificial intelligence. In addition, existing laws or future laws on artificial intelligence must be based on ethical frameworks in order to support the ethical principles. That is why ethical guidelines matter a lot in artificial intelligence and so three (3) of the major ethical guiding principles will be briefly analyzed to have a better understanding of what are the ethical issues around artificial intelligence systems.

A. Ethical Guiding Principles

1. Montréal Declaration Responsible AI

Declared on December 8th 2018 by different university scholars, citizens, artificial intelligence experts and professionals, Montréal Declaration Responsible AI ("MDRAI") is an important piece of ethical guideline and principles for the artificial intelligence industry. The objectives of MDRAI are:

1. Develop an ethical framework for the development and deployment of AI;

2. Guide the digital transition so everyone benefits from this technological revolution;

---

[27] Algorithmic Accountability Act, Section 2 (8).

3. Open a national and international forum for discussion to collectively achieve equitable, inclusive, and ecologically sustainable AI development[28].

MDRAI includes ten (10) principles: 1) Well-being, 2) respect for autonomy, 3) protection of privacy and intimacy, 4) solidarity, 5) democratic participation, 6) equity, 7) diversity inclusion, 8) prudence, 9) responsibility and 10) sustainable development.

a. Well-being

MDRAI's first principle promotes the well-being of not only human beings but of all sentient beings. This principle encourages artificial intelligence to be beneficial to human beings and sentient beings and be non-malient to sentient beings. Examples of well-being are the beneficial effects to the economy, health, safety, environment, labor, and etc. Artificial intelligence must be used to support human beings to be healthier by providing better cure to illness[29] and prevention at an earlier phase[30]. Artificial intelligence must be used to support the employees so that individuals are not negatively affected by the system[31]. Furthermore, artificial intelligence should be deployed to support sustainable development[32].

Artificial intelligence must improve the life of individuals and further all sentient beings. Indeed, animals are more and more recognized in different jurisdiction such as the United Kingdom where Animal Welfare (Sentience) Act 2022[33] was enacted to acknowledge animals such as a dog as.

b. Respect for Autonomy

MDRAI's second principle is the respect for autonomy. Autonomy of human beings means that an individual can make independent decisions for its own without any pressure or coercion. With biases such as automatisation bias, the tendency for humans to trust automated made-decisions, and complacency bias, the tendency for humans to not supervise automated made-decisions, it is very important for artificial

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[28] Montreal Declaration Responsible AI, 'montréal declaration for a responsible development of artificial intelligence 2018' (2018), </www.montrealdeclaration-responsibleai.com/_files/ugd/ebc3a3_506ea08298cd4f8196635545a16b071d.pdf> accessed on August 8 2022.

[29] Aniek F. Markus, Jan A. Kors & Peter R.Rijnbeek, 'The role of explainability in creating trustworthy artificial intelligence for health care: A comprehensive survey of the terminology, design choices, and evaluation strategies' (2020) 113 Journal of Biomedical Informatics <www.sciencedirect.com/science/article/pii/S1532046420302835> accessed on August 8, 2022.

[30] Jonathan P. Rowe & James C. Lester, 'Artificial Intelligence for Personalized Preventive Adolescent Healthcare' (2020), 67/2 Journal of Adolescent Health <www.sciencedirect.com/science/article/pii/S1054139X20300951> accessed on August 8, 2022.

[31] Marguerita Lane & Anne Saint-Martin, 'The impact of Artificial Intelligence on the labour market' (2021) <www.oecd-ilibrary.org/social-issues-migration-health/the-impact-of-artificial-intelligence-on-the-labour-market_7c895724-en> accessed on August 8, 2022.

[32]Tanveer Ahmad, Dongdong Zhang, Chao Huang, Hongcai Zhang, Ningyi Dai, Yonghua Song, Huanxin Chen, 'Artificial intelligence in sustainable energy industry: Status Quo, challenges and opportunities' (2021) 289 Journal of Cleaner Production <www.sciencedirect.com/science/article/abs/pii/S0959652621000548> accessed on August 8, 2022.

[33] Animal Welfare (Sentience) Act 2022.

intelligence to respect the autonomy of individuals. As an example, pilots may trust the aircraft machines too much, which may cause accidents time to time[34].

c. Protection of Privacy and Intimacy

The third principle is about privacy and intimacy. This principle will be further discussed below but many jurisdictions have already decided to legislate around the use of personal information already. EU's GDPR[35], Canada's PIPEDA[36], California's CCPA[37], Brazil's LGPD[38] and South Africa's POPIA[39] have been enacted and regulated the use of personal information. Indirectly, artificial intelligence systems are affected as personal information must be collected, used and disclosed or retained.

d. Solidarity

The fourth principle of MDRAI is that artificial intelligence must support the collaborative relationship between individuals. This principle emphasizes the importance of human relationships between people and generation. Furthermore, it puts significance in the fact that artificial intelligence should not replace human beings where it is expected to have quality human relationships. The latter could target, as an example, where general artificial intelligence could be used as part of a romance/date application[40].

e. Democratic Participation

The fifth principle covers a variety of ethical frameworks: transparency, explainability, accountability, Intelligibility, justifiability and accessibility. This paper will cover more in detail the principles of transparency, explainability and accountability later in another section but here are the definitions for each of the three (3) ethical principles.

- *Transparency*: Artificial intelligence is known to be non-transparent. The "black box" issue of complex models is the fact that deep learning models self-learn and even when human-in-the-loop control is put in place, it might be difficult for a professional to understand the result and explain the logic to the users[41].

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[34] Alexander Freund, 'Boeing crash: Can machines make better decisions than people?' (2019) DW <www.dw.com/en/boeing-crash-can-machines-make-better-decisions-than-people/a-47920904> accessed on August 8 2022.

[35] Council Regulation (EC) 2016/679 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) OJ L119/1 (GDPR).

[36] *Personal Information Protection and Electronic Documents Act,* S.C. 2000, c. 5 (PIPEDA).

[37] Section 3, Title 1.81. 5 of the CCPA, added to Part 4 of Division 3 of the California Civil Code. [3] § 1798.185(a)(1)-(2), (4), (7). [4] § 1798.140(c).

[38] Lei Geral de Proteção de Dados Pessoais (LGPD), Lei n° 13.709/2018.

[39] South Africa. 2013. Protection of personal information act 4 of 2013. Available at < www.gov.za/sites/default/files/gcis_document/201409/3706726-11act4of2013protectionofpersonalinforcorrect.pdf> accessed on August 8 2022.

[40] Adrian David Cheok & Emma Yann Zhang, *Human–Robot Intimate Relationships*, Springer 2019.

[41] Yavar Bathaee, 'The artificial intelligence black box and the failure of intent and causation' (2018) 31 Harvard Journal of Law & Technology. <https://jolt.law.harvard.edu/assets/articlePDFs/v31/The-Artificial-Intelligence-Black-Box-and-the-Failure-of-Intent-and-Causation-Yavar-Ba thaee.pdf> accessed on August 8, 2022.

Transparency is the general principle and may include explainability, interpretability and auditability.

- *Explainability*: Explainability is the principle which a designer of the artificial intelligence system can explain the output, input and the model to a user[42].

- *Accountability*: Accountability is the principle where designers or developers should be held accountable for the artificial intelligence system. The OECD principle 1.5 says "*AI actors should be accountable for the proper functioning of AI systems and for the respect of the above principles, based on their roles, the context, and consistent with the state of art.*"[43]

f. Equity

The sixth principle of MDRAI promotes a just and equitable society contributed by the development and use of artificial intelligence systems. This principle describes the fact that artificial intelligence must not be designed to reproduce any types of discrimination. To add, it should be noted that equity differs from equality[44] and MDRAI promotes equity and not equality. More will be discussed later under the "fairness" ethical framework.

g. Diversity inclusion

The seventh MDRAI principle is about diversity inclusion. Nowadays, it is not a mythic statement anymore that diversity is actually a strength to society. McKinsey's research on diversity showed that:

- *"Companies in the top quartile for racial and ethnic diversity are 35 percent more likely to have financial returns above their respective national industry medians" and;*

- *"Companies in the top quartile for gender diversity are 15 percent more likely to have financial returns above their respective national industry medians*"[45].

Thus, the development of artificial intelligence must make sure to promote social and cultural diversity and avoid homogenization of the society.

h. Prudence

The next principle of MDRAI promotes the development of artificial intelligence in such a way to avoid adverse consequences. Here, the focus is on the

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[42]GiuliaVilone & LucaLongo, 'Notions of explainability and evaluation approaches for explainable artificial intelligence' (2021)76 Information Fusion <www.sciencedirect.com/science/article/pii/S1566253521001093> accessed on August 8, 2022.

[43] OECD.AI, OECD's AI Principles Accountability (Principles 1.5) <https://oecd.ai/en/dashboards/ai-principles/P9> accessed on August 8, 2022.

[44] George Washington University School of Public Health, 'Equity vs. Equality: What's the Difference?' (2020), <https://onlinepublichealth.gwu.edu/resources/equity-vs-equalit/> accessed on August 8, 2022.

[45] Vivian Hunt, Dennis Layton, and Sara Prince, 'Why diversity matters' (2015) (*McKinsey & Company 2 February 2015)* <www.mckinsey.com/business-functions/people-and-organizational-performance/ou r-insights/why-diversity-matters> accessed on August 8, 2022.

maleficent use of artificial intelligence by humanity and the objective is to limit any harmful use and when the artificial intelligence system is already in use, to be able to restrict the access to it and fix it. More will be discussed later in the safety and security section in this paper.

i. Responsibility

The ninth MDRAI principle is about human responsibility. If a harm was caused by an artificial intelligence system, there must be a person responsible for the results and human beings cannot blame the artificial intelligence. This principle includes the expectation of the development of an artificial intelligence that affects a person's life, quality of life, or reputation to be supervised and approved by a human being. More will be discussed later under the accountability section.

j. Sustainable Development

The last principle promotes the use of artificial intelligence so that it does not cause any harm to the environment. The objective is to the environmentally responsible design, development and use of artificial intelligence systems.

2. The Toronto Declaration: Protecting the Right to Equality and Non-discrimination in Machine Learning Systems

The Toronto Declaration ("TD") was published in May 2018 by Amnesty International[46] and AccessNow[47]. The TD focuses on human rights and is both applicable to the public and private sectors. The TD specifically targets machine learning but it is also applicable in general to all artificial intelligence systems. It is structured as 59 paragraphs and can be grouped into 5 themes as follows:

a. Well-being

The first part talks about the importance of acknowledging and respecting international human rights. Governments must promote human rights while private sectors must respect them. Human rights are universally inalienable rights[48]. The moment a person is born, that person will have equal rights as the others, and unless there is a specific circumstance (i.e.: crime), the human rights cannot be separated from the person. However, often human rights get in conflict with commercial interest (capitalist interest)[49] and therefore TD emphasizes on the central role that governments and private sector actors must play with the emerging technology such as machine learning.

Furthermore, it describes the most important ethical framework under human right: "*the right to equality and non-discrimination*", "*preventing discrimination*" and

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[46] Amnesty International <www.amnesty.org/en/> accessed on August 8, 2022.
[47] Access Now <www.accessnow.org>/ accessed on August 8, 2022.
[48] The Office of the High Commissioner for Human Rights, 'What are human rights?', <www.ohchr.org/en/what-are-human-rights#:~:text=Human%20rights%20are%20inalienable.,by%20a%20court%20of%20law> accessed on August 8, 2022.
[49] Bianca Carrera Espriu, 'Capitalism's incompatibility with human rights' compliance' (2021) <www.researchgate.net/publication/352765551_CAPITALISM'S_INCOMPATIBILITY_WITH_HUMAN_RIGHTS'_COMPLIANCE> accessed on August 8, 2022.

"*protecting the rights of all individuals and groups: promoting diversity and inclusion*". The first sub-principle explains what is considered a discrimination. Then it highlights the ideal role of the government and companies as gatekeepers of human rights towards emerging technology. The last part describes that in order to support equality and non-discrimination, inclusion, diversity and equity are key components to achieve them.

b. Duties of States: Human Rights Obligations

The second part of the declaration goes more in detail about the role the governments should play with machine learning including cases where private sectors have partnership with the public sector.

State Use of Machine Learning Systems

TD states that governments may use machine learning systems for all kinds of governmental activities for the public and may include "*the exercise and enjoyment of human rights, rule of law, due process, freedom of expression, criminal justice, healthcare, access to social welfare benefits, and housing*."[50] While using emerging technology such as machine learning, the government must abide by international and national human right law. In order to do so, it recommends three (3) steps to take: 1) perform the identification of risk related to emerging technology such as artificial intelligence and execute regular impact assessment[51], 2) be transparent and accountable for the use of emerging technology[52], and 3) enforce oversight by making sure that government officials understand the risks and be responsible for the private sector partners to make sure that they comply with the human rights law[53].

As an example, the use of emerging technology such as surveillance cameras with facial recognition technology by Canadian federal police authority, Royal Canadian Mounted Police ("RCMP:), made the news[54]in 201. Clearview AI was the service provider to RCMP for AI facial-recognition technology. The Office of Privacy Commissioner ("OPC"), out of the three (3) complaints, found two of them being valid and provided recommendations[55] to RCMP, which has accepted[56]. Should RCMP have taken the above mentioned three (3) steps recommended by the TD, different results would have come out.

Promoting Equality

In addition, the government should not act in a reactive way but must proactively eliminate discrimination. Currently, it is impossible to see the limit of the

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[50] Toronto Declaration Paragraph 27.
[51] Toronto Declaration Paragraph 31.
[52] Toronto Declaration Paragraph 32.
[53] Toronto Declaration Paragraph 33.
[54] Moira Warburton, 'Canada police broke law with facial recognition software, regulator finds', *Reuters* (10 June 2021) <https://www.reuters.com/article/us-canada-privacy-idCAKCN2DM208> accessed on August 8, 2022.
[55] At the time of writing this paper, the OPC does not have the power to enforce.
[56] Office of the Privacy Commissioner of Canada, 'RCMP contravened the Act by using certain types of non-conviction information for vulnerable sector checks without consent' (29 March 2021) <www.priv.gc.ca/en/opc-actions-and-decisions/investigations/investigations-into-federal-institutions/2020-21/pa_20210329_rcmp/> accessed on August 8, 2022.

emerging technology and the harm it can cause to the human society thus the role of the governments is to build programs increasing equity, diversity and inclusion[57].

Holding Private Sector Actors to Account

The last and the most important role of the governments is to make sure that private sector actors are accountable. In order to do that, governments must make laws, regulations and rules governing the use of machine learning. Furthermore, there should be a mechanism in place providing remedy to individuals affected or harmed by the emerging technology.

c. Responsibilities of Private Sector Actors: Human Rights Due Diligence

Just like the public sector, the private sector also requires human rights when using emerging technology. TD expects private sector actors to especially perform what they call human right due diligence independent of what the government's obligations are[58]. In order to do so, TD suggests that private sector actors go through three (3) steps: i. Identify potential discriminatory outcomes, ii. Take effective action to prevent and mitigate discrimination and track responses and iii. Be transparent about efforts to identify, prevent and mitigate against discrimination in machine learning systems[59].

The first step is similar to the one recommended to the governments. The developers must perform risk mapping and impact assessment in advance before deployment of machine learning. Then the next step would be to prevent the risk related to machine learning and put controls in place to prevent harms and discrimination. Furthermore, when the risk is too high or the risk is impossible to be mitigated, TD recommends to not deploy the system. The last step is similar to the second step recommended for the states. Private sector actors must be transparent and be accountable.

d. The Right to an Effective Remedy

In the TD, there is an emphasis on both private sector actors and governments to have a mechanism for redress or remedy when machine learning causes harm or discrimination. Similar to the banking industry, the private sectors may establish an internal mechanism to deal with disputes, complaints or issues around the use of artificial intelligence. As for the governments, they should follow the standards of due process, they should be cautious when deploying machine learning in the justice system, set out accountability and provide remedies through laws and regulations to the victims.

e. Conclusion

In the conclusion part, TD highlights again the fact that the advance of emerging technology must not ignore human rights. Furthermore, governments and private sector actors must work together to ensure there are no harms and discriminations caused by the emerging technology such as machine learning to humanity.

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[57] Toronto Declaration Paragraph 37.
[58] Toronto Declaration Paragraph 42.
[59] Toronto Declaration Paragraph 44.

3. Asilomar AI Principles

The Asilomar AI Principles were developed in 2017 by Future of Life institute. The Asilomar AI Principles are 23 in total and are divided into three (3) parts: 1) Research Issues, 2) Ethics and Values and 3) Longer-term issues.

In the first part, Asilomar AI Principles declares that when performing artificial intelligence research, the research must be beneficial[60], there should be an exchange between researchers and policy-makers[61], and should avoid racing for results (profits) without considering the safety measures[62].

The second part of the Asilomar AI Principles focuses on ethics and values such as safety, transparency, responsibility and privacy. As for transparency[63], it is divided into failure and judicial transparency and are described as below:

> *7) Failure Transparency: If an AI system causes harm, it should be possible to ascertain why.*
>
> *8) Judicial Transparency: Any involvement by an autonomous system in judicial decision-making should provide a satisfactory explanation auditable by a competent human authority.*

Then in the 9th principle, it makes the designers and builders be responsible for the harms or discrimination caused by their systems and similar to MDRAI, it gives power to the individuals regarding privacy. Also, interestingly, a human-in-the loop concept is put forward in a way that it makes the humans responsible to choose what to delegate to artificial intelligence systems[64].

The last part ends with capability caution[65], the importance of sustainability and thinking about resources[66], risk management[67], supervision of machines such as deep learning[68], and a cautionary message that general artificial intelligence cannot be developed just for the sake of one nation or one organization alone[69].

B. Main Ethical Frameworks

Now that the three (3) ethical framework declarations on artificial intelligence were analyzed, this paper will go through the most important ethical frameworks before analyzing the AIDA.

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60 Asilomar AI Principles Principle 1.
61 Asilomar AI Principles Principle 3.
62 Asilomar AI Principles Principle 5.
63 Asilomar AI Principles Principles 7 & 8.
64 Asilomar AI Principles Principle 16.
65 Asilomar AI Principles Principle 19.
66 Asilomar AI Principles Principle 20.
67 Asilomar AI Principles Principle 21.
68 Asilomar AI Principles Principle 22.
69 Asilomar AI Principles Principle 23.

1. Privacy

Privacy is one of the most important frameworks for artificial intelligence. It is all about respecting individual privacy and protecting it. As mentioned above, this principle is so important that there are already many regulations around the world that cover this principle. In the current era, data replaces oil[70]. As a matter of fact governments and companies massively collect personal information nowadays to either disclose (or sell) to another party or use them for various purposes such as marketing.

In the field of artificial intelligence, data is not just a nice-to-have but rather is a must. The more you have, the better it is for the developers and designers. Artificial intelligence is all about statistics and so the input is as important as the output. So firms will be data hungry and will do anything to collect all kinds of information from individuals and sometimes, the public without even knowing about it. Once collected, they will be used as training data, testing data and validation data, so that ultimately, they could be useful for the creation of different algorithmic models that are used for various purposes. If a firm knows a person's favorite food, allergies, illness history and eating habits, there could be all kinds of strategies to target that person through personalized marketing[71].

Then the next question would be "why do we need protection?". Let's take the Tim Hortons case[72] in Canada to better understand the impact and the importance of protecting our personal information for privacy. As a summary, in May 2019, Tim Hortons started to collect geolocation data of the users that have downloaded the Tim Hortons smartphone application. The collection of geolocations was mentioned to be only functional when a user would open the application based on the FAQ. However, the user's geolocation was actually tracked even when the application was not open. Thus, the application was able to infer a user's home, workplace, school, favorite stores, clinics, and even vacation place. One should remember the Target's case[73] where with inference based from buying patterns (through rebate coupons), Target was able to figure out that a teenage girl was pregnant even before her father knew. Furthermore, let's imagine that Tim Hortons was hacked, even though Tim Hortons confirmed that all personal data would be deleted, before the data was deleted. Personal informations are sold in the dark web easily[74] and this information could be used for various criminal

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[70] Javier Fernández-Lasquetty, 'A Data Economy: The Oil of the 21st Century' (*IE University* 19 June 2020), <www.ie.edu/building-resilience/knowledge/data-economy-oil-21st-century/> accessed on August 8, 2022.

[71] Timothy Caulfield, 'The problem with personalized health information' *Policy Options* (9 December 2019), <https://policyoptions.irpp.org/magazines/december-2019/the-problem-with-personalized-health-information/?mc_cid=0fdfb6a1e0&mc_eid=186b1383ed> accessed on August 8, 2022.

[72] Office of the Privacy Commissioner of Canada, 'Joint investigation into location tracking by the Tim Hortons App' (1 June 2022) PIPEDA Findings #2022-001, <www.priv.gc.ca/en/opc-actions-and-decisions/investigations/investigations-into-businesses/2022/pipeda-2022-001/> accessed on August 8, 2022.

[73] Kashmir Hill, 'How Target Figured Out A Teen Girl Was Pregnant Before Her Father Did' *Forbes* (16 February 2012), <www.forbes.com/sites/kashmirhill/2012/02/16/how-target-figured-out-a-teen-girl-was-pregnant-before-her-father-did/?sh=7403a9166686> accessed on August 8, 2022.

[74] Mary Manzi, Geekflare, 'How Much is Your Personal Information Worth on the Dark Web?' (*Geekflare*, 4 March 2022), <https://geekflare.com/personal-data-on-the-dark-web/#:~:text=Buyers%20can%20purchase%20the%20stolen,used%20to%20make%20fraudulent%20transactions.> accessed on August 8, 2022.

acts such as ransom/threat and social engineering for fraud[75]. This paper does not focus on privacy but with the Tim Hortons example, readers would acknowledge that protection of personal information is important for the general public and consumers.

2. Fairness

The second principle is fairness. There is no clear definition of what fairness is yet but some have attempted to analyze them to understand what fairness is in the artificial intelligence industry[76]. Often, what is fair for engineers and data scientists does not really mean the same thing for the end-users, consumers and the society in general[77]. In general, what ethics and law would consider as fairness would be to eliminate discrimination that could be based on biases as an example. So, when an artificial intelligence system must be fair, it must not produce any discrimination in order to be fair. Furthermore, fairness is related to biases as well. Indeed, within the industry of artificial intelligence, the type and quality of data are important and poor data could lead to biased models[78].

Then one can conclude that the designers or the developers of an artificial intelligence system just need to make sure that the data, the model and the result are all fair, meaning that they would be without any bias and discrimination. Nonetheless, this is not an easy task. In fact, it is easy in theory but in practice, it is not so. Let's take the example of Fintechs providing loans and the ultimate question would be as follows: "should we provide credit loans to the applicant?". This is a typical classification machine learning model where the output is either yes or no. For Fintech or Big Tech firms, most of the time, they will not necessarily have the financial or credit information of the applicant, so often they would make inferences from alternative data such as social network systems ("SNS") or commercial platforms. What if a training model shows as a result that candidates that post food pictures on their SNS have higher probability to reimburse a loan? If the Fintech firm would apply the model as it is without ethical impact assessment, would we have a fair artificial intelligence system there? What would happen to the elderly group that may have a good credit record but still not use SNS at all?

There was one interesting case with Amazon's recruiting system based on machine learning[79]. To summarize, since 2015, Amazon has used machine learning to teach itself to choose the best candidates for its recruiting system. The machine was fed

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[75] Ravi Sen, 'Here's how much your personal information is worth to cybercriminals – and what they do with it' (*The Conversation,* 13 May, 2021) <https://theconversation.com/heres-how-much-your-personal-information-is-worth-to-cybercriminals-and-what-they-do-with-it-158934> accessed on August 8, 2022.

[76] Sahil Verma & Julia Rubin, 'Fairness Definitions Explained' (2018 IEEE/ACM International Workshop on Software Fairness (FairWare), Gothenburg Sweden May 2018) <https://ieeexplore.ieee.org/abstract/document/8452913> accessed on August 8, 2022.

[77] Genevieve Smith with input and feedback from Nitin Kohli & Ishita Rustagi, 'What does "fairness" mean for machine learning systems?' (*Center for Equity, Gender & Leadership (EGAL) at Berkeley Haas*, 2020), <https://haas.berkeley.edu/wp-content/uploads/What-is-fairness_-EGAL2.pdf> accessed on August 8, 2022.

[78] Tad Simons, 'Addressing issues of fairness and bias in AI' *Thomson Reuters* (30 November 2020) <www.thomsonreuters.com/en-us/posts/news-and-media/ai-fairness-bias/> accessed on August 8, 2022.

[79] Jeffrey Dastin, 'Amazon scraps secret AI recruiting tool that showed bias against women' *Reuters* (10 October 2018), <www.reuters.com/article/us-amazon-com-jobs-automation-insight-idUSKCN1MK08G> accessed on August 8, 2022.

with resumes of mostly men and the result was that the model preferred men over women. Back then, the IT industry was full of men so because the set of data that were fed were not representative of today or of what the society would actually wish, the output was biased too. In order to combat discriminatory practice through artificial intelligence, New York city has put in place regulations, that will be effective starting first of January 2023, that prohibits the use of automated decision-making process for recruiting decisions unless some of the requirements were met[80].

The list of examples can continue and they will not be all covered in this paper. Nonetheless other than financial product and hiring, there are concerns with health care[81] and education[82]

3. Accountability

The next ethical framework is accountability. Accountability is about being responsible and legally could also mean to be liable. For the artificial intelligence industry, in simple terms, it would mean that if an artificial intelligence system goes wrong, who do we blame for reparation, redress, restitution and punishment? Artificial intelligence does not have legal personality yet besides the humanoid, Sophia, from Saudi Arabia that received citizenship in 2017[83].

In order to have a legal personality, it either needs to be a natural human or be a legal person as of today. As a matter of fact, there are few people that are in favor of granting artificial intelligence systems a legal personality[84]. However, it will not be so easy to grant legal personality to artificial intelligence as many barriers exist[85]. To be cautious, governments, scholars and researchers would prefer the accountability to be held by the human beings behind the artificial intelligence and this is especially true for narrow artificial intelligence. Blaming the results of harms and discrimination on the narrow artificial intelligence will not make any sense today as we mostly are surrounded by narrow artificial intelligence.

However, when general artificial intelligence, that could talk, think and act like human beings, arrive, things may have to be a bit different. As proposed and recommended in paragraph 19 of the Asilomar AI Principles[86], "capability caution" must be considered carefully, which basically says that since not all agree on what

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[80] New York City of Council, A Local Law to amend the administrative code of the city of New York, in relation to automated employment decision tools, ch 20 § 20.

[81] Katherine J. Igoe, 'Algorithmic Bias in Health Care Exacerbates Social Inequities — How to Prevent It' (*Harvard T.H. Chan School of Public Health,* 12 March 2021), <www.hsph.harvard.edu/ecpe/how-to-prevent-algorithmic-bias-in-health-care/> accessed on August 8, 2022.

[82] Andre M. Perry & Nicol Turner Lee, 'AI is coming to schools, and if we're not careful, so will its biases' (*Brookings*, 26 September, 2019), <www.brookings.edu/blog/the-avenue/2019/09/26/ai-is-coming-to-schools-and-if-were-not-careful-so-will-its-biases/> accessed on August 8, 2022.

[83] Heba Kanso, 'Saudi Arabia gave 'citizenship' to a robot named Sophia, and Saudi women aren't amused' *Reuters* (4 November 2017) <https://globalnews.ca/news/3844031/saudi-arabia-robot-citizen-sophia/> accessed on August 8, 2022.

[84] Visa A.J. Kurki, *A Theory of Legal Personhood,* Oxford University Press 2019.

[85] Simon Chesterman, 'Artificial intelligence and the limits of legal personality'(2020) 69/4 International & Comparative Law Quarterly <https://www.cambridge.org/core/journals/international-and-comparative-law-quarterly/article/artificial-intelligence-and-the-limits-of-legal-personality/1859C6E12F75046309C60C150AB31A29> accessed on August 8, 2022.

[86] Asilomar AI Principles Principle 19.

artificial intelligence can do, we should not assume that there is a limit to what artificial intelligence can do. Simply put, our society should not assume that artificial intelligence could never rule over human beings in the future. Hence accountability should be imposed on a human being, and the firms or governments should not deny responsibility by blaming the artificial intelligence systems. In order to do so, a proper governance should be in place where a senior officer, the board members or a specific committee dedicated to artificial intelligence should have the power to veto. In fact, if the senior officer, board members or a committee has no power, then the governance will not be helpful for accountability, but in the worst case, it will be seen as ethic washing.

4. Transparency/Explainability

The fourth ethical framework is actually a pillar for the accountability principle. In order for a developper, designer or user to be held accountable, one must understand how the artificial intelligence system functions exactly. Transparency is about being open to what is being developed, designed and used. It is also about telling how the systems work, how the data are used, collected and disclosed. Ultimately, the end users or those that are affected by the artificial intelligence systems must be able to understand how the artificial intelligence systems impact them. The concept of transparency includes explainability and interpretability.

Then what are explainability and interpretability? Explainability "*is the extent to which the internal mechanics of a machine or deep learning system can be explained in human terms. It's easy to miss the subtle difference with interpretability, but consider it like this: interpretability is about being able to discern the mechanics without necessarily knowing why. Explainability is being able to quite literally explain what is happening.*"[87] On the other hand, interpretability is "*about the extent to which a cause and effect can be observed within a system. Or, to put it another way, it is the extent to which you are able to predict what is going to happen, given a change in input or algorithmic parameters. It's being able to look at an algorithm and go yep, I can see what's happening here.*"[88]

Thus, in order to hold an organization accountable for the harm or discrimination caused by the artificial intelligence systems, transparency, explainability and interpretability are the basic foundations because of the black box issue. Dino et al. notes that "*(b)lack boxes map user features into a class or a score without explaining why, because the decision model is not comprehensible to stakeholders, even to expert data scientists.*"[89] As an example, in Korea, Naver Corp. ("Naver") was in the center of criticism with its news portal platform[90]. In the past, Naver was known to do news ranking manipulation on its news portal platform where news was suggested to the

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[87] Richard Gall, Packt, 'Machine Learning Explainability vs Interpretability: Two concepts that could help restore trust in AI' *KDNuggets* (December 2018), <www.kdnuggets.com/2018/12/machine-learning-explainability-interpretability-ai.html> accessed on August 8, 2022.

[88] Ibid.

[89] Pedreschi, D., Giannotti, F., Guidotti, R., Monreale, A., Ruggieri, S., & Turini, F. 'Meaningful Explanations of Black Box AI Decision Systems' (Proceedings of the AAAI Conference on Artificial Intelligence July 2019) <https://doi.org/10.1609/aaai.v33i01.33019780> accessed on August 8, 2022.

[90] Kitae Kim & Shin-Il Moon, 'When Algorithmic Transparency Failed: Controversies Over Algorithm-Driven Content Curation in the South Korean Digital Environment' (2021) 65/6 American Behavioral Scientist <https://journals.sagepub.com/doi/10.1177/0002764221989783> accessed on August 8, 2022.

visitors of the Naver portal. Since then, Naver claimed to have implemented a personalized algorithm to correct the situation where it proposes news according to the interest of the visitors. Nevertheless, despite implementing it, suspicion for manipulation continued and Naver was not able to be fully transparent about the sources of its data and the model. In fact, Naver had failed both with accountability and transparency principles.

Nevertheless, full transparency may also cause harm and create distrust in artificial intelligence systems[91]. Being fully transparent could be beneficial to those who wish to play the adversarial game as once you have the whole map of the game, you know how to cheat to get straight to the result[92]. As an example, if a person knows that a female ordering books via amazon and sending gift cards through SNS to more than ten (10) friends will highly augment the chance to get a loan, that person will play the game to fit into the model.

5. Safety and Security

The last ethical framework to explore is about safety and security of an artificial intelligence system. Artificial intelligence systems are supposed to help and assist the well-being of human beings as declared in the MDRAI. It must cause no harm and when used for safety systems, there must be a control to mitigate the risk of causing harm. Think about self-driving vehicles, smartphones, and other Internet of Thing systems that are constantly evolving. They bring beneficence to humanity but at the same time also carry with them safety and security issues. Imagine if a self-driving vehicle was hacked so that it could be manipulated by a criminal to cause an accident[93]. What would happen if smart speakers were hacked and someone could listen to all the conversation in a household[94]? And there are many other more examples for every time a new technology comes out[95].

According to the Asilomar AI principle, "*AI systems should be safe and secure throughout their operational lifetime, and verifiably so where applicable and feasible.*"[96] From the concept and design phase to testing, deployment and maintenance phase, systems embedding emerging technology must be checked and challenged. Let's take the example of Facebook with fake news[97]. In fact, Facebook admitted that it had done nothing to prevent the genocide fuelled by fake news on Facebook regarding the

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[91] Philipp Schmidt, Felix Biessmann & Timm Teubner, 'Transparency and trust in artificial intelligence systems' (2020) 29/4 Journal of Decision Systems <https://www.tandfonline.com/doi/full/10.1080/12460125.2020.1819094?scroll=top&needAccess=true> accessed on August 8, 2022.

[92] Paul B. de Laat, 'Algorithmic Decision-Making Based on Machine Learning from Big Data: Can Transparency Restore Accountability?' (2018) 31 Philos. Technol. <https://rdcu.be/cWUof> accessed on August 8, 2022.

[93] Stephen Ornes, 'How to hack a self-driving car' *Physics World* (18 August 2020) <https://physicsworld.com/a/how-to-hack-a-self-driving-car/> accessed on August 8, 2022.

[94] Charlotte Jee, 'Smart speakers can be hijacked by apps that spy on users' *MIT Technology Review* (21 October 2019) <www.technologyreview.com/2019/10/21/330/smart-speakers-can-be-hijacked-by-apps-that-spy-on-users/> accessed on August 8, 2022.

[95] Roman V. Yampolskiy & M. S. Spellchecker, 'Artificial Intelligence Safety and Cybersecurity:a Timeline of AI Failures' <https://arxiv.org/pdf/1610.07997.pdf> accessed on August 8, 2022.

[96] Asilomar AI Principles, Paragraph 6.

[97] Karen Hao, 'How Facebook got addicted to spreading misinformation' (*MIT Technology Review*, 11 March 2021) <www.technologyreview.com/2021/03/11/1020600/facebook-responsible-ai-misinformation/> accessed on August 8, 2022.

Rohingya Muslim minority in Myanmar. The goal of the social network platforms is first to identify the interest of the end-users. Then they feed with what people are interested in so that those people stay longer on that platform and that is how they make money through advertising and marketing through artificial intelligence, modeling, etc. If one trusts in a certain political belief, then a social network platform will feed with similar information as much as possible, be it fake news, so that you stay as much as possible and artificial intelligence, without a proper control, will make it worse[98].

Again, safety and security is all about non-maleficence of artificial intelligence. The developers and designers of artificial intelligence systems should not only check foreseeable harm but use their creativity and imagination since based on capability caution, anything could happen in the future.

III. ANALYSIS OF ARTIFICIAL INTELLIGENCE AND DATA ACT

This paper will now take the AIDA and verify if the five ethical frameworks were taken into consideration at the current form. It will start with the principle of privacy, then fairness, accountability, transparency/explainability and safety & security.

A. Privacy

It seems like AIDA itself does not cover directly the subject of privacy similar to EU's AIA, US's AAA and the Directive. In the EU, the majority of the privacy principle is rather covered in the GDPR, nevertheless, a small section exists in the article 55 of AIA[99] in relation to the regulatory sandbox and article 60 of AIA in relation to the EU database[100]. In the United States, there is no federal legislation regarding privacy, but there are state regulations such as CCPA and in the public sector of Canada, there is the Privacy Act. Therefore, it is likely that AIDA will not have a specific section on privacy with the hope that the CPPA becomes effective.

However, there is indirectly a part concerning privacy in section 6 of AIDA. Section 6 says:

> ***Anonymized data***
>
> *6 A person who carries out any regulated activity and who processes or makes available for use anonymized data in the course of that activity must, in accordance with the regulations, establish measures with respect to*
>
> *(a) the manner in which data is anonymized; and*
>
> *(b) the use or management of anonymized data.*

This section is probably to make sure that developers and designers of artificial intelligence systems cannot use the term anonymization to escape from PIPEDA (or

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98 Gul, A., Erturk, Y. and Elmer, P. (ed.) 'Digital Transformation in Media and Society' (Istanbul University Press 2020), ch 9, Andreas Kaplan 'artificial intelligence, social media, and fake news:is this the end of democracy'.

99 Artificial Intelligence Act, Article 65.

100 Artificial Intelligence Act, Article 60.

CPPA). The future regulations will probably provide the requirements for what is considered an anonymized data as well.

B. Fairness

Fairness is about bias and discrimination. In AIDA, section 5 (1) provides definitions on what is a "*biased output*". The definition of "*biased output*" considers the human rights aspect recommended by the TD. Then in section 8 of AIDA, there is a requirement for high-impact systems to implement risk management systems to properly deal with biased output[101]. It looks like that the future regulations will include standards and requirements on how to implement risk management systems that will identify, assess and mitigate risks related to biased output.

Furthermore section 9 of AIDA requires developers and designers to monitor compliance with the mitigating measures (controls). Again, the AIDA does not specify directly what needs to be implemented for a responsible person but future regulations would probably provide more details. Nonetheless we can assume that permanent controls, independent testing, regulatory watch, regular update of the controls library evaluation and update of the controls would be required.

AIDA, compared to AIA, seems to be too simple in this matter. Again, the upcoming regulations should probably add more clarity but some mechanism such as the "human-in-the-loop" requirement for a high-impact system should have been included in the AIDA.

C. Accountability

As for accountability, it first defines in section 5 (2) of AIDA on what a person responsible is:

"*For the purposes of this Part, a person is responsible for an artificial intelligence system, including a high-impact system, if, in the course of international or interprovincial trade and commerce, they design, develop or make available for use the artificial intelligence system or manage its operation.*" So in AIDA, a person, which includes a legal entity, becomes responsible for the artificial intelligence system as a designer, developer or for making available for use in the international or interprovincial trade and commerce. The concept of developer and designer are limited but the wording "make available for use" is broad enough to capture different players as well.

Then AIDA allocates accountability to the person responsible to 1) put in place risk management program[102], 2) monitor mitigating measures[103], 3) keep records[104] and 4) disclosing regulatory information[105]. Furthermore, a person who violates the AIDA requirements could be faced both to administrative monetary penalties[106]("AMP") and

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[101] Artificial Intelligence and Data Act, section 2.
[102] Artificial Intelligence and Data Act, section 8.
[103] Artificial Intelligence and Data Act, section 9.
[104] Artificial Intelligence and Data Act, section 10.
[105] Artificial Intelligence and Data Act, sections 11 & 12.
[106] Artificial Intelligence and Data Act, section 29.

offences[107]. For AMP, more information will be provided in the regulations. As for the offences, any person who violates sections 6 to 12 and mislead or provide false information are all guilty of an offence"[108]. Similar to AIDA and GDPR, the maximum amount for a conviction on indictment could go up to $10,000,000 or 3% of the company's gross global revenues, whichever is greater.

In the EU, AIA on the other hand defines "providers", "users", "importers", "distributors" and "operators". In Chapter 3 of AIA, it provides all the obligations of the providers, users and other parties. Very prescriptive obligations are written down so that each actor understands what they are accountable for[109]. To add, similar to AIDA, there are penalties mechanisms within AIA as well[110].

Accountancy also means having a strong and independent organization with power to strengthen the compliance and AIDA mentions about an "Artificial Intelligence and Data Commissioner[111]". A commissioner without any enforcing power like the current Office of Privacy of Commissioner ("OPC") of Canada should be avoided[112]. Furthermore, the public would prefer to have more of an independent regulator than a commissioner chosen directly from the Minister. The public sector could be itself biased and may not be the best to play such a role. Moreover, the private sectors would want an ombudsman type like the OPC[113] with more power instead of having a public agency. In addition, the audit system is a bit unclear as it seems to let the person responsible of high-impact system choose its own auditor and it is really in the hands of the Minister to figure out that something is not going on well in the industry[114]. In the end, to let all the power in the hands of the public sector may be a real concern as the government itself acknowledges[115] that there is a systemic risk at the government level and that the government is also trying to combat discrimination [116].

D. Transparency/Explainability

For transparency and explainability ethical frameworks, AIDA puts several requirements on the designers & developers as well as for those who manage high-impact systems.

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[107] Artificial Intelligence and Data Act, section 30.
[108] Artificial Intelligence and Data Act, section 30 (1) & (2).
[109] Artificial Intelligence Act, Articles 16 to 29.
[110] Artificial Intelligence Act, Articles 71 and 72.
[111] Artificial Intelligence and Data Act, section 33.
[112] Barry Sookman, 'PIPEDA by the numbers: lessons for privacy law reform in Canada?' (*Barry Sookman*, 12 October 2020)<www.barrysookman.com/2020/10/12/pipeda-by-the-numbers-lessons-for-law-reform/> accessed on August 8, 2022.
[113] To note that if the proposed CPPA becomes effective, the OPC will likely have more power than now.
[114] Artificial Intelligence and Data Act, section 15.
[115] 'Statement by the Prime Minister on the International Day for the Elimination of Racial Discrimination' (*Prime Minister of Canada*, 21 March 2022) <https://pm.gc.ca/en/news/statements/2022/03/21/statement-prime-minister-international-day-elimination-racial> Accessed on August 8, 2022.
[116] 'Addressing Systemic Racism in Canada's Criminal Justice System while maintaining public safety: proposed legislative amendments to the Criminal Code and the Controlled Drugs and Substances Act' (*Government of Canada*, 7 December 2021) <www.justice.gc.ca/eng/csj-sjc/pl/sr-rs/index.html> accessed on August 8, 2022.

Designers and developers must "*publish on a publicly available website a plain-language description of the system that includes an explanation of*

(a) how the system is intended to be used;

(b) the types of content that it is intended to generate and the decisions, recommendations or predictions that it is intended to make;

(c) the mitigation measures established under section 8 in respect of it; and

(d) any other information that may be prescribed by regulation."[117]

As for those who manages, they must "*publish on a publicly available website a plain-language description of the system that includes an explanation of*

(a) how the system is used;

(b) the types of content that it generates and the decisions, recommendations or predictions that it makes;

(c) the mitigation measures established under section 8 in respect of it; and

(d) any other information that may be prescribed by regulation.[118]"

Furthermore, a person must keep general records[119] and those who are responsible for high-impact systems must notify the Minister if the system will likely result or results in material harm[120]. However, what "*material harm*" means is not defined in AIDA and unless it is specified in the upcoming regulations, unfortunately it should be expected that the definition would be developed through cases. Also, guidelines could be provided to give examples of what could be considered a material harm to the industry.

In addition, transparency principles related to automated decision-making systems in CPPA and Quebec's Bill 64[121] will normally provide more transparency. As mentioned above, the definition of an automated decision-making system is broader and covers artificial intelligence as well. In CPPA, an organization must be transparent about the use of automated decision-making system[122] and when used for an individual that could have a significant impact, the individual has the right to request in writing for explanation of the prediction, recommendation and decision[123]. Moreover, it requires the organization to include in the explanation information such as "*the type of personal information that was used to make the prediction, recommendation or*

[117] Artificial Intelligence and Data Act, section 11 (1).
[118] Artificial Intelligence and Data Act, section 11 (2).
[119] Artificial Intelligence and Data Act, section 10.
[120] Artificial Intelligence and Data Act, section 12.
[121] Bill 64, *An Act to modernize legislative provisions as regards the protection of personal information*, 1st session, 42nd Legislature, 2021.
[122] Consumer Privacy Protection Act, section 62 (2) (c).
[123] Consumer Privacy Protection Act, section 63 (3).

decision, the source of the information and the reasons or principal factors that led to the prediction, recommendation or decision."[124]

Similarly, in Quebec, section 12.1 requires organizations to communicate to individuals when an automated decision-making system is exclusively used and when a request for explanation is made, the organizations must provide the rationale why certain results came out from the automated decision-making system. Besides, individuals seem to have more power than the CPPA as they can require a human to review the automatically made decision. However, when compared with article 22 of the GDPR, Quebec provides less power as in the EU, individuals have the power to force the organization not to solely use automated decision making systems to make decisions[125].

E. Safety and Security

Finally, AIDA uses the concept of "harm" to grasp the safety and security ethical framework. As previously noted above, harm includes physical and psychological harm to individuals. A responsible person must perform risk management for harms that could be caused by a high-impact system[126] and monitor the controls put in place to mitigate the risks identified in the risk assessment process[127]. Moreover, as mentioned in the transparency/explanation section, should there be a material harm caused by a high-impact system, the person responsible must notify the Minister[128]. Additionally, the Minister has the power to request for more information[129] and order the person responsible to cease using or making available the high-impact system[130]. The minister may also publish on a public website information about an artificial intelligence system that may cause serious risk of imminent harm[131].

As for punishment, any person who makes available for use which causes serious physical or psychological harm will be considered to have committed an offence[132] and in consequence will be subject to section 40 of AIDA for penalties. For conviction on indictment of an individual, it will either be a fine or/and imprisonment of up to five (5) years and for other persons, it will be a maximum fine of $25,000,000 or four (4) % of global gross revenue, whichever is greater.

Also, it is important to note that CCPA[133] also has sections covering harms in relation to the personal information that may provide additional obligations to the person responsible for artificial intelligence.

CONCLUSION

The goal of this paper was to take AIDA and analyse based on the five main ethical frameworks of artificial intelligence. AIDA is still a draft and its regulations are

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[124] Consumer Privacy Protection Act, section 63 (4).
[125] GDPR, Article 22 (1).
[126] Artificial Intelligence and Data Act, section 8.
[127] Artificial Intelligence and Data Act, section 9.
[128] Artificial Intelligence and Data Act, section 10.
[129] Artificial Intelligence and Data Act, section 14.
[130] Artificial Intelligence and Data Act, section 17.
[131] Artificial Intelligence and Data Act, section 28.
[132] Artificial Intelligence and Data Act, section 39.
[133] Consumer Privacy Protection Act, sections 58 & 59.

yet to be published so this paper cannot confirm the overall ethical framework of the federal legislation. However, this paper was able to confirm that AIDA covers the basics of five main artificial intelligence ethical frameworks, besides privacy principle which is covered by PIPEDA just like in the EU.

However, AIDA has room for improvements as well. First of all, there seems to be an issue with the scope. It does not apply to the public sector. The Directive is not perfect and has its own issues[134] as it does not cover candidates and employees. Thus, the public sector employees will have neither the Directive nor AIDA applicable to them. Another big issue is the transparency with audit results. Also, the RCMP case with Clearview AI is a good example of why public sectors should also be covered, at least at the federal level and let the provincial governments adopt it in a similar way.

Next, Although AIDA covers ethical principles for artificial intelligence such as fairness, accountability, transparency/explainability and safety & security, it seems to lack clarity. As an example, it will be hard for the industry to know that a "*material harm*" is. Nevertheless, guidelines could be created to provide examples of what material harm is in the future for the industry. Moreover, by comparison with AIA, which is more prescriptive, many important aspects of ethical artificial intelligence principles are missing. As an example, article 14 of AIA provides the human oversight requirements in the EU[135]. Another example could be the article 15 about *Accuracy, robustness and cybersecurity* where for high-risk AI systems, there are additional requirements around accuracy, robustness and cybersecurity[136]. Once the regulations become publicly available, it would be clearer for the industry but the regulations should have similar items that are reflected in AIA as AIDA does not include them in the current version.

Last, to have real accountability, there should be an independent and neutral agency that can be trusted by the states, the public and private sector actors. In the current version of AIDA, persons responsible for artificial intelligence systems must perform the assessment mentioned in section 7 of AIDA[137]. This would probably provide a lot of freedom to the private sectors but at the same time be ambiguous with lack of oversight. As previously mentioned, the public sector itself may be biased so to let the Minister and commissioner play alone the role of the judge would be dangerous. This paper suggests that to have a real accountability implemented in Canada, It might be better to have an independent organization that would include experts like data scientists, artificial intelligence engineers, lawyers, medical experts, psychologists, sociologists, human resource experts, public affairs experts, and etc.

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[134] Omar Bitar, Benoit Deshaies & Dawn Hall, '3rd Review of the Treasury Board Directive on Automated Decision-Making' (29 April 2022) <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4087546> accessed on August 8, 2022.

[135] Artificial Intelligence Act, Article 14.

[136] Artificial Intelligence Act, Article 15.

[137] Artificial Intelligence and Data Act, section 7.

FUTURE IS QUANTUM

Katri L. Nousiainen; Joonas Keski-Rahkonen*

Abstract: New, emerging quantum resources, such as quantum computing, have a potential to provide benefits well beyond the capabilities of today's technology, and they are around the corner. Consequently, the current quantum progress brings up several open legal and ethical questions that herald awareness, analysis, and action! Foreshadowing this quantum wake-up, this paper presents a general overview of the quantum future within the framework of law, economics, and society.

Keywords: Quantum Awareness; Quantum Landscape; Action Strategy

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INTRODUCTION

The brave new world of new quantum technologies is upon us. In the past century, the quantum way of thinking has reshaped our worldview about the Universe but has also led to significant practical applications our modern society relies on. A current trend is to innovate more efficient and greener materials or components for future nanoelectronics by taking a better advantage of quantum resources[1], as it is getting harder to push the boundaries of Moore's law[2]. In addition to this evolutionary development, we are now experiencing a new wave of novel quantum technologies[3] that are promising in terms of social impact and commercial applications: *quantum sensing*[4], *imaging*[5], *metrology*[6], *communication*[7] *and computing*[8].

Although the emerging quantum technologies, such quantum computing, are still at the initial stage of utilization – transiting from the pilot phase to the commercial sphere, they have already begun to influence the structures and functions of international society in a spectrum of ways. Sovereign states, institutions, organizations, and corporations should be prepared for the emergence of these new technologies, with the constant goal of improving the current legislative framework and initiating new ones. The upcoming technological shift will take place gradually, thus continuing efforts to stay updated on this development is crucial in order to provide for meaningful legislation initiatives.

As we are entering into the new era of the quantum world, the sovereign states, institutional and organizational operators, as well as businesses should reflect upon the social and legal relevance of this technological progress. Towards this goal, we propose

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[1] See, for instance, P. Ball, 'Materials innovation from quantum to global*'* (2022) Nat. Mater.ls, *21*(9), 962-967.; F.P. García de Arquer and others' Semiconductor quantum dots: Technological progress and future challenges. Science' (2021) *373*(6555), eaaz8541.

[2] E. Moore, 'Cramming more components onto integrated circuits' (1965) Electronics 38, 114.

[3] See, for instance, Antonio Acín and others, 'The quantum technologies roadmap: a European community view' (2018) 20 New J. Phys. 20, 080201.

[4] See, e.g., C. L. Degen, F. Reinhard and P. Cappellaro, 'Quantum sensing*'* (2017) Rev. Mod. Phys., *89*(3), 035002.

[5] See, e.g., P. GA., Moreau, E. Toninelli, T. Gregory and M.J. Padgett, 'Imaging with quantum states of light' (2019) Nat. Rev. Phys., *1*(6), 367-380.; O.S. Magaña-Loaiza and R.W. Boyd, 'Quantum imaging and information*'* (2019) Rep. Prog. Phys., *82*(12), 124401.

[6] See, e.g., V. Giovannetti, S. Lloyd and L. Maccone, 'Advances in quantum metrology'(2011) Nat. phot.*, 5*(4), 222-229.
G. Tóth and I. Apellaniz, 'Quantum metrology from a quantum information science perspective' (2014) J. Phys. A Math., *47*(42), 424006; M. A. Taylor, M. A., and W.P. Bowen,' Quantum metrology and its application in biology' (2016) Phys. Rep., *615*, 1-59; L. Pezze and others,'Quantum metrology with nonclassical states of atomic ensembles'(2018). Rev. Mod. Phys., *90*(3), 035005.

[7] N. Gisin and R. Thew, 'Quantum communication*'* (2007) Nat. phot., *1*(3), 165-171; N. Gisin and others, 'Quantum cryptography*'* (2002) Rev. Mod. Phys.,*74*(1), 145; S. Wehner, D. Elkouss and R. Hanson, 'Quantum internet: A vision for the road ahead' (2018) Science, *362*(6412), eaam9288; H.J. Kimble, 'The quantum internet*'* (2008) Nature, *453*(7198), 1023-1030.

[8] See, e.g., Isaac L. Chuang and Michael A. Nielsen, *Quantum Computation and Quantum Information* (India, Cambridge University Press 2000).; D. Thaddeus D. and others, 'Quantum computers' (2010) Nature, 464(7285), 45-53.

the A-cubic approach - awareness, analysis, and action! - being employed in decision and policy making (visualized in Fig. 1).

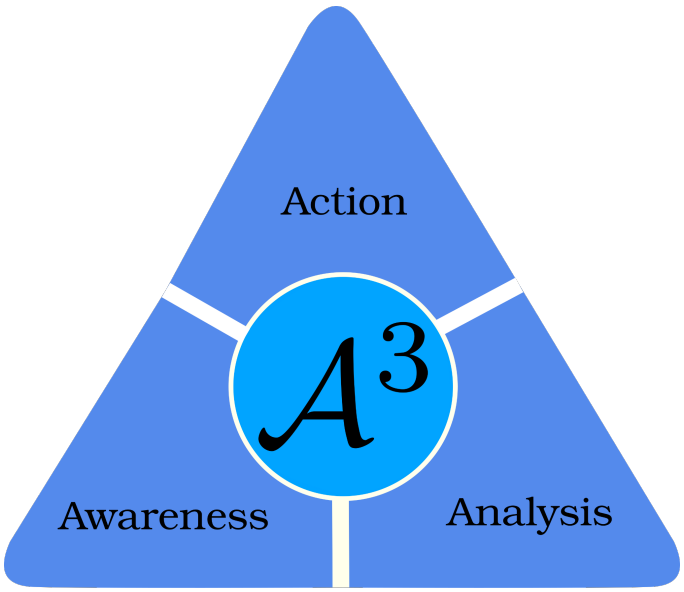


Figure 1. A-cubic approach to integrate new emerging quantum technologies into a part of future society: Raise awareness, analyze the environment, and take appropriate action.

First, it is of crucial importance that we are *aware* of these new technologies; secondly, their implications and ramifications must be carefully *analyzed* within their respective environments, and lastly appropriate *actions* should be taken to work for their development but also to safeguard for individual and social rights. In the international arena, the path dependency process plays a crucial role in finding balance with various rights and obligations. In the quantum-technological environment, we see that the legal design approach[9], which aims to empower within improving, supporting, and demonstrating, can pave the way towards a legal framework that is transparent, human-centric, efficient, and comprehensible as well as foster equality and nondiscrimination. We recognize that it is better to be proactive than reactive.

I. AWARENESS: ENTERING INTO A NEW AGE OF QUANTUM

To take full benefit of new emerging quantum technologies, we should first be aware of what they encompass. Based on the economic theories on path dependency, knowledge is prevalent in society and learning is considered as gradual.[10] We encounter the same dilemma with quantum technologies: we have the golden opportunity to embrace learnings from the past, to enhance, and build on the understanding that we have today. As a matter of exemplary incident, we may study the

[9] Katri Nousiainen, 'Legal Design in Commercial Contracting and Business Sustainability – New Quality Metrics Standards' (2022) Journal of Strategic Contracting and Negotiation.; Katri Nousiainen, 'General theory of legal design in law and economics framework of commercial contracting´ (2021) Journal of Strategic Contracting and Negotiation, 5(4): 247–256.

[10] S. Rizzello, 'Knowledge as a path-dependence process' (2004) Journal of Bioeconomics, 6 (3): 255–274.

policy frameworks of the 1990's for the internet.[11] A more modern reference point for the embodiment of quantum technologies is an envisaged social-legal-ethnic framework for nanotechnology.[12] Like with these technological steps, the introduction of quantum will raise ethical, legal, and distributive challenges. For instance, there might develop a quantum technological "gap" between haves and have-nots, as certain nations, corporations, or groups dominate access to the technology. Quantum technologies, like the rise of the internet or the birth of nanotechnology, might also have the unfortunate effects of exacerbating wealth and power differentials in a manner that attracts criticism and resistance. However, just reflecting the past is not enough, and a new point of view on quantum matters is a linchpin, even when the learning process comes with a cost. Today much of these aspects are ill-defined, but the technology is already arriving, and its consequences will be eventually felt by the whole society. At the end of the day, comprehensive understanding and knowledge are pivotal for successful innovation, development, and competition. Thus, we should raise quantum awareness.

Even though the zoo of quantum technologies share some common features, even with current technologies as pointed out above, they also have their own special characteristics we need to acknowledge in any prospective policy and legal actions. In addition, specific future measures depend on multiple unknown variables: technological progress and breakthroughs, the changes in the overall society including the status of international relations and how transparently operators reveal their level of development within these technologies, and other unforeseeable conditions. World politics, underlying power dynamics, and uncertain contingencies bring their challenge to predict what the future holds. As regards warfare and other sensitive fields, the underlying incentives of nation states and non-state actors play a key role.[13] This further affects how countries will engage in international collaboration and other incentive-based frameworks.

On the other hand, the different technologies, such as quantum sensing, imaging, metrology, communication, and computing, intertwine with each other in synergy. For instance, an advancement in sensing and metrology often speeds up the development of quantum computers and networks. Vice versa, the exigencies of the quantum information field stimulate the development of imaging and metrology. Another aspect is that various of these technologies can act in a cooperative manner. A prime example is a speculative scenario, where a military force takes advantage of quantum sensing and metrology for monitoring the enemy forces and planning the best timing for their military actions, while employing quantum communication to keep classified

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[11] Andrew Chadwick and Christopher May, 'Interaction between States and Citizens in the Age of the Internet: "e-Government in the United States, Britain, and the European Union' (2003) GOVERNANCE 16, no. 2: 271-300.; Jan Van Dijk AGM, 'The deepening divide: Inequality in the information society', (2005) SAGE PUBLICATIONS.

[12] See for instance, BL Shumpert and others, 'Specificity and Engagement: Increasing ELSI's Relevance to Nano-Scientists*'* (2014) Nanoethics,8(2):193-200.; Antonio G. Spagnolo and Viviana Daloiso, 'Outlining Ethical Issues in Nanotechnologies' (2009) Bioethics. 23. 394-402.; Tsjalling Swierstra and others, 'Converging Technologies, Shifting Boundaries*'* (2009) Nanoethics. 3. 213-216.

[13] More on national security applications and implications, see for instance, Hoofnagle, C., & Garfinkel, S. (2022). Law and Policy for the Quantum Age. Cambridge: Cambridge University Press. doi:10.1017/9781108883719.

information and quantum computing to spy on quantum-vulnerable messages.[14] Besides interacting in a complicated manner, individual technological fields usually evolve at an asynchronized tempo. Furthermore, distinct operators, like governmental institutes, commercial companies, and academy, drive the development of the technologies from different points of view. Due to all these aspects, it is arduous to grasp the full picture, not to mention prognosticating the future of the whole multi-faced field. Nonetheless, general awareness is a necessary precursor towards deeper analysis of the technologies paving the way to desirable actions.

Ideally, there should not be any great knowledge and information asymmetry between all the relevant operators. Furthermore, knowledge on quantum technologies should also be disseminated in understandable terms to the general audience to achieve a wide social comprehension. In particular, the academy and education system have a central role to play in raising public quantum awareness, and to generate" quantum-skillable work force" which is a prerequisite to sustain a quantum ecosystem in general.

In order to learn from best interdisciplinary practices and to create awareness and the most value, it is crucial to bridge more between business, academia and society. We see it is worthy of increasing knowledge and information between different operators regarding interests, incentives, and objectives supporting the creation of standardization and best practices within quantum technologies. Thus, the goal is to thrive the technological development and its social embodiment, and to create a flourishing quantum ecosystem in the future.

II. ANALYSIS: CHARTING THE QUANTUM LANDSCAPE

A key concept in quantum awareness is to acknowledge that the employment and possession of new technologies create possibilities but also bring responsibilities. To navigate through a widely uncharted legal landscape towards a bright quantum future, we have launched an idea of *Quantum Roadmap*[15] that is also motivated by the desire to raise quantum awareness and to encourage further debate on the topic. Our suggested Roadmap of five principles for the social embodiment of quantum technologies are: *ethics*, *inclusion*, *balancing regulatory activities*, *safeguarding individual rights*, and *innovating by design* (collectively shown Fig. 2).

[14] More on national security applications and implications, see for instance, Hoofnagle, C., & Garfinkel, S. (2022). Law and Policy for the Quantum Age. Cambridge: Cambridge University Press. doi:10.1017/9781108883719.

[15] Katri Nousiainen and Joonas Keski-Rahkonen, *Quantum Computing Era – New Legal Order, Berkeley Global Society: The Tech Book* (1st edition Europa Institut EIZ, 2022).; Katri Nousiainen and Joonas Keski-Rahkonen, 'Law and Order at the Quantum Computing Era´ (May 2022) Berkeley Technology Law Journal, Podcast.

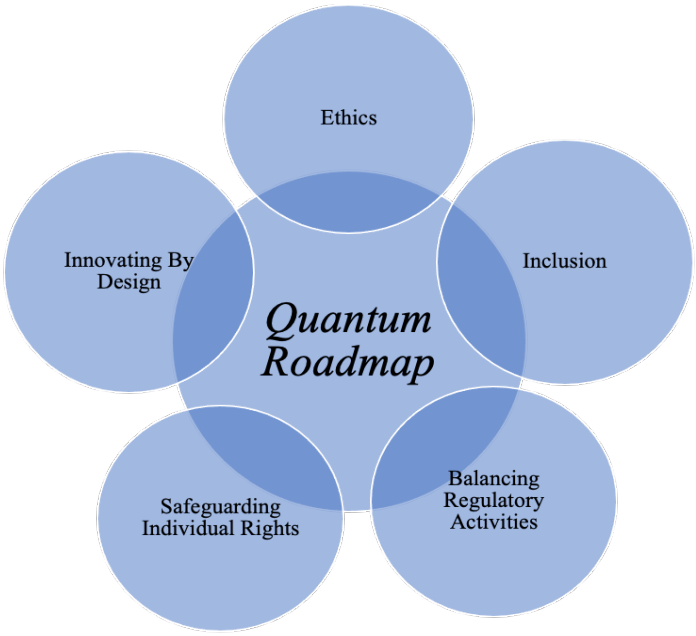


Figure 2. Quantum Roadmap – Law, Economics, Sustainability, and Society – comprises five basic guiding principles towards a bright quantum future.

Even though legislation and ethics frequently interrelate and align, ethical standards are never a supplementation or replacement to legal measures. In particular, ethics alone is not adequate when regulating high-risk dual-good technologies. Nevertheless, ethical aspects *do* provide a valuable direction to construct a legal framework for society. A near-future example of arising ethical issues is the dual-usage of quantum technologies referring to the aspect that the given technology can be employed in both military and in the commercial sphere.[16] Like all technologies, quantum technologies can be applied within contrasting ethical points of view. For example, the benefits of quantum metrology and sensing can improve the sensitivity of scientific apparatus, paving the way to unravel the mysteries of the Universe, but also have real-life applications in satellite systems, such as improving the current global position system. On the other hand, these benefits can be easily geared for military purposes. For instance, improvements in telescopy for astronomy with long-baseline interferometry would be a similar use "for good" as improvements to X-ray astronomy aided by a quantum-boost, but each would have very different applications when harnessed for military purposes, which might be damned as “evil” in some contexts.

Another ethical risk is increased inequality via winner-takes-all effects, yielding a “quantum divide” during the introductory phase. Subsequently, we may result in an ethical quandary, where we need to ponder the general benefit in respect to the social-ethical justification of immaterial rights, like the sharing of the quantum fruits stemming from better medical diagnostic tools such quantum-enhanced tissue imaging. In general, all broad application areas of quantum technologies should be realized in a social, sustainable manner, and in a fashion of preventing harmful impact on the environment, society, and humanity. Following this path, new technologies can assist us to resolve some of the current key problems, such as tackling climate change by

[16] See, for instance, Michal Krelina, ‘Quantum Technology for Military Applications’ (2021) EPJ QUANTUM TECHNOL. 8, 24).

designing greener materials and energy solutions thanks to the simulational power of a quantum computer.

When it comes to the ethical issues regarding the uprising of new technologies in a society, we do not start out of nothing. There has been a lot of discussion on ethical rules for different technologies, which has paved the way to modern generic ethical guidelines. Every field and industry nevertheless has its own special traits and characters; surprisingly the society has relatively recently woken-up to consider the ethical aspects of quantum circumstances.[17] However, since society is in a constant flux, the ethical norms are thus expected to be dynamic and contextual: the exact quantum-tech regulations will always be a product of their time following the current trend of the applications and implications of the given technology and contemporary understanding of ethics. We thus see that the legal-ethical framework has to be agile and updated with regular intervals.

The ambition of the inclusiveness is to prevent various risks of increased inequality, e.g., stemming from the monopolization through immaterial property rights, and a quantum division during the commercialization phase, which holds both companies as well as countries. Furthermore, it aims to integrate our democratic values into the social-ontogenesis of new quantum technologies, which, for example, requires educating the general public on quantum-related technologies. For commercial players, a further motivation to this direction is that technology which has gained the trust of the people has a significant market advantage. In general, it raises a question what role the public and the private sector involvement and funding should play, and at which stages. For instance, there might be a reason for public authorities to prohibit or to restrict access to some part of the technology, e.g., because of dual-usage and mitigating security risks, or of moral and public grounds. On the other hand, social-ethical reasons may lead to prioritizing the greater good over the benefits of the rights of individual private actors.

It is of the utmost importance to find the regulatory balance, ensuring the functionality of society while not smothering the evolution and integration of quantum technologies. Some people see the quantum possibilities as miraculous to be shared openly, others are demanding strict control on the usage. For most part, neither of these extremes is desirable; only by finding a regulatory balance between freedom and control can we take advantage of the new emerging quantum technologies in the most beneficial ways to the whole society. In other words, the regulatory actions should be guided by the Aristotelian-like philosophy on the excess and deficiency: balancing legal development, legal rights and obligations, public good, and incentives to innovate as well as to safeguard the progress of technological development.

To initiate this process for emerging quantum technologies, we herald conceptual and legal assessments of what level of regulation is in order and, if needed, provide a public, transparent cornerstone for any new regulatory framework. The possible tools vary from self-regulation to primary regulation by their financial regulators. However, due to the extraordinary potentials and possibilities of the quantum imperative, it is likely that there will be a quantum-specific framework regulatory environment. Furthermore, we see that there will be restrictions on export

[17] See for instance, M. Kop,' Establishing a legal-ethical framework for quantum technology' (2021) Yale Law School, Yale Journal of Law & Technology (YJoLT), The Record.

and import on quantum technologies and knowledge, such as quantum computing and metrology, motivated by the dual-good nature and national interest. In contrast, an establishment of quantum internet will most likely entail an international collaboration and agreement on the common playbook.

Of course, there is always the option of not regulating, particularly in the absence of a demonstrated, compelling public need. As demonstrated by highly concentrated social media platforms, the social harms easily arise from an unregulated operation of ubiquitous technologies such as quantum computing and communication. Therefore, international consent is required to establish framework rules governing aspects such as, dual usage, immaterial property rights, export restrictions as well as international safety and security. Although some initial steps have been taken,[18] contemporary legal frameworks are inadequate to cover quantum technologies. The current non-legally binding agreements, such as Wassenaar Arrangement[19], are not sufficient for securing international peace and security, thus we propose to initiate international conversations towards legislative actions. We want to emphasize that there is particularly a pressing demand for an international regulatory framework for the employment of quantum technologies in the society-wide global context. This urgently calls for deepening transatlantic collaboration, engaging in dialogue, and initiating an international legal framework.

At the current age of information, a central question has been who is allowed to utilize data and what kind of, i.e., where lies the boundary of the privacy of personal data, but this issue is also relevant for the future quantum technologies. For example, in the coming decades, a fusion of quantum technology and artificial intelligence may open a new chapter in data science.[20] As regards, for instance, quantum-boosted artificial intelligence and machine vision can be employed to categorize data, to track patterns, to benefit process development, and to make more accurate forecasts.

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[18]See for instance some examples of intergovernmental friendly agreements and research partnerships on quantum technologies, (FI-USA), Press Release, U.S. Dep't. State, Joint Statement of the United States and Finland on Cooperation in Quantum Information Science and Technology (Apr. 6, 2022), U.S. DEP'T. STATE https://www.state.gov/joint-statement-of-the-united-states-and-finland-on-cooperation-in-quantum-information-science-and-technology/ (Apr. 6, 2022); ;(AU-USA), Press Release, U.S. Dep't. State, Cooperation in Quantum Science and Technology Joint Statement (Nov.17, 2021), U.S. DEP'T. STATE, https://www.state.gov/cooperation-in-quantum-science-and-technology-aus;(SWE-USA) https://www.quantum.gov/the-united-states-and-sweden-sign-quantum-cooperation-statement/ (Nov. 17, 2021).; (UK -USA) Press Release, White House, The United States and United Kingdom Issue Joint Statement to Enhance Cooperation on Quantum Information Science and Technology (Nov. 4, 2021), WHITE HOUSE https://www.whitehouse.gov/ostp/news-updates/2021/11/04/the-united-states-and-united-kingdom-issue-joint-statement-to-enhance-cooperation-on-quantum-information-science-and-technology/. (UK-SWE) Press Release, Dep't Bus, Energy & Indus. Strategy George Freeman MP, New joint statement between UK and US to strengthen quantum collaboration (Nov. 4, 2021), GOV.UK https://www.gov.uk/government/news/new-joint-statement-between-uk-and-us-to-strengthen-quantum-collaboration. See also, for instance, the National Quantum Initiative Act in the USA, 115th Congress Public Law 368, *https://www.congress.gov/bill/115th-congress/house-bill/6227/text* (December 21, 2018).

[19] Wassenaar Arrangement on Export Controls for Conventional Arms and Dual-Use Goods and Technologies, https://1997-2001.state.gov/global/arms/np/mtcr/000322_wassenaar.html.

[20] Xing-Dong Cai et al., *Entanglement-based Machine Learning on a Quantum Computer,* 114 Phys. Rev. Lett. 110504, 110504-110507 (2015); Maria Schuld, Ilya Sinayskiy & Francesco Petruccione, *An Introduction to Quantum Machine Learning*, 56 Contemp. Phys. 172, 172-185 (2015); Maria Schuld, Ilya Sinayskiy & Franceco Petruccione, *Prediction by Linear Regression on a Quantum Computer,* 94 Phys. Rev. A 022342, 022342-022348 (2016); Jacob Biamonte et al., *Quantum Machine Learning*, 549 Nature 195, 195-202 (2017).

Moreover, it is speculated that quantum-enhanced artificial intelligence can play a major role in the rise of autonomous decision making. Nevertheless, quantum data utilization should not violate human rights, oversight with the right to an explanation, and the rights of humans with respect to artificial intelligence. The principle of safeguarding individual rights should be methodically embedded in the existing and future regulatory structures. For example, we want to ensure that the design and establishment of different data sets will follow this underlying value.

The future quantum applications and innovations can be expected to comply with the legislation on data protection, governance, and privacy. However, it is currently unknown to what extent we can rely on current and emerging regulatory frameworks. This privacy issue culminates in the matter of cybersecurity where one must switch eventually to new quantum-proof encryption standards as quantum computers scale up. As quantum technologies mature, we should ensure that the legislation fosters open-datasets transparency, comprehensibility, and also improves privacy as well as safeguards recognized individual rights by providing an equal access to technologies, impeding discriminatory practices and supporting democratic principles, such as the European three pillars consisted of freedom, democracy, equality and the rule of law promoting peace and stability. Like with balancing the regulatory actions, it remains to be seen whether the current incentives are enough for the field itself to take the precautionary step, or if a governmental nudge is required to motivate its reformation.

A pivotal question is what type of innovations we want in the future. First, when we investigate, develop and design quantum technology, academia plays a central role and is a good medium to initiate the quantum debate. Researchers do have the duty to steer research and innovation; various risks, legal gaps, ethical questions, societal implications, and other unknown ramifications associated with quantum technologies should be factored in. Prospective practices should be designed and tested. Subsequently, insights should be shared and disseminated openly within and outside of the academic community. On the other hand, quantum technologies that have gained the trust of the general public can have significant marketing advantages, boosting further the development and commercialization.

Side by side with academia, a public sector needs to step in. For example, governments and governmental institutions can bring the quantum community together, which instead can forecast future trends of quantum technology evolution for the service of the public. With this information, the public sector can become more aware of risks and engage in potential benefits related to quantum technologies. Moreover, it enables the public sector to set up quantum-targeted strategies and policies to steer the progress into the right direction, to maximize the social benefit of the technology. This also enables governments to found new specialized public institutes to offer legal-ethical guidance on the current possibilities associated with the development and usage of quantum technologies from the public point of view. The public sector should also have healthy dialogue with the private sector to establish a pathway for commercial innovations.

In consequence, we can ask what type of intergovernmental governmental and public ties the emerging technology requires to achieve a bright quantum future. For example, if the development of such basic research is carried out or supported by public funding, the fruits could be then shared accordingly. This could mean that the

fundamental research results should be announced as open access to be utilized, and the commercialization from academia could take place via licensing to prevent the centralization of the crucial quantum innovations on one player, like on an individual university. This kind of proactive involvement of the public sector could be also a first step towards establishing industry-wide hardware standards which further stimulate technological evolution on a broader front, e.g. to lure smaller, new players into the quantum play. Therefore, along with the legislational route, an effective regulatory tool is to control the flows of (public) funding to design socially and ethically equitable quantum infrastructure without sacrificing the evolution and integration of the technology. Furthermore, it is important to see synergy formed by the symbiosis of academia and the commercial sphere, where money and other resources can be fed back into basic research and further development of quantum technologies for commercial applications. This will ensure a technological pre-eminence in the longer term and boost morale and dedication in the fields of fundamental science.

As elucidated above, the necessity of updating the legislation is a multifaceted and complex challenge. Though, the presented classification of our Quantum Roadmap can assist to operate and acknowledge different standings in the post-quantum legal landscape where different actors, such as sovereign states or multinational companies, have varying incentives. The five principles are intended to support the relevant governmental agencies and institutions, the elected representatives as well as the quantum industry members alike to orient in the post-quantum era. In an ideal case, the principles will guide them to establish a solid foundation for taking actions towards the future society of quantum. The most salient conundrum is to obtain regulatory equilibrium within quantum technologies, namely, to safeguard the functionality of society while not impeding or hindering the development, integration, and evolution of it. At the end of the day, the foundations of a functional and respectful society are enforceability, effectiveness, stability, predictability, and transparency. Nevertheless, the time to act is now as we are already entering into a new age of quantum!

III. ACTION: NAVIGATING TOWARDS A BRIGHT QUANTUM FUTURE

By knowing the" bigger picture", we can take steps to ascertain the functionality and gain of society, while not smothering the evolution and integration of quantum technologies. In practice, success, most likely, requires a strategy plan with concrete steps for how to incorporate these technologies to fully capture the commercial opportunities, and to deliver maximum benefit to society at the same time. For example, one of these measures can be to launch a fleet of mission-driven flagships to solve industrial and societal challenges related to the embodiment of quantum technologies. Naturally, our legislational environment needs to be ready for the upcoming quantum change. For instance, the immaterial property right framework could encourage commercialization as well as accessibility. In the long run, there may be a necessity for an international framework to ensure the coherence and the optimal functionality of the global quantum community in respect to the values presented in Quantum Roadmap.

Quantum technologies present challenges in terms of both shared development and governance. Companies and nations are cooperating and in competition, or what has been described as "co-opetition," referring to when stakeholders can gain through working together, but are also in fierce competition and must balance the risks of over-

exposure, protecting security or trade secrets.[21] In contrast to the Cold War, when Western and Soviet-aligned nations had entirely different economic, political, and security institutions – such as the European Economic Community and NATO, or the Soviet-aligned Council for Mutual Economic Assistance (Comecon) and Warsaw Pact – nations today are closely linked, even when they have extensive divisions. The new competition between the United States, Europe, and China for example is fundamentally different, with integration. Economies have much more integration, there are more exchanges of citizens, and many shared interests.

Co-opetition is possible when both parties can gain without putting critical factors at risk, or the two parties together can gain an advantage over others. The key is in how partnerships are structured. The task is to manage these tensions and be proactive, to ensure benefits and manage risks. and we may need new institutions and processes. Naturally, our legislational environment needs to be ready for the upcoming quantum change. For instance, the immaterial property right framework could encourage commercialization as well as accessibility. An international framework will be required to ensure the coherence and the optimal functionality of the global quantum community in respect to the values presented in Quantum Roadmap.

This may be achieved by creating an architecture of the system.[22] Currently legal, economic, political, and security issues are negotiated through international bodies like the United Nations, World Trade Organization, regional bodies like the European Union, academic societies, and Non-Governmental Organizations such as ICANN. These are voluntary, and their formation is led often by a smaller group of powerful actors.

On the other hand, quantum-safe data transfers and storage are closely entangled with the security and defense field. Most likely, there will be a demand for a new intergovernmental legal rule framework and surveillance in certain research areas of quantum computing to ensure worldwide security. In particular, regulations need to cover data privacy, and access for government authorities such as law enforcement, shared governance of quantum internet, managing norms around cyber-attacks, developing solutions to shared challenges such as climate change, and establishing a common language and terms among all three sectors. These have been significant challenges for the United States and China, and quantum computing provides an opportunity to form new institutional arrangements for a fundamentally new technology. These could take the form of new voluntary bodies modeled after the World Trade Organization which have governed challenging economic issues, or the Internet Corporation for Assigned Names and Numbers which has facilitated cross-national governance of the internet.

A solution could be to establish a legal collaborative framework for “Mandatory Reporting and Supervision” to ensure international peace and security. For instance, this could be realized as a form of a Security Council or of a Union of Sovereign States - committing to the same goals on security and sustainability. The operations and accomplishment of the goals should be overseen equally by all the coalition members,

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[21] Brandenburger, Adam, Barry Nalebuff. “The Rules of Co-opetition.” (2021) *Harvard Business Review*.

[22] Mazarr, Michael J, and Tim McDonald. “Competing for the System: The Essence of Emerging Strategic Rivalries.” PE-A1404-2. (2022) *RAND Corporation*.

and the power should not be centered upon a few selected parties. Ideally, these member states should represent comprehensively sovereign states - not just a few powerful ones - but more equally the sovereign states of the world. The more equal standing of the sovereign states in this possible "Mandatory Reporting and Supervision Body" would allow actions to be taken with less political and historical impact, that is quite the opposite, for instance, to the unfortunate situation with the United Nations Security Council (that is mostly comprised of the War winning countries). The historical burden and political impact have frequently caused the United Nations Security Council to be toothless in taking appropriate measures and actions in reply to threats on international peace and security. Often, a mere "condemn" is insufficient to resolve the incidents occurring at the international arena. The former challenges with international organizations and supervisory bodies should be converted into knowledge for anticipatory and precautionary practices. Therefore, we could learn from the past to ensure the future peace and security.

However, it is challenging to foresee the future development of all different quantum technologies, and the underlying incentives do not help in estimations, as it is not always in the best interest of operators to fully, accurately and in real to reveal what is their progress within these technologies. Their development is also impacted or supported with other technologies, and thus how one specific technology will come up, depends on various different factors. Therefore, it is not in the scope nor the intention of this paper to advocate designed guidelines for specific quantum technologies based on ambiguous estimations of what the future will hold. Nevertheless, we can recognize some whole-field-broad trends, like the hastening emergence of the technologies itself. As it currently stands with different branches of quantum technologies, we herald the urgency to ignite the discussion about taking anticipatory measures that ideally would follow the quantum roadmap reasoning presented earlier in this paper.

In general, our vision about a bright society of tomorrow is founded upon broad scientific capabilities in a coordinated symbiosis with the tech industry to push the cutting-edge quantum technologies forward. At the same, we see an importance to deepen the dialogue within the trinity of industry, academia and government so that social-level actions are taken in the 'right' direction. In the process, a virtuous circle may be set up. Public and private funding stimulates basic research yielding blooming quantum hubs and eventually connecting into a thriving quantum ecosystem. On the other hand, some money will flow back into research to generate more knowledge we can transform into further advantageous innovation[23] , and into more benefits to society.

CONCLUSION

The anticipated benefits of quantum technologies are already upon us! As we are entering into the new quantum era, the whole legal sphere with governmental authorities, institutes, and commercial operators should reflect upon the legal significance of quantum. Unequivocally, quantum innovations will have a system-level

[23] J. A. Schumpeter, R.V. Clemence and R. Swedberg, *Essays: On entrepreneurs, innovations, business cycles, and the evolution of capitalism* (Routledge 2017).; Joseph Schumpeter, Joseph, *The theory of economic development: An inquiry into profits, capital, credit, interest and the business cycle* (Harvard Economic Studies, trans. Redvers opies, v. 46: 66-68, 1934).; K. Śledzik, 2013. *Schumpeter's view on innovation and entrepreneurship* (Management Trends in Theory and Practice, (ed.) Stefan Hittmar, Faculty of Management Science and Informatics, University of Zilina & Institute of Management by University of Zilina 2013) 89-94.

impact: a new quantum-boosted society requires a new legal order. For this purpose, this paper has introduced an approach on addressing quantum opportunities and challenges to society.

The paper is divided into three sections. It follows the proposed ideal manner of approach on quantum technologies, namely *the A-cubic approach - awareness, analysis, and action.* We try to recognize the best characters so that the flourishing new technology will maximally benefit the whole humankind and how we can avoid possible pitfalls on the way toward a bright quantum future. However, this process is ongoing by its nature and learning is a continuous path; we do not offer complete, fool-proof solutions, but encourage further discussion and debate.

In the first section of the paper, we presented the framework of awareness, discussing the basics of quantum computing and some other promising quantum technologies. In the second section, we introduced analyses in the context of the applications and implications from quantum in relation to law, economics, and society. In the third section, and last section of the paper, we proceeded discussing calls for actions, and the incentives and benefits to take advantage of quantum technology in various settings in society.

Further, we have put forward our Quantum Roadmap aiming to provide sustainable and ethically conscious policy guidance in a solution-centric manner for various operators with varying incentives. We discussed every suggested Quantum Roadmap principle and their practical implementation in detail. The paper ended with motivation for further discussion and academic research on the area of quantum technologies with the message: the time is ripe for awareness, analysis, actions!

"THE HANDS THAT PICKED COTTON": RACE DISCRIMINATION AGAINST MISSISSIPPI DELTA'S SHARECROPPERS DURING THE JIM CROW PERIOD FROM 1896-1965

Eyphra Ransom*

Abstract: This manuscript presents material from diverse sources, enhancing our understanding of race discrimination against Mississippi Delta sharecroppers. Applying Professor Derrick Bell, Jr.'s "interest convergence" principle to slaves and sharecroppers, for hundreds of years, enslaved people were kidnapped from their native homes and sold to wealthy slave owners. They were forced to do exceptionally physically demanding work in America and other countries and live in inhumane conditions. Once the international slave trade ended and slavery in America ended, sharecroppers were still exploited just as slaves had been. Even after planting and picking cotton became mechanized, the sharecropping system remained popular in the Mississippi Delta for many years. Plantation owners continued to earn massive profits from sharecroppers' cheap labor. White interests wanted sharecroppers to make just enough to subsist to prevent them from improving their condition by purchasing and growing their crops. Under Professor Derrick Bell, Jr.'s interest convergence principle, Mississippi Delta sharecroppers did not achieve racial equality following slavery because the interests of whites did not converge with the interests of blacks.

Keywords: Mississippi; Civil Rights; Jim Crow; Sharecroppers; Discrimination; Race

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INTRODUCTION

Barack Obama's inauguration as America's first black president will be a magnificent moment in the decades-long race for civil rights, both in America and around the world. For so many, Barack represents hope against cynicism. Expectation rides high for his success in leading us out of global war and recession. People trust him to restore the democratic values of America. He symbolises [sic] redemption in the face of a sordid past. It's the dawning of a new era.

On Tuesday, Barack will stand on many famous shoulders - Mahatma Gandhi, Dr. Martin Luther King and Nelson Mandela - but also the millions of nameless, faceless people who made his victory possible. His inauguration will be celebrated from villages in Kenya to neighbourhoods in Kansas.

It is a victory that reflects the times and gives inspiration to the times. Barack's election is the expression of the idea of a grand, multiracial gathering. This coalition believed that together we could win what separately we could not. The figures are astonishing. On 4 November last year, the coalition included 95% of the African-American vote, two-thirds of the Latino vote, two-thirds of the youth vote. Barack won huge majorities among Asian Americans, Native Americans and among Jewish voters and Arab-American voters. There were big wins among union voters, gay and lesbian voters, single women and "secular" voters.

This victory took decades to cultivate. It could not have happened in an earlier America; certainly not before 1954, when the wall of legal segregation kept us divided, ignorant and fearful. Think of the black veterans coming home from the second world war, successfully demanding the integration of the armed forces. Or the 1954 Brown vs. Board of Education case that finally ended centuries of legal segregation. Or Rosa Parks in 1955 refusing to go to the back of the bus. Or Dr. King emerging to lead the Montgomery bus boycott. Or the Little Rock Nine breaking through the walls of school segregation in 1957. Or Dr. King rallying millions on the steps of Washington DC, demanding jobs and healthcare, a "dream" for all America in 1963, which led to the passage of the Civil Rights Act. Or the Voting Rights Act in 1965. My rainbow presidential campaigns of 1984 and 1988 were a link in this unbroken chain. Hands that once picked cotton now pick presidents. It's a new day and a new way for America.[1]

As a person who is the first generation of my family not to sharecrop, Jessie Jackson's words are significant to me. Growing up, I remember hearing stories of my family's life on the plantation in the Mississippi Delta. I learned a great deal more when I began the task of researching my family history. My grandfather, Arthur Ransom, II, a lifelong sharecropper, rose to the highly trusted foreman position. My mother told me that was only after many years. As far as we know, he only had a third-grade education because that's how far his brother went in school before he, too, dropped out to pick cotton.[2] That fits with him telling me early one summer morning as we stood in the kitchen that his mother first let him have coffee when he was eight. She knew he would need it to sustain him through a long day of picking cotton from sun up until sundown.

My grandmother, Jessie Mae Lynn Ransom, was a lifelong third-grade teacher

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[1] *Id.*

[2] Ransom Family History (Sept. 24, 2013) (interview notes) (on file with author).

and secretary of the church where my grandfather was a deacon for over 60 years. Oak Grove is a tiny country Missionary Baptist church where my family has been members for five generations. My great-grandfather's name is on the stone from the first Oak Grove because he was a founding member. I assume Oak Grove is how my grandparents met and eventually married. My grandmother taught school and was a licensed cosmetologist who did hair and sold Avon. She and my grandfather's sister made lunch plates and sold them to the sharecroppers. Because my grandmother taught school, she did not have to pick cotton. While my grandmother did not pick cotton on the Mound, she sharecropped on Kinlock, where she was reared before she married my grandfather. In addition, my mother and her siblings all picked cotton.[3] Cotton was king.

My grandmother's vision and work enabled the family to purchase the family home after the tornado came and destroyed B.A. Wright plantation, where my family sharecropped.[4] How my grandmother made up her mind to be as great as she was, I do not know. Her mother passed when she was two, so my great-great-grandmother reared her and her brother.[5] I marvel at my grandmother's strength and wisdom. Most older members of my church at home, who also grew up sharecropping with my mother, began working at local warehouses and factories once they finished high school after the tornado.[6]

It's because of my grandmother's initiative and sacrifice that my mother and her siblings had the opportunity to attend college after they graduated high school instead of starting warehouse and factory jobs, or possibly even being maids, as my grandmother's half-sisters were, and that has made all the difference in the Ransom family.[7]

I think it's safe to say I learned the value of education. As I sit here typing this introduction, I am a third-year evening law student at the University of Baltimore School of Law. I made sure to complete my M.B.A. in Management before I left Mississippi.[8] I take pride in how far my family and the other sharecropping families have come. I remember my mom calling me the night the totals came in, and CNN projected that Barack Obama would be President. We made sure we voted and encouraged everyone we knew to vote. I was still in Mississippi but not living in the Delta.

I made a trip home to vote. Because the hands that picked cotton and the descendants of the hands that picked cotton now pick presidents.[9]

I. SLAVERY AND THE SHARECROPPING SYSTEM IN AMERICA

A thriving and callous economy known as the "Middle Passage" developed around enslaving and transporting millions of Africans across the Atlantic Ocean over

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[3] *Id.* at 6.
[4] *Id.* at 3.
[5] *Id.* at 12.
[6] *Id.* at 3.
[7] *See infra* Part VI.
[8] Ransom, *supra* note 3, at 6.
[9] Jackson, *supra* note 1.

four centuries.[10] August of 1619 marked the beginning of chattel slavery in America for the next 250 years when a ship appeared near Point Comfort, a Virginia coastal Virginiatown colonists purchased 20-30 enslaved Africans on that ship from English pirates just 12 years after they settled in Jamestown. The English pirates had stolen the slaves from a Portuguese slave ship that removed them against their will from present-day Angola.[11] Although America was not "America" yet, slavery had begun.[12]

As a result of slavery - and the racism it required – America received almost everything that has made it genuinely exceptional: its legal system and the endemic racial fears and hatreds that continue to plague it today; its slang; the example it sets for the world as a land of equality and freedom; its astounding penchant for violence; the inequities of its public education and health; its electoral system, diet, and popular music; its industrial power; its economic might.[13]

A. Slavery in America

Those 20-30 men and women whom the English pirates sold were among the 12.5 million Africans who would be kidnapped from their homes and taken in chains across the Atlantic Ocean in the largest forced migration in human history before World War II. Almost 2 million did not survive the Middle Passage.[14]

Four hundred thousand Africans were sold into America before the abolishment of the international slave trade. These slaves and their descendants transformed the areas where they lived into some of the British Empire's most successful colonies. They cleared the land in the Southeast by back-breaking labor. They showed the colonists how to grow rice. They grew and picked cotton, America's most valuable commodity at the height of slavery. They constructed the plantations of George Washington, Thomas Jefferson, and James Madison. Today, these grand properties attract thousands of visitors from around the world. They laid the foundations of the Capitol and the White House. They pulled the heavy wooden tracks of the railroads that traversed the South and helped transport the cotton they picked to the Northern textile mills, influencing the Industrial Revolution. They created substantial fortunes for whites in the North and the South – a Rhode Island "slave trader" was once the second-richest man in America. Profits from slaves' stolen labor helped a young America satisfy its war debts and financed the construction of some of our most prestigious universities. Wall Street became a thriving trading, insurance, and banking sector in New York City and the world's financial capital by consistently buying, selling, insuring, and financing slaves' bodies and the products of their labor.[15]

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[10] History Channel, https://www.history.com/news/transatlantic-slave-trade-facts (last visited on May 6, 2023). The Middle Passage refers to a "cruel and thriving economy" that developed based on enslaving and transporting millions of Africans across the Atlantic Ocean over the course of four hundred years. *See also infra* Part II.A.

[11] Nikole Hannah Jones, *The 1619 Project*, at 4. N. Y. Times Magazine, Aug. 18, 2019. For more information on slavery, *see also infra* Part II.A. Slavery in America; *infra* Part III.B. Slavery in the Mississippi Delta; *infra* Part V.A.1. General Effects of Discrimination During Slavery, Reconstruction, and Jim Crow – Slavery.

[12] Jones, *supra* note 12, at 16.

[13] *Id.* at 3.

[14] *Id.* at 4.

[15] *Id.* at 16.

It would be historically inaccurate to reduce the slaves' contributions to the massive material wealth created by their bondage. Struggles for black rights opened the door for every other rights struggle, including women's and gay rights, disability, and immigrant rights. Without black Americans' patriotic, optimistic, tireless efforts, our democracy would look very different – or it may not be a democracy at all. Black Americans have fought in every war America has waged. Moreover, we are the most likely of all racial groups to serve in the United States military today.[16]

The Middle Passage was the middle leg of a three-part voyage that began and ended in Europe. The first leg voyage's cargo often included iron, cloth, brandy, firearms, and gunpowder. Upon landing on Africa's "slave coast," the cargo was exchanged for Africans. Fully loaded with its human cargo, the ship set sail for the Americas, where the slaves were traded for sugar, tobacco, or some other product. The final leg brought the boat back to Europe.[17]

B. The Sharecropping System in America

As a result of the upheaval of the Civil War and Reconstruction, Delta planters the reality of their reliance on a large black labor force suddenly free to exercise its newfound economic leverage and recently acquired political rights. By the turn of the twentieth century, rising land prices, disenfranchisement and a socially and legally imposed redefinition of sharecropping[18] had effectively reduced sharecroppers to wage laborers that enabled Delta planters to regain control of them.[19]

II. SLAVERY AND THE SHARECROPPING SYSTEM IN THE MISSISSIPPI DELTA

A. The Mississippi Delta

Although the Mississippi Delta[20] is often described as beginning "in the lobby of the Peabody Hotel in Memphis and ends on Catfish Row in Vicksburg," the Mississippi Delta refers to the Yazoo-Mississippi Delta, the typical flood plain of the Yazoo and Mississippi rivers.[19] The Yazoo-Mississippi Delta is one of the Mississippi River's many basins and is more oval or diamond than deltoid in shape.[21]

The Delta's western boundary is formed by the Mississippi River that runs southeastward from Memphis to Greenville and bends slightly eastward toward Vicksburg. A line of bluffs running from south to Greenwood and then southwest along the Yazoo River define the Delta's eastern boundary. Some of the bluffs are as tall as 200 feet high. The Yazoo-Mississippi Delta is approximately 200 miles long and 70

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[16] *Id.*
[17] PBS, https://www.pbs.org/wgbh/aia/part1/1p277.html (last visited Apr. 22, 2023).
[18] History Channel, https://www.history.com/topics/black-history/sharecropping (last visited May 6, 2023) Sharecropping is a type of farming in which families rent small plots of land from a landowner in return for a portion of their crop, to be given to the landowner at the end of each year. See *infra* Part III, Slavery and the Sharecropping System in the Mississippi Delta, Part IV, The Failure of Anti-discrimination Laws to Protect Mississippi Delta Sharecroppers, Part V, The Persistent Effects of Discrimination Against Slaves and Sharecroppers in the Mississippi Delta, and Conclusion.
[19] JAMES C. COBB, THE MOST SOUTHERN PLACE ON EARTH, vii-viii, Oxford University Press, Inc. (2016).
[20] *See Appendix* #1, Map of Mississippi. *Id.* at 3.
[21] COBB, supra note 20, at 3.

miles across at its widest point. The actual size of the Delta is about 7,110 square miles.[22] The Delta has been described as "an overwhelmingly flat land, unrelenting heat and unrelieved by shade, and scabrous, rural poverty."[23]

Although it appears flat to the naked eye, the Delta's surface is the result of centuries of sedimentation and flooding by the Mississippi River and its tributaries. It slowed during floods and lost more of its suspended soils to its expanded bed. Its initial losses were its coarser, heavier soils, which accrued near the regular river bed, while the lighter, finer particles were not placed until the flood waters reached further inland.[24] The Mississippi River waters usually swelled by quickly melting snows in the area to the north in late winter and spring, causing the Yazoo River waters to rise before white settlers had time to subdue the river with levees.[25] As a result, the surrounding lowlands were flooded. This triggered a smaller-scale flooding effect along the Yazoo River's backed-up feeder streams. With over half of its rainfall occurring from December through May when the Mississippi River and its tributaries were already most likely at their highest levels, flooding and the accompanying deposit of fertile organic matter was part of a natural, recurrent cycle of life within the Delta.[26] As the centuries passed, the Delta's soil only grew richer.[27]

B. Slavery in the Mississippi Delta

1. 1830-1860

By 1830, Washington County's population was 1,976 – 1,184 of which were slaves.[28] By 1850, this ratio swelled to 14.5 enslaved people for every white person. Of 19 planters who held more than 100 enslaved people in 1855, 10 had fewer enslaved people, with 50 enslaved people in 1838. Throughout the Delta, slaves outnumbered whites by 5 to 1 in 1850.[29]

Bolivar County followed a similar economic development and settlement pattern in the Delta as Washington County. While its population grew significantly in the 1840s, it expanded dramatically in the 1850s. By the 1850s, Bolivar County's white population increased by 253%, as most of the whites who came to Bolivar County were born outside of Mississippi.[30]

Many of the Delta's native planters were not native Mississippians. In 1860, only eight of 20 Issaquena planters worth more than $100,000 were born in Mississippi. This pattern was even more distinct in Coahoma and Tunica, where each such planter was not originally from Mississippi.[31]

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[22] *Id.*
[23] June Jordan, *Mississippi 'Black Home*,' The New York Times, (Oct. 11, 1970), https://www.nytimes.com/1970/10/11/archives/mississippi-black-home-a-sweet-and-bitter-bluesong-mississippi.html.
[24] COBB, supra note 20, at 3.
[25] *Id.* at 3–5.
[26] *Id.* at 5.
[27] *Id.* at 5.
[28] *Id.* at 8.
[29] *Id.*
[30] *Id.*
[31] *Id.*

Delta planters also had a downside to consider. In addition to financial risk and unpredictability, the climate was an ongoing concern. The usual large outlay in land and enslaved people required the land to be cleared, drained, and cultivated as extensively and quickly as possible. With the later starting date for planting in the Delta, picking could last well into January.[32] After the cotton was picked, there was usually time for a few weeks of clearing, repairing, and ditching before it was time to prepare for the next planting season. The demanding work routine combined with the Delta's susceptibility to malaria, dysentery, and many "fevers" of various strains contributed to the low life expectancy rate of Delta slaves.[33]

Observers generally agreed that the life of the enslaved person throughout the Delta was most challenging on large, absentee-owned plantations supervised only by overseers. About half of the plantations on the Mississippi River with 50 or more enslaved people fit into this category.[34] As a result, the overseer was a crucial figure on Delta plantations. Summing up the difference between the way a master treated enslaved people and how an overseer treated enslaved people, "You know when a man owned you he had to be careful not to kill you, or even bruise you, but the poor white overseer didn't own nothing and didn't have anything to loose [sic]."[35]

The overseer may be the only white person on an absentee-owned plantation.[36] For a yearly salary of about $450 in addition to housing, provisions, and, sometimes, a servant, the overseer was expected to nurture, supervise, and discipline the enslaved people, provide for the livestock, maintain the implements, and produce a bumper crop of grains and corn in addition to cotton.

Financially overextended planters did not hesitate to fire overseers who did not meet expectations.[37] Under these conditions, it was difficult for Delta planters to find effective overseers. With so much money invested in their slaves, Delta planters were understandably concerned about the health and mortality of their slaves.[38]

According to the Works Progress Administration (WPA)[39] slave narratives, while conditions varied from plantation to plantation, most Delta plantation enslaved people worked long, intense hours throughout the year while receiving little relief from their condition's emotional difficulties and physical rigors. Delta enslaved women were no less vulnerable to white men's advances than their other Southern counterparts.[40]

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[32] *Id.* at 21.
[33] *Id.*
[34] *Id.* at 22.
[35] *Id.* at 23.
[36] *Id.* at 24.
[37] *Id.*
[38] *Id.*
[39] *Id.* at 25.
[40] History Channel, https://www.history.com/topics/great-depression/works-progress-administration (last visited Apr. 9, 2023). The Works Progress Administration was an ambitious employment and infrastructure program created by President Roosevelt in 1935. Over its eight years of existence, the WPA put roughly 8.5 million Americans to work building schools, hospitals, roads, and other public works. The WPA also sponsored projects in the arts – the agency employed tens of thousands of writers, musicians, and other artists.

While enslaved people's direct, open resistance to whippings and other forms of punishment was sporadic, when it did occur, the rebellious slave considered him a hero.[41] Running was a widespread reaction to abuse and punishment.[42]

Delta plantation enslaved people developed and maintained a distinct community that functioned, as much as possible, as a cushion against slavery's potentially devastating effects.

Enslaved people warned other slaves of the impending overseer or master's approach. Enslaved people often worshipped, learned to read secretly, and stole [food] from the corncrib or smokehouse when they could. Although enslaved people were emotionally sustained by their strong sense of community, their white owners and overseers completely controlled the enslaved people's security and comfort. On the other hand, nowhere else in the antebellum South did whites depend more on black laborers.[43]

The slave and white populations of the Delta's six counties expanded significantly between 1850 and 1860. During this time, average farm real estate values per acre more than tripled in Bolivar, Coahoma, Issaquena, and Tunica counties. At the same time, the number of planters in Tunica, Coahoma, Bolivar, Washington, and Issaquena counties worth more than $100,000 increased from 14 to 81. By the end of the decade, Delta counties averaged 5.7 bales of cotton per enslaved person in contrast to 3.8 bales per enslaved person in the older river counties and 3.4 bales per enslaved person in adjoining counties with less fruitful soil.[44]

Based on the 1860 Census, 18.3% of the slaveholders in Bolivar, Coahoma, Issaquena, and Tunica counties held 50 or more enslaved people. Compared to the 16 slave states, only 2.8% of the slaveholders held 50 or more enslaved people, and the amount for the rest of Mississippi outside of the Delta was 5%. In that same year, 10 of 19 Mississippi planters who owned 300 or more enslaved people held plantations in counties situated wholly or partly in the Delta.[45]

By 1860, the average total wealth per freeman in Bolivar, Coahoma, Issaquena, and Tunica counties was $18,438 compared to $4,380 throughout the south. At $26,600, Issaquena was the nation's second-wealthiest county. Lee Soltow listed all four counties among the 36 wealthiest in the country for 1860. When Soltow factored out the slave-value component (at $900 per enslaved person and computed the wealth per adult male (free or enslaved person), the mean for these same counties fell to $1,623.[46]

With so much of their wealth concentrated in enslaved people and their credit and capital resources invested in clearing and improving their lands, Delta planters tempered their optimism with increasing concern as the slavery controversy grew more intense during the 1850s. With work commencing on its levy system and the influx of

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41 COBB, *supra* note 20, at 26.
42 *Id.* at 27.
43 *Id.*
44 *Id.* at 29–30.
45 *Id.* at 31.
46 *Id.*

settlers in the 1850s, the Delta's economy stood to suffer significantly from any action that might lead to war or disruption of regular commerce.[47]

2. The Civil War

In the 1860 election, only the Delta counties of Issaquena, Washington, Bolivar, Coahoma, and Tunica gave Southern Rights candidate John C. Breckenridge less than 50% of their votes. During the 1861 secession convention elections, only Issaquena chose a delegate who wanted immediate disunion, while the others chose representatives leaning toward secession along with the other southern states.[48]

There was "now no choice," observed another Deltan. Remaining in the Union would be "as great an evil as to secede from it." With the attack on Fort Sumter, most Deltans who had expressed their reservations accepted the inevitability of armed conflict. Across the Delta, local companies were raised, and drilling began. Women made tents and haversacks, knitted comforters and socks, and made clothes for the soldiers.[49]

The Yazoo Delta found itself at the frontline of the Confederacy after the Union commanders chose to emphasize the Mississippi River's strategic importance. Yet a mostly frontier wilderness, the Delta presented a formidable physical challenge to its invaders and defenders. The strategically important city of Vicksburg remained the only significant obstacle to the free run of the Mississippi River after New Orleans and Memphis fell to Union gunboats in the spring and early summer of 1862.[50]

Union troops were burning slave cabins, farms, gins, and plantations in Coahoma County by December 1862. Every home in the small town of Delta was burned. At times, planters could not distinguish friend from foe because Confederate troops were under orders to destroy all cotton likely to fall into Union hands, burning not only the cotton but also the gins and warehouses that stored it.[51] Gunboats from the Mississippi River could hit towns, landings, or plantations. Still, inland, they usually just transported troops who searched the surrounding countryside, torching what cotton the Confederates had not burned themselves and seizing whatever provisions, livestock, or other property they wanted or needed.[52]

With so many white men away fighting, the Delta planters' women family members took responsibility for managing plantations, controlling enslaved people, and addressing many unwelcome Yankee visitors. On the occasions Union soldiers entered the plantations, it was the plantation mistress's duty to defend the family's property however she could.[53] For example, Matilda Sillers, the matriarch of the Sillers family, hid what she could in the woods, led her family to an abandoned interior plantation, and essentially "made do" with what she had. With ammunition at twenty dollars per pound, the Sillers scavenged ammunition from unexploded shells. The Sillers survived by

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[47] *Id.*
[48] *Id.* at 32.
[49] *Id.*
[50] *Id.* at 33.
[51] *Id.* at 34.
[52] *Id.* at 35.
[53] *Id.*

eating sweet potatoes, sorghum molasses, cornbread, and meat from livestock they herded into the woods.[54]

For all the sufferings of Delta whites, the enslaved people usually bore the war's physical hardships most heavily. Ruben Laird recalled Union troops raiding the slave quarters where he lived and eating or destroying all the food they could after Confederate troops clogged the river with trees to hinder Yankees in pursuit. Lizzie Dunn remembered that while the Yankees were polite to the whites where she lived, "they et them out time and again."[55]

Delta planters like James Alcorn faced a choice between illegally selling their cotton, having it burned by Confederates, or confiscated by Union soldiers. As conditions in the Delta became more desperate, Confederate guerrillas regularly preyed on would-be smugglers by demanding a bribe to let the smuggler continue his illegal trade. By 1864, it was commonplace to see cotton sold to the Yankees.[56]

Slavery's demise wrought the most significant blow to Delta planters. Sixteen enslaved people rebelled against the overseer and quit Charles Clark's Doro Plantation on January 29, 1862. Several of James L. Alcorn's slaves went across the river to federally occupied Helena, Arkansas, where they often confronted their former owners. In June 1864, an enslaved person directed Union troops to two Delta plantations that housed Confederate troops. After capturing the Confederate forces, the Union later learned that local blacks had been aware of the Union entering the area for some time but had intentionally not told local whites of their presence.[57]

Many masters hid or evacuated their slaves. Milly Henry's owner told his slaves, "de Yankees am a comin' to take my slave 'way frum me 'n I don't 'pose dat dey am gwine ter do that. Fer them reasons we leaves for North Carolina day att termorrer an' I ain't gwine ter hyar no jaw 'bout hit." At the same time, many enslaved people refused to be evacuated.[58]

Many formerly enslaved people contacted by WPA interviewers were unaware they were free for some time. A former Bolivar County enslaved person claimed some blacks were free for three years before they realized it, and Reuben Fox of Coahoma County said it was almost four years after the war before he and his fellow slaves knew it.[59]

Several difficulties were involved in resuming planting cotton after the war ended. Besides the transition from slaves to free labor, equipment, stock, and, in some cases, housing was required. After neglect and destruction of the levees, farmland quickly reverted to swampland. Barely 10 percent of the Delta had been cleared by 1860, and by 1865, the Delta was scarcely distinguishable from the frontier wilderness that was present when the Delta's first settlers arrived.[60]

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[54] *Id.* at 36.
[55] *Id.* at 37.
[56] *Id.* at 37-38.
[57] *Id.* at 39-40.
[58] *Id.* at 41.
[59] *Id.*
[60] *Id.* at 43.

Despite these conditions, would-be planters like Henry Crydenwise saw not swampland and wilderness but the chance to make their fortune when they surveyed the Delta. Hearing estimates of yields of four to seven hundred pounds of cotton per acre, Northern investors flocked into the Delta. As a result, land prices drastically increased in late 1865 and early 1866. Postbellum Delta planters would have to contend with freedmen's efforts to use their highly in-demand services as laborers and mobility to pursue economic independence and resist resubjugation. The struggle between former masters and enslaved people to decide whose interests would prevail soon emerged as a significant influence on the Delta's political and economic developments during the early postbellum decades.[61]

C. Sharecropping in the Mississippi Delta

Capital scarcity and lack of credit encouraged freedmen and planters to enter sharecropping arrangements. Sharecroppers farmed a specific acreage of land in exchange for a share of the crop. The costs of food, clothing, and supplies were deducted from the crop.[62] After crops were sold, sharecroppers were supposed to receive an equal share of the profits; however, most of the time, they had borrowed against their share because they were not being paid a living wage. This resulted in them not receiving a lot after crops were sold. In turn, they were forced to continue sharecropping because they owed the farmer.[63]

Enslaved people and sharecroppers were a source of cheap labor for planters to grow crops that made them money. Enslaved people were also significant in other industries, like building railroads and working in factories and mines.[64] According to Professor Derrick Bell, Jr.'s "interest convergence" principle, blacks' interest in achieving racial equality will be accommodated only when it converges with the interests of whites. The Fourteenth Amendment alone will not grant a judicial remedy providing effective racial equality for blacks where the intended remedy threatens the middle and upper class's superior societal status. Thus, the availability of Fourteenth Amendment protection in racial cases may not be determined by the type of harm blacks suffered or the significance of liability proved against whites. Instead, racial remedies may be the outward expressions of unspoken and perhaps subconscious judicial conclusions that the remedies, if granted, will safeguard, advance, or at least not harm middle and upper-class' societal interests.[65]

Applying Professor Derrick Bell, Jr.'s "interest convergence" principle to slaves and sharecroppers, for hundreds of years, enslaved people were kidnapped from their native homes and sold to wealthy slave owners. They were forced to do exceptionally physically demanding work in America and other countries and live in inhumane

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[61] *Id.* at 45-46.
[62] *Id.* at 55.
[63] Telephone Interview with Muriel Ransom Pollard, AT&T Eng'r and Former Miss. Delta Sharecropper, in Indianola, Miss. (Mar. 6, 2023) (on file with author).
[64] BLACKMON, DOUGLAS A., SLAVERY BY ANOTHER NAME: THE RE-ENSLAVEMENT OF BLACK AMERICANS FROM THE CIVIL WAR TO WORLD WAR II, 1-10 Anchor Books (2008).
[65] Derrick A. Bell, Jr., Comment, Brown v. Board of Education *and the Interest-Convergence Dilemma*, 93 HARV. L. REV. 518 (1980). This Comment is a later version of a paper presented at a Harvard Law School symposium in October, 1978 to commemorate the 25th anniversary of *Brown v. Board of Educ*., 347 U.S. 483 (1954).

conditions. Once the international slave trade ended and slavery in America ended, sharecroppers were still exploited just as slaves had been. Even after planting and picking cotton became mechanized, the sharecropping system remained popular in the Mississippi Delta for many years. Plantation owners continued to earn massive profits from sharecroppers' cheap labor. White interests wanted sharecroppers to make just enough to subsist to prevent them from improving their condition by purchasing and growing their crops. Under Professor Derrick Bell, Jr.'s interest convergence principle, Mississippi Delta sharecroppers did not achieve racial equality following slavery because the interests of whites did not converge with the interests of blacks.

1. Reconstruction-1900

Meanwhile, freedmen continued to use planters' demand for their labor to gain more practical terms of employment. Not until the 1880s, when federally funded levee repair and privately financed railroad expansion sparked a population and land boom, did the Delta begin to reclaim its antebellum identity as the planter's undisputed domain.[66]

By the end of the 1880s, political discontent spread throughout Mississippi as the Farmer's Alliance movement took advantage of the increasing dissatisfaction of black and white farmers. At the same time, fear of a unified black majority taking political and physical control throughout the Delta grew. Rumors of an imminent riot by blacks swept across Coahoma County in January 1889. In September 1889, antiblack sentiment exploded in Leflore County from whites' increasing fear of a black takeover in the Delta.[67]

2. World War I

Planters desired to hold back the advances they issued to their sharecroppers to minimize their risks. During bad times, the sharecroppers' allowance shrank. Farmers thought it particularly prudent to keep early advances as low as possible since not even they could accurately predict the size of the upcoming crop or how quickly the harvest would proceed. By doing this, they decreased their possibility of loss, both from poor crops that may leave tenants unable to repay their debts or from sharecroppers who left before crops were harvested and settlements occurred.[68]

As a rule, regular advances occurred from March 1 to August 1, dates parallel to the period of soil preparation, planting, and cultivation. After that, they were lowered or curtailed altogether, and the payment received for cotton seed during the fall became the sharecropper's primary means of subsistence.[69]

Several planters filled their labor needs by "buying" black tenants' debts from other landlords. If tenants owned a mule or other implements, farmers were likelier to make such a purchase. Such a tenant required less financial support from the landlord, and his property could be attached if he attempted to move while indebted to the planter. For example, Walter Sillers, Jr.[70] received $483 for releasing a tenant who owned his

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[66] COBB, supra note 20, at 91-92.
[67] *Id.* at 85.
[68] *Id.* at 102.
[69] *Id.* at 102-103.
[70] *Id.* at 104.

mule. Many "debts" were fabrications of the bookkeeper or the planter, but an imaginary debt was as effective as a real debt in the Delta for restricting labor mobility given the questionable acumen of a black tenant's disputing a white planter's word.[71]

Delta planters were sometimes driven to what appeared to be extreme conciliatory methods to attract and retain the labor they required. Still, their paternalism and compassion found their limits at the point of commencing a truly coequal economic relationship with anyone, white or black, who grew the cotton that was crucial to the planter's authority and wealth.[72]

3. 1900-1930

Farm tenancy was widespread throughout Mississippi by the turn of the century; however, it flourished in the Delta as nowhere else. As of 1910, tenants operated 92% of the Delta's farms in contrast to 63% outside of the Delta. While 77% of tenants throughout the rest of Mississippi were black, approximately 95% of the Delta's tenants were black.[73]

The Delta continued attracting large numbers of blacks from 1900-1930, as its black population increased by 50%. Nevertheless, despite fertile, productive soil, most blacks only found disappointment and frustration as they faced the reality of a modern, impersonal plantation economy and an oppressive racial climate. By 1910, sharecroppers were wage laborers with no control whatsoever over the marketing or production of the cotton they grew. By 1920, sharecropping on most Delta plantations had evolved into a system that offered little hope of progress, either personal or economic, in either the short or long run.[74]

By the late 1920s, most Delta blacks lived in extreme economic deprivation, legally and politically powerless to improve their material conditions or protect themselves from coercion, violence, or illegal incarceration bordering on slavery.[75] Competition for labor appeared to have contributed to a few improvements in tenant housing as the unpainted, one-room cabin transitioned to the whitewashed, three-room house.[76]

Living conditions for Delta sharecroppers were a significant cause of the constant northward flow of blacks from the Delta throughout the 1920s. The Great Depression finally slowed it down temporarily.[77] This steady exodus of labor and whites' inability to induce even those blacks who remained in the Delta to stay in one place for any length of time also suggest why stories of involuntary servitude and peonage continued to filter out of the Delta. Blacks in Sunflower County complained that their employers prevented them from leaving their plantations, even to see their children.[78]

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[71] *Id.* at 105.
[72] *Id.*
[73] *Id.* at 99.
[74] *Id.* at 112.
[75] *Id.* at 119.
[76] *Id.* at 120.
[77] *Id.*
[78] *Id.* at 120-121.

Floods were also a part of life in the Delta throughout the late 1800s and early 1900s. Major floods occurred 11 times between 1858 and 1922; however, no one alive at the time had ever experienced anything as severe as the 1927 flood. The 1927 flood caused 250-500 people to die, leaving over 16.6 million acres and 162,000 homes underwater.[79] The 1927 fiasco finally resulted in more effective congressional action on flood control for the lower Mississippi Valley. A 1928 flood control act appropriated $325 million for a flood-control system.[80]

Planters learned that, when appropriately directed, federal assistance programs could reinforce, instead of undermine, the current economic order. Federal aid could restore the labor control the floods had pressured to disrupt. Red Cross supplies and assistance sustained local blacks until the flood waters receded. What's more, the federal government not only permitted Mississippi officials to deploy national guardsmen to incarcerate the Delta's displaced black laborers, but also attempted to undermine criticism of this practice.[81]

4. The Great Depression

No sooner did the Delta emerge from the 1927 flood, the Great Depression began. As the Depression worsened, national attention focused on the tenancy system that heavily dominated the Delta's agricultural economy. For most planters, the Depression only made it all the more essential that they maintain their policy of holding all costs, especially those for tenant furnishings, to a minimum. The 1930 Staple Cotton Review, a Delta publication, touted a plan by which tenants and stock could be maintained at a steady fifteen cents daily "per head." As the New Deal's influence steadily spread, Delta planters soon began to accept progressively less responsibility for their tenants. In Pete Daniel's words, "the federal government replaced the landlord."[82]

The quickly-implemented Agricultural Adjustment Act's (AAA)[83] "plow-up" acreage reduction program of 1933 transformed the Delta's agricultural system. Although planters received payments for the plow-up directly, AAA guidelines instructed landlords to distribute them according to the percentage of the tenant's interest in the crop. Sharecroppers were to receive one-half of the payment; share tenants were to receive two-thirds or three-fourths, and cash tenants were to receive the total amount.[84]

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[79] *Id.* at 128-129.
[80] *Id.* at 129.
[81] *Id.* at 185.
[82] *Id.* at 185-186.
[83] Wayne D. Rasmussen et al., *A Short History of Agricultural Adjustment, 1933-75*, Agriculture Information Bulletin No. 391 (1976). https://naldc.nal.usda.gov/download/CAT87210025/PDF. The goal of the Agricultural Adjustment Act was to restore the farm purchasing power of agricultural commodities or the fair exchange value of a commodity based upon price relative to the prewar 1909-1914 level. For more information about AAA's 1933 cotton program, *see infra* Part IV, The Failure of Anti-Discrimination Laws to Protect Mississippi Delta Sharecroppers, Part IV B. The Inadequacy of Laws, Efforts, and Government Officials to Reduce and Eliminate Racial Discrimination and Violence against Mississippi Delta Sharecroppers, Part IV, Section 2. Beneficial Actions that Were not Done for Sharecroppers.
[84] COBB, supra note 20, at 186.

AAA made the cost of any labor associated with a share of the crop comparatively more expensive because AAA contributed to increased cotton prices. Simultaneously, AAA helped to expand the supply of day laborers and thus depress the wages they received by encouraging tenant displacement and acreage reduction. Moreover, the AAA crop-reduction plan incentivized planters to shift more of their acreage to wage labor from tenant labor. AAA benefits derived from reductions in the property worked by wage labor did not have to be distributed. The planter convinced the AAA that he was decreasing the amount of land farmed by wage hands when he was actually cutting the size of the plots tenants received. Overall, planters were positioned to reap the benefits of a guaranteed subsidy, higher prices, and cheaper labor, all applied by the federal government.[85]

The technology to mechanize planting and cultivation of cotton had been available long before the Great Depression. The genuine constriction was providing an affordable, efficient mechanical cotton picker. As long as mechanized harvests could not be cone, the planter's estimate of his chances of securing an adequate supply of laborers at harvest time determined the amount of acreage farmed by wage laborers instead of sharecroppers. While planters were usually unwilling to risk complete dependence on day labor, AAA enlarged the pool of workers available for day labor by incentivizing planters to decrease their tenant population. If relief agencies cooperated, as they usually did, by purging their rolls at harvest time, an expanded supply of harvest labor remained ready "for the picking."[86]

The Farm Security Administration and the New Deal's Resettlement Administration oversaw programs designed to lend money directly to "worthy" tenants who aspired to relocate to communities where they could find industrial employment or become landlords. Both agencies received substantial opposition from Delta planters, who remained hostile to any program that might affect the tractability or availability of labor. At the same time, the prevalence of planter influence on the AAA and other New Deal programs, combined with the decreasing labor demand, undercut tenants' efforts, especially black tenants, to draw attention to their plight.[87]

Although it benefitted some significantly more than others, the New Deal tremendously improved Mississippi's overall economy. The federal government spent $450 million in Mississippi and cleared or insured loans for an extra $260 million between 1933 and 1939. This figure represented about $355 for each resident of Mississippi in 1940. As a result of this spending, federal income tax receipts almost quadrupled between 1934 and 1939. Bank deposits and the value of farm real estate doubled during the 1930s.[88]

5. World War II

By 1940, tenants still operated more than 90% of the Delta's farms. According to a sample of 220 heads of farm labor households, 53% were illiterate. Immigrants still made up most of the Delta's farm labor workers. Labor turnover rates remained high. The "furnish" system still grew. According to a survey of 129 sharecroppers, almost

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[85] *Id.* at 189.
[86] *Id.* at 189-190.
[87] *Id.* at 191.
[88] *Id.* at 196.

half paid more than 10% interest on the other credit items and furnishings they received. Although sharecropping had dramatically declined during the 1930s, most sharecroppers did not voluntarily change to partial- or full-wage labor status. According to the survey, 76% preferred to work for a share of the crop instead of working for wages.[89]

In the early 1940s, the Delta stood on the precipice of an era of profound economic change, much of it directly or indirectly traceable to the overall influence of New Deal farm policies combined with World War II's dramatic effects. Per capita income increased across Mississippi from $250 in 1940 to $627 in 1945. The Delta's rural farm population decreased by 19% during the 1940s, and farm workers left for cities and towns. Planters were most concerned because 10% of the rural black population left the Delta in the 1940s, creating random labor shortages and increasing the possibility of an extended labor crisis.[90]

Besides attracting labor away from the Delta, World War II also helped to relax economic restraints on the Delta's remaining black laborers. Planters quickly realized that former sharecroppers could earn as much by working only a few days weekly as they previously earned for a week's work. Irritated planters who urgently needed cotton pickers could barely endure the sight of blacks riding around the Delta flaunting their new sense of independence. Other planters complained that sharecroppers just moved into towns at the end of summer after planters stopped furnishing them but before their debts to planters were due. Once in town, they took advantage of higher wages as day laborers and cotton pickers. Some planters were compelled to let tenants stay rent-free so they would still be there for the harvest. Still, many who stayed on refused to pull or pick the "scrap" cotton that remained after the harvest.[91] When Delta planters complained of a scarcity of labor, they usually meant a shortage of labor willing to work on the terms and at the wages they offered.[92]

6. Post-World War II

Delta planters who hoped a degree of stability would return after World War II were let down. Returning black veterans were much less likely to accept unfair treatment from landlords.

Some cotton pickers filled their sacks with rocks or green bolls before weighing them. Planters who tried to prevent such behavior with physical abuse were rarely successful. In 1945, the Delta Council recommended that the state legislature adopt a plan to improve black schools, realizing that more humane treatment may be necessary to keep their labor. The Delta Council recommended higher salaries for black teachers and established a junior college to train the Delta's teachers. Not only did the transformation of the Delta's agricultural system not remove disparities in wealth and income, but it did not relieve Delta planters of their obsession with racial hegemony and labor.[93]

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[89] *Id.* at 197.
[90] *Id.* at 198.
[91] *Id.*
[92] *Id.* at 199.
[93] *Id.* at 203.

Although the labor shortage appeared to leave planters little choice but to proceed with rapid, wide-scale mechanization, the absence of a feasible mechanical picker forced some planters to keep or expand their sharecroppers to ensure they would have an adequate supply of harvest labor. These landlords commonly planted with tractors and left the crop to the field hands once green cotton sprang up in the rows. Mounting fears of racial upheaval also created renewed white interest in a mechanical cotton picker.[94]

7. 1950-1960

At the start of the 1950s, the Delta's economic transformation was well underway. Machines picked 7% of the Delta's cotton. Deteriorating and abandoned dwellings were typical as increased reliance on machines reduced the labor force. For instance, the amount of empty tenant dwellings on the Delta and Pine Land Plantation dropped from 850 to 525 between 1944 and 1947.

On one Bolivar County plantation, where only 400 of its 1,450 acres of cotton had been farmed by day labor in 1940, by 1951, 1,200 acres were being cultivated by day labor, while tenants and sharecroppers only farmed 450 acres. Although as much as 70% of this plantation's cotton crop was harvested mechanically, management kept some tenant workers on as long as they had intermittent demands for hand labor to control grasses and weeds.[95]

Mechanization, diversification, and consolidation dramatically changed Delta agriculture during the 1950s. The number of tenants dropped by one-third, the average farm size tripled, and 15% of farmers planted 70% of the cotton. Soybean acreage increased by 538% between 1949 and 1959. By the end of the 1950s, mechanical pickers harvested 50% of Delta crops. As mechanization continued, many displaced heads of sharecropper families transitioned into full-time wage-hand status, and their dependents became seasonally employed cotton choppers and pickers.[96] This is how my mom and her siblings came to sharecrop.[97]

Rapidly decreasing employment opportunities for farm laborers factored into a 54% decrease in the Delta's rural farm population between 1950 and 1960 as planters benefited from federal farm programs and mechanization. At the same time, the Delta's urban population grew by 39% as many relocated to its larger cities and towns. Many Delta leaders began to adopt industrial development as vital to the Delta's economic survival.[98]

Industrial development also served to stem the tide of white residents migrating out of the Delta. Estimated white out-migration between 1955 and 1960 (27,441) in 11 Delta-area counties almost equaled the estimated total for blacks (27,939). Although white in-migration somewhat offset the white exodus, the net migration deficit for

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[94] *Id.* at 204.
[95] *Id.* at 204-205.
[96] *Id.* at 205.
[97] *See infra* Part VI, Part VIII.
[98] *Id.* at 205-206.

whites during this five-year period was an estimated 8,974. The loss of this many white consumers spelled gloomy economic times ahead for professionals and merchants.[99]

During World War II, the Delta's white conservative leaders had become increasingly afraid that the same federal government whose aid was vital in preserving their political and socioeconomic privileges might act on behalf of those who wanted to strip them of those privileges. Several black Mississippi civil rights leaders were World War II veterans. Once they returned home from the war committed to creating significant changes in the Delta, they soon encountered vigorous opposition from those who intended to maintain the status quo. Outspoken conservatives like Walter Sillers, Jr.[100] urged their fellow planters to continue their wartime efforts to "solicit" tenants to join the Farm Bureau[101] to "counter the adverse activities to our interests of the communist-inspired labor unions and communist organizations." Blacks' intense racial consciousness and white concerns over the potential aggressiveness of returning black service members resulted in increasing racial violence in the wake of World War II.[102]

The strength of the Dixiecrat[103] movement in the Delta predated the Delta's role as the birthplace of the Citizens' Council,[104] an organization that pledged to defend Jim Crow[105] from any and all challenges. Circuit court judge Tom P. Brady of

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[99] *Id.* at 206-207.

[100] Mississippi History Now, https://www.mshistorynow.mdah.ms.gov/issue/walter-sillers-and-his-fifty-years-inside-mississippi-politics (last visited May 8, 2023). Sillers was a lawyer, cotton planter, and, at 22-plus years, the longest-serving Speaker in the Mississippi House of Representatives. His half-century tenure in the House, from 1916 to 1966, is also a record. Perhaps remembered for his staunch defense of racial segregation in the later stages of his career, Sillers was also "Mr. Delta" in state politics for decades, fiercely championing the interests of his home region.

[101] Farm Bureau, https://www.fb.org/about/who-we-are (last visited May 8, 2023). For more than 100 years, the American Farm Bureau Federation (AFBF) has been agriculture's national, unified voice. AFBF was organized on November 12, 1919, in Chicago by Farm Bureau leaders from 34 states to give farmers and ranchers a voice and a seat at the table in shaping policy that impacts farm and ranch families across the country. Today, AFBF is the country's largest general farm organization and the leading advocate for farm and ranch families.

[102] COBB, supra note 20, at 211-212.

[103] History Channel, https://www.history.com/news/how-the-party-of-lincoln-won-over-the-once-democratic-south (last visited May 8, 2023). When President Harry S. Truman, a Democratic Southerner, introduced a pro-civil rights platform at the party's 1948 convention, a faction walked out. These defectors, known as the "Dixiecrats," held a separate convention in Birmingham, Alabama. There, they nominated South Carolina Governor Strom Thurmond, a staunch opposer of civil rights, to run for president on their "States' Rights" tickets. Although Thurmond lost the election to Truman, he still won over a million popular votes.

[104] PBS, https://www.pbs.org/wgbh/americanexperience/features/emmett-citizens-council/ (last visited May 8, 2023). The Brown v. Board of Education decision was a watershed moment in American history. On May 17, 1954, the Supreme Court abolished legal school segregation in an unprecedented decision. Blacks hailed the decision. Whites in the Deep South called the day "Black Monday." Some white Southerners channeled their ire into a new movement called Citizens' Councils – organizations of white segregationists and supremacists who opposed integration and the Supreme Court decision.

[105] History Channel, https://www.history.com/topics/early-20th-century-us/jim-crow-laws (last visited May 8, 2023). Jim Crow laws were a collection of state and local statutes that legalized racial segregation. Named after a black minstrel show character, the laws – which existed for about 100 years, from the post-Civil War era until 1968 – were meant to marginalize African Americans by denying them the right to vote, hold jobs, get an education or other opportunities. Those who attempted to defy Jim Crow laws often faced arrest, fines, jail sentences, violence, and death.

Brookhaven denounced the *Brown v. Board of Education* decision[106] in a 90-page pamphlet that became the massive resistance movement's first "bible."[107] In a call to action for whites, Brady proposed a national program of "law abiding" education and resistance, possibly even leading to the formation of a third political party.[108]

The tensions accompanying *Brown v. Board of Education* peaked with the murder of Emmet Till,[109] a 14-year-old black youth, in 1955. Delta whites soon became more defensive after Till's mother decided to hold an open-casket funeral amid National Association for the Advancement of Colored People's (NAACP) [110] denunciations and criticism from both white and black northern newspapers. Till's mother said she wanted to "let the people see what they did to my boy!" NAACP spokesman Roy Wilkins[111] denounced the murder as a "lynching" and observed that it appeared that Mississippi had "decided to maintain white supremacy by murdering children."[112]

Sheriff Strider did little to collect evidence for the state. He ultimately testified that he thought the body had been in the water too long to be Till's. In the wake of Milam and Bryant's acquittal, most prominent local whites sought to distance themselves from the event. The trial left a hailstorm of criticism from outside of the South. Shortly after the trial, Milam and Bryant sold their story for $3,500, in which they admitted guilt. Neither man ever found Tallahatchie County hospitable after that. Both men and their families left Mississippi and moved to Texas.[113]

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[106] F. MICHAEL HIGGINBOTHAM, RACE LAW, 936 Carolina Academic Press (2020). In *Brown v. Board of Education for Topeka*, the Supreme Court ruled that racial segregation of children in public schools was unconstitutional in a unanimous decision.

[107] History Channel, https://www.history.com/topics/black-history/brown-v-board-of-education-of-topeka (last visited May 6, 2023). Here's the citation to the full text of *Brown v. Board of Education* (Brown I): *Brown v. Bd. of Educ*., 347 U.S. 483 (1954).

[108] COBB, supra note 20, at 213.

[109] History Channel, https://www.history.com/topics/black-history/emmett-till-1 (last visited May 8, 2023). Emmett Till, a 14-year-old black youth, was murdered in August 1955 in a racist attack that shocked the nation and catalyzed the emerging civil rights movement. A Chicago native, Till was visiting relatives in Money, Mississippi, when he was accused of harassing a local white woman. Several days later, the woman's relatives abducted Till, brutally beating and killing him before disposing of his body in a nearby river. Till's devasted mother insisted on a public, open-casket funeral for her son to shed light on the violence inflicted on black people in the South. Till's murderers were acquitted, but his death galvanized civil rights activists nationwide.

[110] National Association for the Advancement of Colored People, https://naacp.org/about/our-history (last visited May 9, 2023). The National Association for the Advancement of Colored People (NAACP) is the nation's largest and most recognized civil rights organization. Founded on February 12, 1909, the NAACP aimed to secure for all people the rights guaranteed in the 13th, 14th, and 15th Amendments to the U.S. Constitution, which promised an end to slavery, provide equal protection of the law, and the right for all men to vote, respectively. Accordingly, the NAACP's mission is to ensure the political, educational, and equality of minority group citizens of States and eliminate racial prejudice. The NAACP works to remove all barriers of racial discrimination through democratic processes.

[111] National Association for the Advancement of Colored People, https://naacp.org/find-resources/history-explained/civil-rights-leaders/roy-wilkins (last visited May 9, 2023). Roy Wilkins spent more than 40 years at NAACP and held the top job at the civil rights organization for 22 years, beginning in 1955. In 1955, Wilkins was named NAACP executive secretary (a title later changed to executive director), holding the position until 1977.

[112] COBB, supra note 20, at 217-219.

[113] *Id.* at 220-221.

8. The Civil Rights Era

The early 1960s in the Delta marked an explosion of grassroots civil rights activism. Blacks had long made it evident that they were dissatisfied with conditions in the Delta. The Congress of Racial Equality[114] and Student Nonviolent Coordinating Committee's (SNCC)[115] young organizers who entered Mississippi in the early 1960s were a sharp contrast to the middle-class, conservative orientation of the 1950s civil rights movement in Mississippi. By forming the Council of Federated Organizations (COFO),[116] young organizers coordinated their activities to present a unified front.[117]

A 1962 COFO voter registration effort that began in McComb and spread into the Delta had relatively little numerical success after being met with white resistance. The Leflore County Board of Supervisors suspended the distribution of excess food commodities to discourage future voter registration efforts. In response, SNCC organized a food drive to rally support for another voter registration campaign in Greenwood. The Greenwood drive attracted many participants who braved economic intimidation, verbal abuse, beatings, and police dogs to wait in long lines outside the registrar's office. This courageous effort only resulted in a few new black voters due to an array of delaying tactics employed by whites.[118]

SNCC leaders filed suit in early 1963, claiming that "the Federal Government has only weakly asserted its existing powers in our defense." Kennedy administration officials petitioned federal courts for a restraining order requiring Greenwood leaders to release movement organizers from jail, stop their interference with registration efforts, permit blacks the right of peaceful protest and assembly, and "protect them from whites who might object." The Justice Department cut a deal with Greenwood's white leadership within a week to withdraw the injunction in exchange for releasing the jailed activists and a nebulous promise not to interfere with future registration attempts.[119]

Justice Department officials rationalized their decision by explaining that Washington might have to be responsible for protecting every black in the Delta who

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[114] The Martin Luther King, Jr. Research and Education Institute, https://kinginstitute.stanford.edu/encyclopedia/congress-racial-equality-core (last visited May 9, 2023). Founded in 1942 by an interracial group of students in Chicago, the Congress of Racial Equality (CORE) pioneered the use of nonviolent direct action in America's civil rights struggle. Along with its parent organization, the Fellowship of Reconciliation (FOR), CORE members advised and supported Martin Luther King during the Montgomery bus boycott. King worked with CORE throughout the late 1950s and into the mid-1960s when CORE abandoned its dedication to nonviolence and adopted black separatist policies.

[115] History Channel, https://www.history.com/topics/black-history/sncc (last visited May 9, 2023). The Student Nonviolent Coordinating Committee (SNCC) was founded in 1960 after student-led sit-ins at segregated lunch counters across the South. It became the primary channel of student participation in the civil rights movement.

[116] The Martin Luther King, Jr. Research and Education Institute, https://kinginstitute.stanford.edu/encyclopedia/council-federated-organizations-cofo (last visited May 9, 2023). The Council of Federated Organizations (COFO) was a coalition of national and regional organizations engaged in civil rights activities in Mississippi. Established in 1962 to maximize the efforts of SNCC, the Congress of Racial Equality, and the NAACP, the organization focused on voter registration and education. Under the leadership of SNCC activist Robert Moses and staffed primarily by SNCC activists, COFO launched the Mississippi Freedom Summer Project in 1964.

[117] COBB, supra note 20, at 232.

[118] *Id.* at 232-233.

[119] *Id.* at 233.

attempted to register to vote. By the end of the summer of 1963, Washington's action left the civil rights movement in Mississippi "stalled on every front." In response, COFO leaders decided to hold a "Freedom Election that would overlap with Mississippi's 1963 gubernatorial primary. SNCC workers disguised themselves as cotton pickers to enter the fields directly and prevent white landlords from seeing their tenants participate in a symbolic protest against the status quo. Mississippi's more than 80,000 "freedom" ballots created a profound statement about Mississippi blacks' desire for political participation. In the wake of the vote, COFO workers observed less fear about engaging in political activities among blacks. Over 60,000 who cast ballots provided their names and addresses. COFO activists, in turn, could request their assistance in future registration efforts.[120]

The Freedom Election also paved the way for the formation of the Mississippi Freedom Democratic Party (MFDP)[121] in 1964, which presented another challenge to Mississippi's white political dominance. SNCC leaders desired to place conditions like those in the Delta in the national spotlight during the 1964 election year. MFDP members gave some of the most dramatic testimony about race brutality ever reported in the national media. As President Johnson[122] frantically called a press conference to upstage MFDP witnesses, Fannie Lou Hamer[123] described being held in jail in Winona: "They beat me and they beat me with the long flat blackjack. I screamed to God in pain. My dress worked itself up. I tried to pull it down. They beat my arms until I had no feeling in them. After a while the first man grew numb from tiredness. The other man, who was holding me, was given the blackjack. Then he began beating me."[124]

President Johnson's news conference began to air as Fannie Lou Hamer started sobbing. MFDP challengers refused to accept an at-large delegates concession from the national party to avoid a floor fight over the seating of MDFP's delegation. Ms. Hamer described the offer as "a token of rights on the back row that we get in Mississippi. We didn't come all this way for that mess again."[125]

In the meantime, Hamer and two other candidates had qualified to run in the June 2, 1964 Democratic congressional primary. Although the final vote tallies were

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[120] *Id.* at 233-234.

[121] The Martin Luther King, Jr. Research and Education Institute, https://kinginstitute.stanford.edu/encyclopedia/mississippi-freedom-democratic-party-mfdp (last visited May 9, 2023). In early 1964, as part of Freedom Summer, Mississippi civil rights activists affiliated with COFO in Mississippi launched the Mississippi Freedom Democratic Party (MFDP). Claiming status as "the only democratically constituted body of Mississippi citizens, they appealed to the credentials committee of the Democratic National Convention (DNC) of 1964 to recognize their party's delegation in place of the all-white Democratic Party delegation from Mississippi. Because Mississippi's blacks were barred from participating in the meetings of the state's Democratic Party, they decided to form their party.

[122] The White House, https://www.whitehouse.gov/about-the-white-house/presidents/lyndon-b-johnson/ (last visited May 9, 2023). In the 1960 campaign, Lyndon B. Johnson was elected Vice-President as John F. Kennedy's running mate. On November 22, 1963, when Kennedy was assassinated, Johnson was sworn in as the 36th U.S. President, with a vision to build "A Great Society" for the American people.

[123] For more information about Fannie Lou Hamer, including biographical details, *see infra* Part V, True Stories of Discrimination Former Mississippi Delta Sharecroppers Faced, formerly enslaved people, and Conclusion.

[124] COBB, supra note 20, at 234-235.

[125] *Id.*

386 for Hamer and 29,711 for her opponent, twelve-term incumbent Jamie Whitten,[126] the campaign yielded enough signatures for another symbolic "freedom" registration effort and several thoroughly documented efforts of white intimidation and harassment. Congress ultimately rejected the MDFP's request for a second election, but not before 100 out-of-state volunteers gathered 10,000 pages of testimony on allegations of voter discrimination in Mississippi.[127]

The intensity of the cruelty and hatred that Greenwood whites exhibited was alarming even by Mississippi standards. Whites tried to bomb civil rights workers and shot them, but Greenwood mayor Charles Sampson implied that COFO leaders staged many of these incidents to stir up local blacks and gain publicity. Despite ongoing protests, Sampson argued that local blacks were well treated.[127] Throughout the Delta, the initial, almost instinctive, white response to black activism was usually an attempt to reassert the caste system's stereotypes and rituals. The caste system's complexity and the elaborate interrelationship of its parts meant that a threat to any component of the status quo loomed as a threat to all.[128]

Still, the mass enfranchisement of blacks due to the Voting Rights Act of 1965 soon drastically changed the Delta's political landscape. The number of blacks registered by 1968 was a far cry from the negligible numbers on the books no more than three or four years previous. For example, in Leflore County, less than 2% of the black voting-age population was registered to vote in 1962, but 73% were on the rolls by the middle of 1968. Alternatively, white voter registration had also vastly increased, apparently in response to the increased amount of black registered voters.[129]

Blacks accounted for the most registrants in four Delta counties by mid-1968 and represented most of the potential electorate in every county. Twenty-two blacks won county-level offices across the state in the 1967 elections, emphasizing the long-term implications of the civil rights movement. After blacks' show of force in the 1967 election, the *Delta Democrat-Times* had concluded that the black vote had become "potent" in Mississippi.[130]

Black political leaders remained positive as the amount of black registered voters grew, reaching 30% by 1971 and giving blacks a clear electoral majority in 20 of Mississippi's 82 counties. Over 300 blacks sought elected office throughout Mississippi in 1971, expecting to build on the foundation established in 1967. While many of their campaigns indicated an impressive degree of determination and organization, 259 of 309 black candidates lost.[131]

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[126] David Binder, *Jamie Whitten, Who Served 53 Years in House, Dies at 85,* The New York Times, (Sept. 10, 1995), https://www.nytimes.com/1995/09/10/obituaries/jamie-whitten-who-served-53-years-in-house-dies-at-85.html. Jamie L. Whitten was a Democratic Congressman from Mississippi for 53 years – the record for the longest service in the House of Representatives. Mr. Whitten was chairman of the powerful Appropriations Committee from 1979-1992.

[127] COBB, supra note 20, at 235.

[128] *Id.* at 237.

[129] *Id.* at 237-238. For more details about the caste system in the Delta, *see infra* Part V C, The Delta's Caste System.

[130] *Id.* at 245-246.

[131] *Id.* at 246.

III. THE FAILURE OF ANTI-DISCRIMINATION LAWS TO PROTECT MISSISSIPPI DELTA SHARECROPPERS

A. Relevant Laws that Impacted Mississippi Delta Sharecroppers

1. Local and State Laws and Cases

Starting in the late 1860s, during Reconstruction and gaining steam after whites regained political control in 1877, all southern states enacted interlocking laws designed to criminalize black life. Most such laws were struck down via federal interventions or in court appeals; however, new statutes embracing the same restrictions on black lives quickly replaced them. Few laws specifically stated their applicability only to blacks, but their provisions were rarely if ever, enforced on whites. With the exceptions of Arkansas and Tennessee, every southern state had passed laws outlawing vagrancy and defining vagrancy so vaguely that almost any formerly enslaved person not protected by a white man could be arrested by the end of 1865.[132]

An 1865 Mississippi statute required black workers to contract with white farmers by January 1 annually or risk arrest. Four other southern states legislated that blacks could not be legally hired for work without a discharge paper from their previous employer. This effectively prevented them from leaving their previous employer's plantation. Alabama, North Carolina, and Florida passed laws in the 1880s that made it a criminal act for a black man to change employers without permission.[133] In nearly all cases, the potential penalty for black men and a few women arrested under these laws was the prospect of being sold into forced labor. In 1866, Alabama governor Robert M. Patton leased Alabama's 374 prisoners to Smith and McMillen for a six-year term for a grand total of five dollars. The Alabama and Chattanooga Railroad controlled Smtih and McMillen. Three years later, Governor Patton became president of Smith and McMillen. This forced labor continued in southern states for the next 80 years.[134]

Section 1 of the Civil Rights of Freedmen in Mississippi provision of the Black Code of Mississippi[135] required all mulattoes, free negroes, and freedmen may sue and be sued, implead and be impleaded, in all courts of law and equity, may acquire personal property, and may dispose of it in the same manner and to the same extent as white persons, provided that no mulatto, free negro, or freeman lease or rent any lands or tenements besides those in incorporated towns.[136]

Under Section 3, all mulattoes, free negroes, and freedmen who currently or have previously cohabitated together as husband and wife were held as legally married and legitimate for all purposes, and it was unlawful for any mulatto, free negro, or freedman to intermarry with any white person; and for any white person to intermarry with any mulatto, free negro, or freedman; and any person who so intermarried were guilty of felony and, on conviction, receive life in Mississippi State Penitentiary. The law defined mulattoes, free negroes, and freedmen as being of pure negro blood and

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[132] *Id.* at 247.
[133] BLACKMON, supra note 70, at 53-54.
[134] *Id.* at 53-54.
[135] *Id.* at 54.
[136] Teaching American History, https://teachingamericanhistory.org/document/black-codes-of-mississippi/ (last visited May 5, 2023). The Black Code of Mississippi (1865) referenced the creation of state laws impeding the civil rights of freed slaves in Mississippi.

those descended from a negro inclusive of the third generation. It permitted one ancestor in each generation to be white.[137]

Section 6 required all labor contracts with mulattoes, free negroes, and freedmen for a month or longer to be in writing, in duplicate, attested, and read to said mulatto, free negro, or freedman by a county or city officer, beat, or two disinterested white people of the county in which the work was to be performed; and took said contracts as entire contracts. The laborer who quit without good cause before the end of his contract forfeited their wages for that year up to the time of quitting.[138]

Under Section 7, every civil officer must, and every person could arrest and return to their employer any mulatto, free negro, or freedman who left his employment without good cause before their contract ended; permitted said officer and person to receive five dollars for arresting and returning every deserting employee, plus ten cents per mile from the location of the arrest to the site of the delivery; and required the employer to pay the same from the deserting employee's wages. Section 7 provided that the arrested party could appeal to the board of police of the county or justice of the peace who were tried summarily whether said appellant was legally employed by the alleged employer and had good cause to quit said employer. Section 7 permitted either party to appeal from the county court, pending which the alleged deserter must be remanded to the alleged employer or otherwise disposed of. The county court's decision was final.[139]

Section 9 required any person persuaded or attempted to influence, cause, or entice any mulatto, free negro, or freedman to desert from the legal employment of any person before the end of their contract or who knowingly employed any such deserting mulatto, negro, or freedman, or who deliberately gave or sold any such deserting mulatto, negro, or freedman raiment, food, or other thing, to be guilty of a misdemeanor and, upon conviction, be fined $25-$200 plus costs. Section 9 permitted the court to sentence said convict to no more than two months' imprisonment in the county jail if the fine and fees were not immediately paid and held the person liable for damages to the injured party. Section 9 provided that any person who persuaded or attempted to persuade, cause, or entice any mulatto, free negro, or freedman to desert from the legal employment of any person would be fined $50-$500 plus costs. The court must sentence said convict to no more than six months imprisonment in the county jail if said fine and fees were not immediately paid.[140]

Under the Black Code of Mississippi's Apprentice Law, it was the duty of all justices of the peace, sheriffs, and other civil county officers to report to probate courts of their respective counties in January and July terms all mulattoes, free negroes, and freedmen younger than 18 years old in their districts, beats, or counties who were orphans, or whose parent(s) could or would not provide for and support them. Thereupon, it was the probate court's duty to order the clerk of said court to apprentice said minors to some suitable and competent person, provided that the former owner of

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137 HIGGINBOTHAM, supra note 107, at 932.
138 *Id.* at 916-917.
139 *Id.*
140 *Id.*

said minors had a preference when they were an appropriate person for that purpose in the court's opinion.[141]

Under the Black Code of Mississippi's Vagrant Law, all mulattoes, free negroes, and freedmen older than 18 years old found on the second Monday in January 1866 or after that, with no lawful business or employment, or seen illegally assembling themselves, either during day or night, and all white people with them, or usually associating with them, or living in fornication or adultery with a mulatto, free negro, or freedwoman, were deemed vagrants, and on conviction, were fined no more than $50 in the case of a mulatto, free negro, or freedman, and no more than $200 in the case of a white man, and imprisoned at the court's discretion. For a free negro, the term was no longer than ten days; for a white man, it was no longer than six months. It was prima facie evidence of vagrancy for any mulatto, free negro, or freedman who failed or refused to pay any tax regarding the provisions of the sixth section of this act. It was the sheriff's duty to arrest such mulatto, free negro, or freedman and immediately hire such person for the shortest time to anyone who would pay said tax, plus costs, giving preference to the employer, if there was one.[142]

Under the Black Code of Mississippi's Penal Laws, no mulatto, free negro, or freedman not in the military and not licensed to do so by their county's board of police could carry or keep any firearms, or any ammunition, bowie or dirk knife, and if convicted in county court, was punished by a fine of no more than $10, plus costs. All such ammunition or arms were forfeited to the informer. It was every military and civil officer's duty to arrest any mulatto, free negro, or freedman found with any such ammunition or arms and cause them to face trial in default of bail. Such laws were prevalent in Mississippi and other southern states, including Alabama, Louisiana, Georgia, Florida, Texas, North Carolina, and South Carolina.[143]

For example, on March 30, 1908, twenty-two-year-old Green Cottenham, the youngest of nine children born to formerly enslaved people in an adjoining county to Shelby County, Alabama, was arrested and charged with vagrancy. After three days confined behind bars, Cottenham was quickly found guilty. Cottenham was immediately sentenced to thirty days of hard labor. Since Cottenham could not afford to pay the fines and court fees, his term was extended to almost a year of hard labor. The next day, the sheriff turned Cottenham over to U.S. Steel Corporation[144] for the duration of his sentence.[145] In exchange, the subsidiary, Tennessee Coal, Iron & Railroad[146] gave U.S. Steel $12 monthly to cover Cottenham's fines and court fees. Cottenham's required daily "task" was to remove eight tons of coal from the mine.

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[141] *Id.*
[142] *Id.*
[143] *Id.* at 917-918.
[144] *Id.* at 918.
[145] United States Steel, https://www.ussteel.com/about-us/history (last visited July 18, 2023). U.S. Steel was formed when a group led by Elbert Gary, U.S. Steel's first chairman, and J.P. Morgan purchased Andrew Carnegie's steel company. After the purchase, they combined it with their holdings in the Federal Steel Company, and both companies became the nucleus of U.S. Steel.
[146] BLACKMON, supra note 70, at 301-302.

"Cottenham's offense was blackness." Cottenham never made it back home to his family from U.S. Steel Corp.[147]

The purpose of the Black Codes was to attempt to outlaw the renting or leasing of farmland to blacks, thus forcing them to return to their former masters.[148] James L. Alcorn's home at Yazoo Pass was torched in the Spring of 1869 after he announced that he would rent the land to a black family.[149]

Mississippi's 1890 Constitution[150] stripped the vote from almost every back in addition to thousands of hill-county whites via the poll tax and other provisions. It also severely limited the chief executive's powers. The legislature mainly had such ability to govern because uncorrected malapportionment helped to continue the Delta's influence.[151] Mississippi's 1895 gubernatorial election highlighted the effects of disenfranchisement. The amount of black males who did not vote increased from 71% in 1888 to almost 100% in 1895.[152]

Until 1890, the apportionment of the Mississippi legislature had been calculated on the basis of the total population. "This gave a tremendous advantage to the more densely populated Delta counties, where blacks (recruited to the great plantations as field workers) outnumbered whites by as many as eight to one." Even after fewer and fewer blacks voted following the "Revolution of 1875," the Delta's political power did not decline because the legislature still counted the black population in the apportionment of legislative seats.[153]

"The white counties saw the disenfranchisement of the Negro as the first step in curbing the political power of the Delta planters." Delegates of white counties pushed two major demands at the 1890 constitutional convention: the removal of blacks from the political process and reapportionment of the state legislature based on the white population alone. Delta delegates accepted the first demand and opposed the second one. Eventually, a compromise was decided: Almost all blacks in Mississippi were disenfranchised through a several restrictive devices, including the poll tax and the literacy test. As far as reapportionment was concerned, Delta counties kept the same amount of legislators, while white counties received some additional seats.[154]

The Supreme Court upheld the constitutionality of Mississippi's disenfranchisement procedures in the 1898 case of *Williams v. Mississippi*. Once other southern states realized that the federal government would not try to defend blacks' political rights, they quickly followed suit.[155]

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[147] University of Alabama Library Archives, https://archives.lib.ua.edu/repositories/3/resources/4666 (last visited July 20, 2023). Founded in 1852, Tennessee Coal, Iron & Railroad Company was one of the largest and most influential iron and steel companies in Birmingham.
[148] BLACKMON, supra note 70, at 1-2.
[149] COBB, supra note 20, at 51.
[150] *Id.* at 72.
[151] Mississippi History Now, https://www.mshistorynow.mdah.ms.gov/issue/mississippi-constitution-of-1890 (last visited May 5, 2023).
[152] *Id.* at 87.
[153] *Id.*
[154] OSHINSKY, DAVID, WORSE THAN SLAVERY, 267 The Free Press (1996).
[155] *Id.*

Mississippi lawmakers added the "false pretense law"[156] in 1906. The "false pretense law" provided criminal punishment for tenants who abandoned a contract after accepting even a small advance. Mississippi's Supreme Court voided the two-contract law in 1912 based on federal court decisions, but the "false pretense law" remained in effect until 1930. Meanwhile, several towns enacted "work or fight" laws during World War I due to white perceptions of a war-induced labor shortage.[157]

2. Federal Laws and Cases

Whites considered reintroducing the forced labor of blacks to fund government services during Reconstruction as an inherently practical manner of eliminating the cost of constructing prisons and returning blacks to their appropriate positions in society. The southern economy was in ruins; state officials only had the barest resources, and county governments had even fewer resources. Forcing blacks to work as punishment for ostensible crimes was legal; the Thirteenth Amendment, adopted in 1865 to formally abolish slavery, specifically allowed involuntary servitude to punish "duly convicted" criminals.[158]

The Civil Rights Act of 1866[159] declared that all persons born in the United States, including formerly enslaved people, are citizens; prohibited racial discrimination in the sale or lease of land, the issuance and enforcement of contracts, the bringing of lawsuits, and presentment of testimony, and all other laws and proceedings for the security of person and property; and provided that the federal courts would have jurisdiction over all disputes under the Act and could punish any persons in violation.[160]

The Fourteenth Amendment of 1868[161] declared that all persons born in the United States are citizens, guaranteeing them equal protection of the laws, due process, and privileges and immunities of citizenship and giving Congress the authority to enforce the provisions.[162]

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[156] *Id.* at 268.

[157] The full text of Mississippi's 1906 false pretense law is here: HEMINGWAY, WILLIAM, THE ANNOTATED MISSISSIPPI CODE: SHOWING THE GENERAL STATUTES IN FORCE AUGUST 1, 1917, EMBRACING THE CODE OF 1906 AS AMENDED AND ALL PERMANENT, GENERAL AND PUBLIC ACTS OF THE LEGISLATURE PASSED SINCE THE ADOPTION OF THAT CODE; CONTAINING ALSO THE DECLARATION OF INDEPENDENCE AND THE CONSTITUTIONS OF THE UNITED STATES AND MISSISSIPPI, ALL COMPLETELY ANNOTATED, VOLUME 1 669 (The Bobbs-Merrill Co., 1st ed. 1917).

[158] COBB, supra note 20, at 104.

[159] BLACKMON, supra note 70, at 53.

[160] History Channel, https://www.history.com/topics/black-history/fourteenth-amendment (last visited May 6, 2023). Here's a link to links of each section of the Civil Rights Act of 1866: Cornell Law School Legal Information Institute, https://www.law.cornell.edu/topn/civil_rights_act_of_1866 (last visited May 6, 2023). Congress used its authority to enforce the newly ratified Thirteenth Amendment and protect the rights of black Americans by creating the Civil Rights Act of 1866.

[161] HIGGINBOTHAM, supra note 107, at 932.

[162] History Channel, https://www.history.com/topics/black-history/fourteenth-amendment (last visited May 6, 2023). The Fourteenth Amendment granted citizenship to all persons born or naturalized in the United States – including formerly enslaved people – and guaranteed all citizens "equal protection of the laws." Here's a link to the full text of the Fourteenth Amendment: Cornell Law School Legal Information Institute, https://www.law.cornell.edu/constitution/amendmentxiv (last visited May 6, 2023).

The Fifteenth Amendment of 1870[163] prohibited racial discrimination in voting and gave Congress the authority to enforce the prohibition.[164]

Plessy v. Ferguson[165] created the "separate but equal" doctrine that permitted states to separate people based on race in railroad cars and all social activities and public accommodations in 1896.[166] *Brown v. Board of Education* (Brown I)[167] held that de jure racial segregation in education violated the Fourteenth Amendment's Equal Protection Clause in 1954.[168] *Brown v. Board of Education II* (Brown II)[169] mandated the desegregation of previously de jure segregated schools.[170]

Section 2000a of Title VII of the Civil Rights Act of 1964[171] makes it illegal to discriminate based on "race, color, religion, or national origin" in any sphere affecting interstate commerce. The act's purpose is to oppose widespread segregation in all places of public accommodation [restaurants, hotels, taverns, pool rooms, sporting events, gas stations, etc.] The act is intended to "eliminate the inconvenience, unfairness, and humiliation of racial discrimination."[172]

Section 2 of the Voting Rights Act of 1965[173] prohibited any procedure, practice, standard, or prerequisite to voting to be implied or imposed by any political subdivision or State to abridge or deny the right of any United States citizen to vote based on color or race. Section 3 requires the court to authorize the appointment of federal examiners by the United States Civil Service Commission whenever the Attorney General begins a proceeding under any statute to enforce the Fifteenth Amendment's guarantees in any political subdivision or state. It provides that the court

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[163] HIGGINBOTHAM, supra note 107, at 932.

[164] History Channel, https://www.history.com/topics/black-history/fifteenth-amendment (last visited May 6, 2023). The Fifteenth Amendment sought to protect the voting rights of Black men after the Civil War. Here is a link to the full text of the Fifteenth Amendment: Cornell Law School, Legal Information Institute, https://www.law.cornell.edu/constitution/amendmentxv (last visited May 6, 2023).

[165] HIGGINBOTHAM, supra note 107, at 932.

[166] History Channel, https://www.history.com/topics/black-history/plessy-v-ferguson (last visited September 27, 2023). The Supreme Court upheld a Louisiana statute prohibiting black passengers from riding alongside whites in railway cars in *Plessy v. Ferguson*.

[167] HIGGINBOTHAM, supra note 107, at 934.

[168] History Channel, https://www.history.com/topics/black-history/brown-v-board-of-education-of-topeka (last visited May 9, 2023). *Brown v. Board of Education of Topeka* was a landmark 1954 Supreme Court case in which the justices ruled unanimously that racial segregation of children in public schools was unconstitutional. Here's the citation to the full text of *Brown v. Board of Education* (Brown I): *Brown v. Bd. of Educ*., 347 U.S. 483 (1954).

[169] HIGGINBOTHAM, supra note 107, at 936.

[170] Library of Congress, https://guides.loc.gov/brown-v-board-of-education/chronology-of-events#s-lib-ctab-22170470-10 (last visited May 8, 2023). In *Brown v. Board of Education for Topeka II*, the Supreme Court ordered that desegregation occur "with all deliberate speed." *Brown II* was intended to work out the mechanics of desegregation. Due to the vagueness of the term "all deliberate speed," many states could stall the Court's order to desegregate their schools. The legal and social obstacles that southern states put in place and encouraged in their effort to thwart integration catalyzed the student protests that launched the civil rights movement. Here's the citation to the full text of *Brown v. Board of Education* (Brown II): *Brown v. Bd. of Educ*., 349 U.S. 294 (1955).

[171][171] HIGGINBOTHAM, supra note 107, at 936.

[172] Cornell Law School Legal Information Institute, https://www.law.cornell.edu/uscode/text/42/2000a (last visited May 6, 2023Title II of the Civil Rights Act of 1964 provided for desegregation in all places of public accommodation. The full text of § 2000a of Title VII of the Civil Rights Act of 1964 is found here.

[173] HIGGINBOTHAM, supra note 107, at 937.

does not need to authorize the appointment of federal examiners if any occurrences of abridgment or denial of the right to vote based on color or race (1) have been few in amount and have been effectively and promptly corrected by state or local action, (2) the ongoing effects of such occurrences have been eliminated, and (3) there is no reasonable probability of their recurrence in the future.[174]

B. The Inadequacy of Laws, Efforts, and Government Officials to Reduce and Eliminate Racial Discrimination and Violence Against Mississippi Delta Sharecroppers

Despite civil rights laws passed to protect them, sharecroppers still suffered harassment, intimidation, violence, and discrimination at the hands of whites in the Mississippi Delta. Not until civil rights groups brought national attention to the plight of sharecroppers in the Mississippi Delta and America learned of the brutality sharecroppers regularly faced did things begin to change for the better.

1. Harmful actions that were done to sharecroppers

At the 1890 constitutional convention to consider disenfranchisement, hill county leaders strenuously objected that the proposed means to remove the black vote would also disenfranchise 50,000 whites. Moreover, many Delta whites actively opposed the "understanding clause." The "understanding clause" was added to the constitution to permit a registration loophole for illiterate whites from the hills.[175]

The poll tax, literacy test, and secret ballot had their desired effect after the 1890 constitutional convention ended, while the understanding clause did not result in a significant boon to white counties. Of the barely 2,000 new voters approved via the understanding clause in 1892, almost 50% were black. The 1895 gubernatorial election results demonstrated the effects of disenfranchisement in Mississippi. The percentage of black males who did not vote increased from 71% in the 1888 presidential election to almost 100% in 1895.[176]

Besides a new sense of partisan unity, the 1890 constitution provided additional benefits for Delta whites. Although white county representatives successfully used the 1890 constitutional convention to reapportion the legislature, a new reapportionment plan ostensibly based on the adult male (voting population) instead of the entire population ultimately had little effect on the disproportionate influence whites enjoyed from majority-black counties in the state legislature. Before the new constitution's ratification, majority-white counties with a total white adult male population of 73,010 received only 51% of state House of Representative seats and 17% of state Senate seats. In comparison, majority-black counties with 47,600 adult white males held 68.3% of house seats and 22.3% of senate seats. The compromise developed by the framers of the new constitution was that majority-white counties would receive 13 new house seats, and more majority-white house districts would be created in majority black counties. On the other hand, these majority black counties would receive more favorable

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[174] National Archives, https://www.archives.gov/milestone-documents/voting-rights-act (last visited May 9, 2023). The Voting Rights Act of 1965 prevents states from imposing any voting perquisites or qualifications that would deny the rights of any United States citizens to vote based on color or race. The full text of § 2 of the Voting Rights Act of 1965 can be found here.

[175] HIGGINBOTHAM, supra note 107, at 923.

[176] COBB, supra note 20, at 87.

apportionment in the state senate, and their leaders also expected that a required three-fifths approval of all spending measures would grant them adequate veto power over all tax increases.[177]

The new apportionment plan favored the white minority that led the Delta. The lower house's almost 17-seat advantage that black counties previously enjoyed in 1882 shrank to 8 seats under the 1890 plan; however, the senate's black county advantage slightly increased from 4 2/3 seats in 1882 to 5 1/3 seats in 1890. In the long run, disenfranchisement permitted the Delta's Democratic leadership to unite its local power base, while ongoing malapportionment facilitated its efforts to advance its agenda in state politics.[178]

For example, a few Bolivar County blacks continued to vote after the 1890 disenfranchisement provisions were enacted, but whites knew that black voting could be ended if it became a problem. As white political leaders accepted the white primary system, black political fortunes declined proportionately. The poll tax slowly removed most black voters from the rolls, and those who remained only voted sporadically and in small numbers after 1895.[179]

Blacks' decreasing political influence was evident in several ways. For example, in 1890, roughly equal amounts of whites and blacks were summoned for jury duty in Bolivar County; by 1902, no blacks were called. White Coahoma County landlords rejected federal flood relief assistance in 1897, dismissing blacks who protested as "incapable of comprehending the true import of government aid."[180]

As previously stated, Mississippi's 1890 disenfranchisement laws violated the Fifteenth Amendment. They prohibited racial discrimination in voting via the poll tax, literacy test, secret ballot, long residency requirements, and a new reapportionment plan. By targeting blacks with disenfranchisement laws, Mississippi's 1890 constitution discriminated against blacks in violation of the Fifteenth Amendment. After the disenfranchisement laws from Mississippi's 1890 Constitution also disenfranchised 50,000 whites from the hill, the "understanding clause" was added to permit a registration loophole for the 50,000 whites from the hills. The "understanding clause" that permitted a registration loophole for the 50,000 whites from the hills discriminated against Mississippi's black voters in violation of the Fifteenth Amendment, not permitting them to vote.[181]

As the plantation economy stabilized, the racial climate deteriorated rapidly. The Delta stood at the forefront of a surge of racial violence that saw Mississippi rise to the top as the state with the most lynchings. Seventeen counties wholly or partially within the Delta accounted for 34 of the 93 lynchings recorded by the NAACP for all of Mississippi's 82 counties between 1888 and 1901.[182]

In the early 1920s, Greenwood whites were especially known for mistreating blacks at the train station. Not only were train porters harassed, but they also harmed

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[177] *Id.*
[178] *Id.* at 87-88.
[179] *Id.*
[180] *Id.* at 89-90.
[181] *Id.* at 90.
[182] *Id.* at 87-88.

law enforcement officials and threatened out-migrants. Such incidents often led to flight by the aggrieved party and their friends.[183] By the end of the 1920s, most Delta blacks resided in severe poverty, legally and politically powerless to improve their economic circumstances or even protect themselves from unlawful incarceration bordering on slavery, coercion, or violence.[184]

Supported by the three-fifths approval requirement for all revenue votes, formidable Delta representatives steadily opposed hill-county leaders' attempts to provide updated and expanded hospitals, schools, and other public facilities and services for low-income whites.[185]

In the 1930s, most banks refused to loan blacks any money. Instead, they referred them to a merchant who could demand as much as 25% interest. Hortense Powdermaker wondered at the candor of planters who admitted and even bragged about cheating their tenants. Others justified their dishonesty by stating that the only way of getting blacks to work was for them to remain at a bare subsistence level or in debt.[186]

A wholesale grocer told John Dollard that some planters previously lent cash before 1930; however, as the Depression continued, they opened commissaries to advance supplies and groceries in response to their decreasing cash reserves, generally at 20% to 25% interest. Interest on advances was anywhere from 15% to 25%.[187] Rural home demonstration agents and black teachers were regularly forbidden from showing tenants how to calculate their crop share, and blacks with "a propensity to figure" were considered potential troublemakers.[188]

2. Beneficial Actions that Were not Done for Sharecroppers

Delta planters who intended to remedy the deficiencies of loyalty, industry, and thrift among black laborers by encouraging foreign immigration were predestined to fail because, for all the advantages immigrants appeared to have as tenants, they were much less susceptible than blacks to intimidation or coercion. Not only were Italians and other immigrants less likely to work without complaint for minimal wages, but they were also not disposed to accept the constraints of being a Mississippi Delta tenant farmer. These constraints, including selling cotton only to the owner or his agent and credit only at the plantation commissary, not only conflicted with what seemed to be a tenant's economic best interest but also bore with them the stigma of inequality and subservience and thus grouped all tenants, black and white. These conditions were economically and socially unacceptable to the Italians who immigrated to Delta plantations, and they made it known that they resented being treated like blacks.[189]

The largest group of Chinese Americans in the non-metropolitan South resided in the Delta. Small numbers of Chinese migrated to the Delta after Reconstruction to supplement black labor for Delta planters. The Chinese soon became disenchanted with

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183 *Id.* at 91.
184 *Id.* at 117.
185 *Id.* at 119.
186 *Id.* at 151.
187 *Id.* at 154-155.
188 *Id.* at 154.
189 *Id.* at 155.

farming and instead operated small-scale mercantile stores catering to blacks.[190] Whites seldom considered Chinese merchants competitors because the volume of business per customer was so low and the clientele was so impoverished. Whites did, however, take issue with the Chinese's open disregard for the Delta's taboos. Not only were the Chinese courteous to blacks, Chinese males consorted openly with black women and sometimes even married them.[191]

During the 1930s, Chinese leaders consulted sympathetic whites regarding their children's inferior public schools. Whites advised Chinese leaders to treat blacks like whites did, especially to curtail their open sexual liaisons. Although Delta whites had no serious economic interest in obstructing racial equality for Delta Chinese, Delta whites did not grant Delta Chinese full racial equality as long as the Chinese might behave in a manner dangerous to Delta society's "racial integrity." For example, Delta whites were reluctant to accept Chinese children into their school since it was difficult for them to identify if a Chinese child was part black.[192]

There were also Mexican sharecroppers. Mexicans came to sharecrop on B.A. Wright Plantation, where my family sharecropped until 1971. They came in summer or fall and lived in dilapidated houses past a shop. There were no white sharecroppers on the Mound.[193]

Mississippi's 1890 Constitution required the distribution of school funds based on the amount of educated children in the county. Poll taxes augmented the common school fund. Both components favored Delta counties, with many blacks included in the school-age population while not paying poll taxes.[194]

Voters overwhelmingly approved a constitutional amendment granting the school fund distribution according to attendance. The 1916 legislature created a new state board of equalization. The state board of equalization quickly set taxes at the total estimated values. Following this, most of the opposition came from the Delta. Moreover, Delta counties took advantage of local tax boards' ability to set their assessment levels by undervaluing property. As the wealthiest counties, the Delta stood to gain the most. The Piney Woods' poor, underdeveloped counties usually paid more taxes than many Delta counties for most years.[195]

To work around this, white officials diverted a large percentage of the money earmarked for black schools to educate white students. The diversion of school funds for blacks improved the quality of education for Delta whites relative to black education for whites in counties with lower black population percentages. Despite the adversity they faced, many black parents made whatever sacrifices were necessary to ensure their children were educated. Blacks received very little assistance from whites to educate

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[190] *Id.* at 111-112.
[191] *Id.* at 173.
[192] *Id.* at 173-174.
[193] *Id.* at 174.
[194] Telephone Interview with Muriel Ransom Pollard, supra note 64. For more information on the Mound, please *see infra* Part VI, True Stories of Discrimination Former Mississippi Delta Sharecroppers Faced and Conclusion.
[195] COBB, supra note 20, at 143-144.

their children. White Delta schools offered students a longer term and better teacher salaries by denying blacks their share of school funds.[196]

With the 1916 legislature's new state board of equalization came a pledge that the next legislature would reduce the tax levy; however, it still received angry protests from the Delta. Assessments declined in most of Mississippi's 65 poorest counties while increasing by 464% in Bolivar and Coahoma counties.[197] In 1932, Mississippi was the first state to establish a statewide sales tax. Delta planters welcomed this as they did any regressive taxation. Although this sales tax applied to everyone, it hit sharecroppers hardest because they couldn't afford to cover basic needs, much less an additional sales tax.[198]

Under the AAA's 1933 plow-up program,[199] planters were paid directly to reimburse sharecroppers, share tenants, and cash tenants. AAA officials argued that planters would live up to their "moral obligation" to their tenants and fairly pay them. Tenants had little or no legal status, so that direct payments would weaken their landlord's influence. That, in turn, would engender substantial opposition to the program from planters with close ties to the politically potent southern bloc in Congress and encourage potential social upheaval. The landlord's perspective was that tenants could not handle their money and were likely to "throw away" what they received instead of spending it on necessities or applying it to their debts. This policy ensured that the tenant's new dependence on federal government assistance did not release him from his old reliance on the planter.[200]

Although the 1934 AAA cotton program received more attention regarding tenant payments, the "planters first" policy was challenging to overturn. Under the 1934 AAA plan, each landlord received an acreage allotment based on 40% of his cotton production from 1928-1932. He collected a rental payment based on average yields of lint cotton on his property in exchange for removing this allotted acreage from cultivation. Rental payments were made in two installments. The first was completed in March or April, just before planting, and the second in August or September, right before harvest, to reduce the credit constraints for planters. The program was problematic because landowners could receive half of their eligible rental payments before it became clear that they would either retain their tenants or reduce their acreage. The most he stood to lose by violating the contract was the parity payment, which was only about 22% of the total income he would receive from the government because he received the second half of the rental payment right before harvest.[201]

Any tenant bold enough to file an official charge that his landlord had not paid him what he was fairly owed became a prime target for eviction since such complaints eventually made their way back to planter-dominated AAA county committees. Ostensibly written to help tenants, the ambiguous wording of specific provisions of the

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196 *Id.* 143-144.
197 *Id.* at 179.
198 *Id.* at 144.
199 *Id.* at 151.
200 *Id.* at 186.
201 Wayne D. Rasmussen et al., A Short History of Agricultural Adjustment, 1933-75, Agriculture Information Bulletin No. 391 (1976).

act made even more problems for tenants, who needed to have a better chance of a sympathetic hearing from his county committee.[202]

3. Arguments that Relevant Laws Provided Adequate Protections

In the wake of the Great Depression, William Alexander Percy and others defended the sharecropping system. They cited its positive impact during difficult times when the tenant and his family could be assured that the planter would keep them fed, clothed, and housed, regardless of crop or income prospects.[203]

The fact that Italian immigrants were sharecroppers is an argument that it was fair for blacks to sharecrop. Although Delta planters previously attempted to recruit immigrant labor to lessen their dependence on black workers, New Deal officials and investigators soon learned that Delta landlords preferred black tenants over white ones. According to John Dollard, "low standards of living can be forced on the Negro by utilizing caste prerogatives to suppress any demand for change on his part."[204] Multiple planters did not hesitate to reject white day laborers and tenants. One planter refused a New Deal official's offer for 11 white families to sharecrop. Another white tenant reported that he was rebuffed by one planter while seeking employment. The planter frankly informed him, "I won't have any g—damned white sharecropper on my place. Get off and stay off. All I want to work are niggers who will do what I tell them to do."[205]

Planters also attempted to influence New Deal[206] relief agencies to remove potentially troublesome white tenants from the Delta. One official reported that planters regularly asked him not to place white families on relief but to "starve them out. They are not worth feeding. We do not want them in our county."[207] Twenty-two Leflore County Civil Works Administration (CWA)[208] workers complained to Harry Hopkins about influential planters who received CWA work for their black tenants while refusing to contract white tenants. They assured Hopkins that they wanted the Negro who follows public work for a living to have his CWA work, but we don't want farm labor, white or black, to rob us of what we believe to be rightfully ours.[209]

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[202] COBB, supra note 20, at 187-188.
[203] *Id.* at 188.
[204] *Id.* at 185.
[205] *Id.* at 194. For more details about the caste system in the Delta, see *infra* Part III C.8., The Delta's Caste System.
[206] COBB, supra note 20, at 194.
[207] History Channel, https://www.history.com/topics/great-depression/new-deal (last visited September 28, 2023). President Franklin D. Roosevelt instituted the New Deal, a series of projects and programs with the goal of restoring prosperity to Americans, during the Great Depression.
[208] COBB, supra note 20, at 194.
[209] The Living New Deal, https://livingnewdeal.org/glossary/civil-works-administration-cwa-1933/ (last visited May 9, 2023). The County Civil Works Administration (CCWA) was created on November 9, 1933, by Executive Order No. 6420B, under the power granted to President Roosevelt by Title II of the National Industrial Recovery Act of 1933. Like other New Deal emergency employment programs, the CWA was designed to put jobless Americans back to work and to use them on beneficial public projects. More specifically, the CWA was intended to be a short-lived program to help jobless Americans get through the dire winter of 1933-34. It did just that: Two months after its start, the CCWA had 4,263,644 formerly unemployed workers on its payroll.

4. Arguments that Relevant Laws Provided Inadequate Protections

Some forty years after the Emancipation Proclamation, slavery was still practiced in America. In 1899, Edward A. Angier, a federal prosecutor in Atlanta, Georgia, filed one charge of conspiracy to hold blacks in a state of peonage against William Eberhardt, one of Georgia's most prominent planters. Eberhardt enslaved men and women, forcing them to assign their children to him as apprentices by relying on his brother-in-law, a justice of the peace, to convict black laborers on any charge he wished to use. For example, Eberhardt regularly claimed to have loaned money to black workers and then held them on his plantation to work off the debt, usually for years at a time.[210]

Angier charged Eberhardt for enslaving Charley Calloway, a black man, in January 1986 by falsely claiming that Calloway owed him money. Eberhardt assaulted and degraded Calloway physically and emotionally after Calloway resisted. Witnesses said Eberhardt brutally beat Mary, Calloway's wife, and then forced himself upon her at gunpoint. After Calloway attempted to escape, Eberhardt had him returned and placed in handcuffs. After beating Calloway "upon the back, head, face and body," Eberhardt had Calloway left naked and chained into a bed with a sick laborer named Orange Neeley.[211]

Later, Eberhardt pulled out his pistol and forced Calloway "to pinion his own beloved son, Robert Calloway, oustretched to the ground, and did make the said Charley Calloway hold his said son while the said William Eberhardt did violently and unmercifully beat the said Robert Calloway with heavy sticks and other weapons" until Robert was crippled. As a final indignity, Eberhardt forced Calloway to apprentice his remaining children, who of him were still nursing babies, into Eberhardt's control until the reached the age of twenty-one.[212]

Despite widespread knowledge of Eberhardt's actions, scores of local whites rallied to his defense. They signed a petition that labelled the evidence against Eberhardt as "the testimony of irresponsible negroes." Although Angier continued moving forward with the case, he acknowledged to his superiors that "we are the pioneers in this movement, and as this is the first time this 'peonage' section has ever been invoked."[213]

Angier sought permission from the Department of Justice to expand his investigation into surrounding counties and warned: "Every resource known and unknown to the law will resorted to by these potent and opulent influences to break down this Bill [of indictment], as we have selected the ring-leader for the first case." In the end, Eberdhardt's attorney argued that no federal statute specifically made it a crime to hold a person in slavery, and the presiding judge agreed. "the indictment did not state an offense within the jurisdiction of the federal courts."[214]

The case was never tried. Angier wrote to Washington that "the judge … indicated that the State Court alone had jurisdiction of the matters and things embraced

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[210] COBB, supra note 20, at 195.
[211] BLACKMON, supra note 70, at 172.
[212] *Id.*
[213] *Id.* at 172-173.
[214] *Id.* at 173.

in these indictments." No local courts took the case. The Calloway family's fate was never known.[215]

As the Delta's black population grew from 1900-1930, the percentage of black farmers with their land dropped from 7.3 % in 1900 to 2.9% by 1925. The continuing migration of black tenants out of Mississippi entirely or to the Delta no doubt influenced these figures. This figure remained near 20% for the rest of the state during the same period. By 1925, the amount of black cash tenants declined to barely one-fifth of the amount in 1900.[216]

Former tenants who left the Delta objected to unfair treatment by their landlords, who usually refused to let them sell their cotton off the plantation and who paid them twenty to twenty-five cents per pound for it despite the actual market value being as high as forty. The inflated prices that came with credit purchases and settlements that were typically delayed or based on questionable arithmetic were also extremely sore points with black tenants.[217] The establishment of Mississippi's 1932 sales tax meant that sharecroppers would have to pay more for their seed and equipment whether they bought them on credit with an advance or paid for it themselves.[218]

Subpar schools were another problem for blacks in the Delta during the early 1900s. White teachers in Greenwood earned $50 monthly, while black teachers were only paid $30. Three teachers in Leland taught 350 black students; in Indianola, black teachers only made $15 to $20 monthly. Some of the fifth-grade students were teachers. A regular complaint was white officials' refusal to open black schools until the cotton harvest was significantly complete. Leland schools still were not operating on November 17, one year.[219] Mississippi whites never attempted to allocate school funds equally based on race. Instead, whites enjoyed clear educational advantages over their counterparts in majority white counties because many black children rarely attended school and were less likely to remain in school as they aged.[220]

The immense imbalance in operating budgets, length of school terms, teacher salaries, facilities, white indifference outright hostility, or ambivalence toward black education made it difficult to maintain even slightly adequate schools. Rural schools were often located in abandoned churches with shuttered windows blocking the sunlight. There were usually no tables, let alone desks or blackboards. A wet fall postponed cotton picking and, thus, the start of the school year; what's more, it made it difficult to collect enough wood to heat the school once cold weather arrived. Extremely cold weather made it almost impossible to conduct regular classes because the children could only huddle around the stove. It was usually vented via a broken windowpane.[221] Under *Plessy v. Ferguson*, all social activities and public accommodations should've been "separate but equal" sometime after it was decided in 1896. The fact that Delta blacks still had subpar schools in the early 1900s violated *Plessy v. Ferguson*.

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[215] *Id.*
[216] *Id.*
[217] COBB, supra note 20, at 112.
[218] *Id.* at 116.
[219] *Id.* at 151.
[220] *Id.* at 116.
[221] *Id.* at 144.

As a result of voicing their concerns about subpar public schools for their children to sympathetic whites, Delta Chinese leaders began a vigorous campaign of coercion and education to curb sexual interaction with blacks. Decreased barriers to Chinese immigration during World War II helped to facilitate their efforts. The Chinese also took greater pains to prove their prejudicial feelings toward blacks by relating unflattering stories of black behavior toward whites and making derogatory remarks about blacks. At the same time, the Chinese kept a distinct deference in their dealings with whites. Such behavior gradually convinced Delta whites that granting the Chinese racial equality would not endanger white unity and the stability of Delta society. Chinese students were no longer excluded in white Delta schools in the late 1930s….[222] The fact that Chinese students were no longer excluded from white Delta schools in the late 1930s also violated *Plessy v. Ferguson*. As *Plessy v. Ferguson* was intended to be implemented, Delta Chinese students should have received "separate but equal" schools just as Delta black students should have received "separate but equal" schools.

Delta planters wielded their political influence disproportionately to defend their class and regional interests as long as blacks could not vote and other whites did not pose a challenge to them. Major class-based disagreements among Delta whites would undoubtedly undermine the region's planters' influence in state politics and the stability critical to planter dominance within the Delta.[223]

Civil rights leaders had hoped that growing public outrage would force Delta whites to limit their acts of violence and accept the inevitability of black political participation and integrated public facilities. Still, even after MFDP's activities and the Freedom Summer movement had brought national attention to Mississippi's racial conditions, Congress had passed both the Civil Rights Act of 1964 and the Voting Rights Act of 1965, Delta whites adamantly resisted any move that appeared to represent even the most minor step in the direction of racial equality. A small plane dropped explosives and flares on an MFDP rally at Indianola in October 1964. The previous day, four whites had forced a [MFDP] campaign worker off the road, beaten and urinated on the person near Marks.[224]

Thirteen workers who attempted to force an Indianola restaurant to comply with the Civil Rights Act of 1964 were billy clubbed, arrested, and charged with trespassing and resisting arrest. A black man with an artificial leg and epilepsy owned one of the cars used. When he went to claim it and did not leave the station quickly enough to suit the officers due to his artificial leg, one of them began prodding him with his club as another leaped forward, shouting, "I'll beat up that son of a bitch!" After hitting the man's head against a wall, the policeman dragged him back into the office, charged him with refusing to obey an officer, and locked him up.[225] Billy clubbing 13 workers who attempted to force an Indianola restaurant to comply with the Civil Rights Act of 1964 and further injuring and arresting one who came to retrieve his car is a violation of the Civil Rights Act of 1964 and the discrimination it was intended to prevent.

According to Lafayette Surney, Ben Collins visited all of Clarksdale's black restaurants after the Civil Rights Act was passed and threatened to close them if they

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[222] *Id.* at 178-179.
[223] *Id.* at 174.
[224] *Id.* at 177.
[225] *Id.* at 238.

served black or white civil rights workers. Greenwood's mayor refused to accept responsibility for the safety of activists who attempted to desegregate businesses in the wake of the Civil Rights Act. He warned that "any business that integrates into the Delta is ruined as far as local people are concerned." Greenwood restaurants transformed themselves into private "key clubs" that catered to "members" (i.e., whites) only. For example, the "Crystal Grill" became the "Crystal Club" because the owner thought desegregation would cost him 90% of his regular business. He lost many customers who were not permanent residents of the Greenwood area because whites were required to pay a "membership fee" to dine at his restaurant.[226] Ben Collins's threat to all of Clarksdale's black restaurants after the Civil Rights Act passed was another violation of the Civil Rights Act of 1964 and the discrimination it was intended to prevent.

Unlike other local hotels, the Holiday Inn, part of a national chain, agreed to accept black customers; however, its restaurant was "closed for repairs" for an extended time. The Greenwood and Leflore County school systems refused to integrate in 1965, even though it meant the loss of federal funds. An underground Greenwood "civic group" attempted to intimidate blacks and economically blackmail whites who capitulated to integrationist pressures as the civil rights movement started to force at least token desegregation of some businesses and facilities. After one supermarket manager stated that "ninety-five percent of his business was already negro," this organization's newsletter proposed that "white people help him make it one hundred percent by not going in this store for anything."[227]

Greenwood's segregationists even condemned the doctors who voted to integrate the local hospital as "race-mixing, dollar-loving doctors." They urged local residents to "exert their wealth and influence to resegregate our hospital from TOP TO BOTTOM." In addition, local segregationists objected to integrating the Leflore Theatre. They claimed it deserved "the complete ostracizing of all white people" because it willingly integrated. The Leflore Theater was only integrated for blacks willing to brave intimidation, insults, and outright physical abuse. According to Frank Smith, a "gang of toughs" regularly walked inside and outside the theater with baseball bats, sometimes shining flashlights in patrons' faces to determine their identity.[228]

The Freedom Democratic Party filed suit to force a more equitable population distribution among Mississippi's congressional districts in October 1965. The district alignments at the time diluted black voting strength because the Delta lay within the Second District, which had only 608,441 residents as compared, for example, to only 295,072 in the Fourth. The legislature responded by again redrawing congressional lines, this time splitting the Delta three ways into two majority-white districts and a third with a majority 51% black population (but a white majority in registered voters and voting-age population) even as the court considered the case.[229]

Around 1965, two bills required at-large school board elections in Washington, Leflore, and Coahoma counties. Both bills required school board members to own $5,000 in real estate, a sum the average Delta black could not afford. What's more, the legislature passed a bill making the school superintendent an appointive instead of an

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[226] *Id.* at 238-239.
[227] *Id.* at 239.
[228] *Id.*
[229] *Id.* at 239-240.

elective position in 10 counties, four in the Delta, and permitting countywide referenda on the same issue elsewhere.[230]

Regardless of their increasing strength in numbers, black voters continued to face intimidation and fraud. Illiterate blacks who desired to vote for an all-black slate of candidates asked a white official to mark their ballots in Sunflower's 1967 local elections. On the eve of voting, the local election commission had decided not to permit a black official to be present to assist black voters. Black voters had to pass in front of the chief of police upon entering and make their way through a crowd of whites to exit.[231] The decision to not permit a black official to be present to assist black voters and forcing black voters to pass in front of the chief of police was a violation of the Fifteenth Amendment.

Racial tensions developed by active black politicians were further stoked by efforts to force the desegregation of public schools. Joetha Collier, a recent black graduate of Drew High School, was murdered in front of a black grocery store. Three white men were arrested and charged for her death. They had randomly selected Collier, who had won a good citizenship award at the graduation ceremony. Collier had been a member of the girls' basketball and track teams. Her white principal described her as "a good girl. She was a black student but was a good girl."[232]

Collier's murder sparked protests, arresting at least 37 people and started random rock-throwing incidents that Drew Mayor W.O. Williford to impose a dusk-to-dawn curfew. Aaron Henry[233] declared that "opposition to blacks registering to vote seems to have awakened the white community," citing vandalism against registration workers, threats, and harassment. Rainey Poole, a one-armed black plantation worker, was beaten and shot to death outside a "white" nightspot in Louise. The search for Poole's body resulted in the dragging of the Sunflower River, which in turn yielded the bodies of two other black men whose families thought were in Chicago. Angry blacks commenced a boycott of white businesses in the first united protest effort Louise witnessed. Whites' resort to violence to reassert their dominance was not new to Delta whites. Still, it now elicited bitter protests and even threats of a violent counterattack from blacks instead of intimidating them.[234] The civil rights movement significantly improved self-esteem among blacks in the Delta. Unleashing the black vote forced white public officials and politicians to treat blacks more respectfully.[235]

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[230] *Id.* at 244-245.
[231] *Id.* at 245.
[232] *Id.* at 247.
[233] *Id.* at 248-249.
[234] Mississippi History Now, https://mshistorynow.mdah.ms.gov/issue/aaron-henry-a-civil-rights-leader-of-the-20th-century (last visited May 9, 2023). Aaron Henry worked with other forces and groups to establish the statewide COFO. He served as president of COFO in 1962 and helped organize the "freedom vote," a mock statewide general election to parallel the Mississippi gubernatorial election of 1963.
[235] COBB, supra note 20, at 249.

IV. THE PERSISTENT EFFECTS OF DISCRIMINATION AGAINST ENSLAVED PEOPLE AND SHARECROPPERS IN THE MISSISSIPPI DELTA

> "Out of slavery – and the anti-black racism it required – grew nearly everything that has truly made America exceptional: its economic might, its industrial power, its electoral system, diet, and popular music, the inequities of its public health and education, its astonishing penchant for violence, its income inequality, the example it sets for the world as a land of freedom and equality, its slang, its legal system and the endemic racial fears and hatreds that continue to plague it to this day."[236]

Chattel slavery was based on race, not a condition. It was also permanent and inherited; thus, as generations of blacks were born into it, they passed their enslaved status on to their children. Enslaved people were viewed not as human beings but as property that could be traded, bought, sold, mortgaged, given as a gift, used as collateral, and disposed of violently.[237]

A. General Effects of Discrimination During Slavery, Reconstruction, and Jim Crow

1. Slavery

Enslaved people could not legally marry. They were not permitted to learn to read and were restricted from gathering privately in groups. Their children could be bought, sold, and traded away from them on auction blocks next to furniture and cattle. Kinship ties to mothers, siblings, and cousins meant nothing to masters and the courts. Owners could rape or murder their slaves with no legal ramifications.[238] Enslaved people could not own, will, or inherit anything.[239] Enslaved people were often worked to death to produce the highest profits for the white owners.[240]

Protecting the institution of slavery is one of the primary reasons the colonies declared their independence from Britain, which had grown deeply conflicted over its role in slavery by then. For the colonies to stop participating in the slave trade would have turned the colonies' economy on its head in both the South and the North. The wealth and prominence that made Jefferson and the other founding fathers think they could break from one of the world's most powerful empires occurred from the shocking profits of chattel slavery.[241]

The Declaration of Independence does not mention slavery. In addition, the framers of the Constitution carefully developed it to protect and preserve slavery without ever saying the word. While making their case for freedom to the world, the framers did not want to highlight their hypocrisy explicitly. The Constitution protected the black enslavers' "property," prevented the federal government from intervening to end the importation of enslaved Africans for 20 years, permitted Congress to mobilize

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[236] *Id.* at 250.
[237] JONES, supra note 12, at 4.
[238] *Id.* at 17.
[239] *Id.*
[240] *Id.* at 17-18.
[241] *Id.* at 18.

militia to stop insurrections by enslaved people, and forced states that had outlawed slavery to return runaway slaves.[242]

The embarrassing double standard of ongoing chattel slavery in a nation established upon individual freedom resulted in a hardening of the racial caste system.[243] By the early 1800s, both white Americans who participated in slavery and those who did not "had a considerable psychological as well as economic investment in the doctrine of black inferiority."[244]

In 1857, the Supreme Court captured this perspective in *Dred Scott*, deciding that free and enslaved blacks came from a "slave" race. The court held that while democracy was for citizens, the "Negro race" was "a separate class of persons" that the founders had "not regarded as a portion of the people or citizens of the Government" and had "no rights which a white man was bound to respect."[245]

Five years later, President Abraham Lincoln called a group of five esteemed black men to the White House for a meeting during the Civil War. President Lincoln was weighing a proclamation that would emancipate all enslaved people in the states that had seceded from the Union if the states didn't end the rebellion.[246] The proclamation would permit formerly enslaved people to join the Union Army in collaboration against their former masters. Like most white Americans, Lincoln opposed the institution of slavery as an inhumane system at odds with American values, but he also opposed black equality.[247] General Robert E. Lee surrendered at Appomattox nearly three years later, and the Civil War ended. Suddenly, four million blacks were free.[248]

2. Reconstruction

During Reconstruction, from 1865 to 1877, formerly enslaved people enthusiastically participated in the political process. For the first time in history, the South began to resemble democracy as blacks were elected to local, state, and federal offices. Sixteen black men served in Congress, and Hiram Revels of Mississippi became the first black Senator. Revels and Blanche K. Bruce became the first black men elected for almost 100 years until Edward Brooke of Massachusetts in 1967. Over 600 black men served in Southern state legislatures and hundreds more in local positions.[249]

They helped pass laws that prevented housing, accommodation, and public transportation discrimination and improved tax legislation. Perhaps their most significant achievement was the establishment of the public school. Now, black and white Southern students were required to attend schools like their northern counterparts.

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[242] *Id.*
[243] *Id.*
[244] For more details about the caste system in the Delta, *see infra* Part III.C.8., The Delta's Caste System.
[245] JONES, supra note 12, at 19.
[246] *Id.*
[247] *Id.* at 20.
[248] *Id.*
[249] *Id.*

Led by black activists and the Republican Party, Reconstruction witnessed the most significant expansion of civil and human rights in America's history.[250]

3. Jim Crow

By the time the sharecropping era began, sharecroppers continued to live in a system that kept them in poverty and poor health. Planters reduced their risks by holding back on cash advances, instead providing sharecroppers only the fundamental necessities of clothing and food. A sharecropper living on advances was almost sure to wear the cheapest clothes and shoes available while subsisting on a diet of cornbread, fat salt pork, and canned goods, mainly beans.[251]

Though black sharecroppers enjoyed little legal protection, many landlords who mistreated their tenants usually found it difficult to recruit or retain labor from year to year. January was "movin' month" for Delta sharecroppers. With no guarantee that the annual relocation of labor would distribute workers proportionately to the needs of the region's planters, even the most compassionate and tolerant Delta planters regularly found themselves in an annual scramble to retain or secure dependable labor. This reality necessitated that Delta planters exercise both restraint and firmness in just the right amounts to maintain control of their workers without repressing them enough to drive them away to another plantation.[252]

The ensuing interruption of the world cotton market at the outbreak of World War I was a factor in a particularly severe decline in black fortunes. By 1920, the small window of opportunity the Delta had previously afforded motivated blacks was firmly closed. It had begun to close in the 1880s once railroad and levee construction encouraged development and settlement, resulting in a vast influx of black farm workers. Delta planters' support for disenfranchisement firmly closed the window. The few blacks who owned even a tiny piece of land in the late nineteenth and early twentieth centuries were mired in a web of credit scarcity and indebtedness by 1920. They lacked the resources to continue the moderate upward momentum of the previous decades.[253]

In addition to the economic drop, the Delta's racial climate deteriorated during the early 1900s. Any Delta black who stepped too far out of line still risked a real possibility of reckoning with a lynch mob. According to NAACP statistics, the 17 counties lying entirely or partly in the Delta witnessed 66 lynchings. That number accounted for over 35% of Mississippi's 188 confirmed lynchings. From 1900 through 1930, these 17 counties averaged a lynching every 5 ½ months.[254]

4. Continuous Health Issues

An early 1927 study of 80 black families disclosed an average annual gross income of $579. That's $9,708.88 in today's dollars. The study was conducted during February, the leanest month for black tenants since they received their settlement in December. Planters usually began making advances in March. Unsurprisingly,

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[250] *Id.* at 21.
[251] COBB, supra note 20, at 102.
[252] *Id.* at 106-107.
[253] *Id.* at 113.
[254] *Id.* at 114.

researchers found that the black subjects' diets lacked nutrient and energy values. Almost 13% of those studied consumed no milk of any kind. Over 25% of the total calories ingested were from fats. Sweets contributed majorly because molasses was a staple. More than half of the families received over 10% less than recommended iron, phosphorous, calcium, and protein levels. Typical weekly meals included heavy amounts of cornbread, fried pork, and biscuits. One of the most impoverished families survived on the same coffee, cornbread, and rice for breakfast and dinner, in their case at 4:00 pm, of peas and cornbread that didn't even include the traditional piece of salt pork.[255]

Experts connected these dietary issues to the high death rate among Delta blacks and the occurrences of pellagra[256] and rickets.[257] One health officer estimated that both diseases were twice as prevalent among blacks as whites. Twenty of the families studied accounted for 61 doctor visits in one year.[258]

Income was a significant cause of these health problems. Tenants who received cash settlements displayed better dietary habits than tenants on plantations who received their settlements in supplies. Illiteracy and ignorance were other contributing factors. Many blacks were observed to be unaware of affordable, nutritious meals like macaroni and cheese. A black home demonstration agent claimed she had met Delta blacks who had never eaten ice cream.

The value of garden products was another function of improper diet among Delta sharecroppers in addition to low income and educational levels. The value of garden products per farm in the Delta during 1929 was less than $15 compared to a state average of $46.49. Planters blamed the failure to grow more vegetables on their black tenants' shiftlessness; however, Kathleen Knight's family found that their landlord refused to allot them any land for a garden after her family joined other whites who migrated to the Delta.[259]

5. The Delta's Caste System

Two social scientists, John Dollard and Hortense Powdermaker, observed Indianola's caste system in the late 1930s. Both Dollard and Powdermaker agreed that the antiquated, conflicting, and increasingly complex social system they studied was linked intricately to the Delta's plantation-based economy. Dollard provided multiple examples that proved the caste system offered whites economic advantages. For example, a 16-year-old black girl was a children's nurse in a white home. She worked during the summer from 6:00 a.m. until 6:00 p.m. for $1.50 weekly. She sought a

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255 *Id.* at 119.

256 American Osteopathic College of Dermatology, https://www.aocd.org/page/Pellagra (last visited Apr. 20, 2023). Pellagra is a systemic disease that results from severe vitamin b3 (niacin) deficiency. While mild deficiency may go unnoticed, a diet chronically low or without niacin may result in diarrhea, dermatitis, dementia, and possibly even death.

257 Mayo Clinic, https://www.mayoclinic.org/diseases-conditions/rickets/symptoms-causes/syc-20351943#Overview (last visited Apr. 20, 2023) Rickets is the softening and weakening of bones in children, usually because of an extreme and prolonged vitamin d deficiency. Rare inherited problems can also cause rickets.

258 COBB, supra note 20, at 119.

259 *Id.* at 119-120.

position as a maid that she hoped may pay up to $2.00 weekly to improve her circumstances.[260]

Under the Delta's unique socioeconomic arrangements, servants were "cheap, plentiful, and cheerful except during cotton-picking times in the fall." At that time, domestic servants temporarily left their city employers for the cotton fields. After all, deft pickers may make up to $2.00 daily, while a cook earned $3.00 to $6.00 weekly and supplemented her wages by "totin," or taking food from the white folks' kitchen home to her family. A young black child received $.25 for mowing the lawn plus a noonday meal of "a porkchop sandwich, hot biscuits, and a jug of cold buttermilk" from his employer. A washerwoman received $1.25 for doing laundry for a family.[261]

The system severely disadvantaged blacks economically. One black woman in her fifties told Powdermaker that she and her husband had only cleared money six times in 36 years of farming. Another couple who sharecropped and rented for 14 years only cleared money three times, with $110 being their largest profit.[262] Moreover, the caste system protected whites from any black competition. For instance, one white illegal bootlegger forced black bootleggers to sell at the same prices because white deputies would inevitably raid them if they did not. These same deputies typically ignored white bootlegging activities.[263]

In the few instances where blacks improved despite the obstacles they faced, they had to exercise severe caution lest their success provoke white resentment. Regardless of a sharecropper's humility, visible advancement by blacks could harm their safety and health. Ralph Ellison described a black man who was lynched for painting his home. Fannie Lou Hamer[264] recounted how her father had progressed from sharecropper to cash tenant, painted his own home, and obtained his implements and livestock, only to have a white man poison them and send the family back into sharecropping.[265]

The caste system also placed white Delta men in an advantageous sexual position. Even though white men appreciated a high amount of access to black women while black men were presumably forbidden to even so much as look at white women. What's more, a prevailing stereotype of promiscuity followed Indianola's lower-class black women.[266]

Alternatively, when white men fulfilled their fantasies with black women at the risk of their good name, it was as much winked at as frowned upon. Hill-country whites condemned the Delta for its miscegenation.[267] Despite their attempts to conceal it,

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[260] *Id.* at 153-154.
[261] *Id.* at 154.
[262] *Id.*
[263] *Id.* at 155.
[264] History Channel, https://www.history.com/topics/black-history/fannie-lou-hamer (last visited October 2, 2023). Fannie Lou Hamer helped focus attention on the plight of blacks throughout the South by passionately depicting her own suffering as a civil rights activist. For a more detailed discussion of Fannie Lou Hammer, *see infra* Part VI, True Stories of Former Mississippi Delta Sharecroppers and Discrimination They Faced, Section B.2., Fannie Lou Hamer, and Part VIII, Conclusion.
[265] COBB, supra note 20, at 155-156.
[266] *Id.* at 156-157.
[267] *Id.*

white Delta females exhibited substantial resentment of the sexual double standard that permitted their husbands to accept "gratification elsewhere" while refusing the same opportunity to them.[268]

Delta blacks suffered daily humiliation and regular reminders of their subservience whenever they contacted whites. Whites never addressed blacks as "Mr." or "Mrs."; instead, they often referred to them by their first names, no matter their position. Whites never offered to shake the hands of blacks, and white men remained seated while black women stood.[269] Furthermore, whites referred to blacks as "colored" or "nigra" if they didn't address them as "nigger." Whites also required blacks to come to the back door regardless of the purpose of their visit.[270]

Blacks placed outstanding stock in the value of their independent organizations because interaction with whites was fraught with the potential for emotional or physical harm. The black church played a significant role in protecting blacks from the psychological trauma inflicted by the Delta's caste society. From Powdermaker's perspective, the black church helped to maintain black self respect "in a situation geared to destroy it." The black church was the one community institution that blacks controlled.[271]

Like the church, the black family played a critical role in providing a safe space for growth and self expression. Still, the Delta's caste system forced black parents to educate their children regarding the racial realities of their daily lives. Most black parents just advised their children not to play with whites. If the child asked why, they usually responded, "That's just the way it is." Some black mothers went even further, cautioning their children not to give whites any sass and warning sons not to look into any white woman's face because she could say they wanted to rape her.[272]

Life under the caste system required Indianola's blacks to always maintain self control in the face of constant abuse and humiliation. Playing "the dozens," a test of wits focused on one's ability to give and absorb verbal abuse, was a major coping method.[273] Like the dozens, black mythology and folklore also provided critical emotional and psychological support for those on the lowest level of Delta society. Trickster tales featuring Brer Rabbit outsmarting alligators and foxes spread freely among Delta blacks, as did the exploits of "John,"[274] the wily enslaved person who always outwitted his mater. The story indicted the white man's slow wittedness and the difficulties masters faced in forcing enslaved people to comply when enslaved people knew that there was no threat of physical harm.[275]

Trickster behavior became a less effective response to Delta blacks' circumstances by the early 1900s. Once blacks began pursuing economic independence

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[268] *Id.* at 160.
[269] *Id.* at 163.
[270] *Id.* at 164-165.
[271] *Id.* at 165-166.
[272] *Id.* at 165.
[273] *Id.* at 166.
[274] Yale-New Haven Teachers Institute, https://teachersinstitute.yale.edu/curriculum/units/1993/2/93.02.08.x.html (last visited October 2, 2023). John became the trickster who outsits Old Mas, the slave owner, and wins his freedom.
[275] COBB, supra note 20, at 167-168.

and autonomy as free laborers, malingering could only harm one's coworkers or family. Similarly, stealing could result in dismissal or imprisonment. Trickster behavior eventually gave way to the "badman." The "badman" killed, robbed, tortured, and taunted without remorse. "Stagolee," compassionless and fearless, was the most famous mythical black badman.[276]

Delta blacks also admired blacks who worked within the system and triumphed over restrictions imposed by whites. John Henry was popular with Delta blacks as a black hero. John Henry's "man against machine" struggle was a powerful inspiration for them. "Shine" was another heroic figure. Shine supposedly escaped from the Titanic, where he was the fireman. Shine resisted the captain's pleas to remain onboard after the Titanic began to sink to save them in exchange for sexual favors or large sums of money.[277]

6. All about the Mighty Dollar

By the end of the 1800s, political disagreement in Mississippi usually followed the class, economic, and geographic lines that divided the Delta from the hills. For instance, the controversy over Mississippi's infamous convict lease system fed on the hill county's antipathy toward the Delta. Delta landlords had employed convict labor as late as the 1860s. Planter/speculator Edmond Richardson negotiated a deal with Alvin C. Gillem, Fourth District military commandant, whereby he gained control over Mississippi's convicts for several years. Richardson was reimbursed $30,000 annually for their transportation and upkeep instead of paying the state. Unsurprisingly, Richardson soon cleared thousands of acres of fertile Delta cotton land with such a labor force to lead. The legislature authorized the Penitentiary Board to relieve overcrowding at Mississippi State Penitentiary in 1876 by leasing convicts to individuals as laborers at a monthly rate of $1.10 per convict. In return, the lessee was to provide medical care, food, and shelter. With the assistance of a brokerage firm, Mississippi quickly leased 321 convicts to Delta planters. Convicts were subsequently leased to private employers to build levees and railroads, both of which were critical to expanding the Delta's prosperity.[278]

The convict lease system benefited robust Delta planting and corporate interests. In 1902, an investigating committee reported that the Yazoo Delta Railroad had employed 200 convicts at one time, but no record of payment could be located. As Mississippi began a policy of leasing private lands, working them with convict labor, and splitting the profits with the landowners, the Delta's large planters remained prime beneficiaries of the convict lease system.[279]

By 1900, one of the primary purposes of the South's judiciary was the coercion of African Americans to obey whites' social customs and labor demands. It was no coincidence that 1901 marked the complete disenfranchisement of almost all blacks throughout the South. Justices of the peace, local mayors, and provincial judges – usually men employed by white business owners who relied on the forced labor produced by the judgments – handed down sentences. Trial records and dockets were

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[276] *Id.* at 168.
[277] *Id.* at 172.
[278] *Id.* at 142.
[279] *Id.* at 143.

inconsistently updated. Blacks rarely had attorneys. Revenues were the equivalent of tens of millions of dollars into the treasures of South Carolina, North Carolina, Texas, Florida, Georgia, Louisiana, Mississippi, and Alabama – where more than 75% of America's black population lived at the time.[280]

This quasi-slavery was rooted in the budding industrial slavery that had begun to grow in the last years before the Civil War. The same men who used thousands of enslaved people to build railroads and proselytized for the use of enslaved people in southern mines and factories in the 1850s were also the first to employ forced black labor in the 1870s. The South's advanced system of and traditions of leasing enslaved people from one factory or farm to the next, trading for the cost of enslaved people, and retailing and wholesaling enslaved people regenerated itself around convict leasing in the 1870s and 1880s. It was not until the dawn of World War II that the practice would fully recede from their lives when deep global forces began to affect the lives of black Americans for the first time since the era of the international abolition movement before the Civil War.[281]

William Hemphill of South Carolina came to the Delta as a member of a levee crew in 1905. Hemphill sketched a portrait of his experience in the Delta's frontier society. Hemphill was surprised by the profiteering he encountered among Delta merchants….[282]

With the British textile industry's introduction of more than 12 million new spindles for them alone between 1900 and 1904, in addition to the establishment of new textile markets by the world's imperialist powers, there is a concern that world cotton demand may have outgrown the supply spread. Moreover, Britain no longer dominated the market of spinning lower-grade cotton to competitors like the United States, Japan, Germany, and France. Britain's textile magnates sought new sources of higher-quality cotton to supplement its imports from India and Egypt. Delta advocates noted that only 30% of the Delta was cultivated in 1900. They bragged that once fully cleared and drained, the Delta alone could generate as much cotton as the rest of the nation's cotton-growing areas combined. Finally, by maintaining drier, better-drained soil, Delta planters could experiment with some of the finer, higher quality strains of cotton comparable to those grown in Egypt and suitable to the requirements of British spinners determined to produce higher grades of cloth.[283]

Multiple British investors heeded these claims. A British consortium purchased approximately 40,000 acres of Delta land early in 1911 for an estimated $2 million to

[280] BLACKMON, supra note 70, at 7-8.
[281] *Id.* at 8-9.
[282] COBB, supra note 20, at 126.
[283] *Id.* at 100.

3 million dollars. Those lands ultimately became the property of Delta and Pine Land Company,[284] the world's largest cotton planting operation.[285]

Delta planters gave British entrepreneurs little reason to regret their investment. From the start, even more than the highly fertile soil and potential for growing higher quality cotton, the "superior type of farm organization" impressed these businessmen. The efficiency they observed seemed to ensure "profits without exception." Delta planters learned that efficiency derived from lower production costs, not just greater yields.[286] By the 1920s, the system of plantation management that typified large Delta plantations was primarily based on profitable operation via minimal cost expenditures and close supervision.[287]

Delta planters successfully incorporated modern, consolidated management techniques to maximize the profitability and efficiency of these operations. However, labor turnover remained a problem for Delta planters even as the Delta's black population increased and the Delta emerged as the South's most productive region for growing cotton.[288]

In 1910, nine Delta counties that represented only 11% of Mississippi's entire land area accounted for 28% of the value of its total cotton crop. Delta planters received consistently higher yields than farmers throughout the rest of Mississippi who were battling the boll weevil and soil depletion. Cotton harvests in the Delta increased by 20% between 1909 and 1915. Also, in 1915, the Delta accounted for half of Mississippi's cotton production.[289] At the height of slavery, cotton accounted for half of all American exports and 66% of the world's supply.[290]

V. TRUE STORIES OF FORMER MISSISSIPPI DELTA SHARECROPPERS AND DISCRIMINATION THEY FACED

A. The Ransom Family: My Family's Story

As previously mentioned, I learned a great deal about sharecropping when I completed my family history in 2013. Although the project took months, it was worthwhile. Writing the history helped to supplement all the stories I had heard growing up over the years. I can now place dates with events and trace the lineage of people I never knew, even unto descendants of my great-great grandfather's brothers. We have a unique name, and they have already done a great deal of research. I even learned why

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[284] Delta State University, https://www.deltastate.edu/library/departments/archives-museum/guides-to-the-collection/manuscript-collections/mccormick-collection/delta-pine/ (last visited May 9, 2023). Delta & Pine Land's (D&PL) corporate roots in the area surrounding Scott, Mississippi, were planted by a group of businessmen from Manchester, England. The business people wanted to secure a reliable supply of long-staple cotton to feed their private textile mills. The mill owners were part of the Fine Cotton Spinners and Doublers Association, an organization through which they created the predecessor to D&PL. In 1911, the Fine Cotton Spinners and Doublers Association purchased 38,000 acres around Scott in the rural and sparsely populated Mississippi Delta area. D&PL later became America's largest breeder, producer, and marketer of cottonseed.

[285] COBB, supra note 20, at 100.

[286] *Id.* at 100 - 101.

[287] *Id.* at 103.

[288] *Id.*

[289] *Id.* at 98-99.

[290] Jones, *supra* note 12, at 16.

some Ransoms left Mississippi and others, such as my line, remained. The fact that I am not supposed to know this information makes it more meaningful. Today, I advocate researching family history while the people who know are alive to tell. While Census records were helpful, I would never have heard all the stories I heard had I only relied on them. As a descendant of sharecroppers, I share my family's story to provide more insight into their daily lives and the discrimination they faced as sharecroppers in the Mississippi Delta.

1. My Great-Grandfather, the Wealthy Plantation Owner

The oldest member of the Ransom family whom my mother and her siblings personally knew, Arthur Ransom, Sr., who was also known as "Boose," was born at the onset of the Civil War in 1861. Believed to be part Choctaw, he lived in the Isola area most of his life. Much of his life centered around Oak Grove and starting his family on the Mound near Isola. Many of the Mound's inhabitants intermixed with Choctaws at some point. After researching my family history, I now think that "Boose" is a variation of "Bozzie," a nickname of another ancestor whom Boose may have resembled or known that got conflated through the years.[291]

The Mound[292] is near Inverness, Mississippi, where Oak Grove Missionary Baptist Church is located 3-1/2 miles southwest of Inverness on Mound Road. Arthur and Melvina (Polly) Ransom were two of Oak Grove's founding members. Oak Grove also served as the school for children on the Mound.[293]

Arthur Ransom, Sr. inherited land in Perthshire and Yazoo County, Mississippi, that the Ransom family received during Reconstruction. He employed several sharecroppers. At the end of every harvest, Augusta, a granddaughter from his youngest son, Teddy, remembers the sharecroppers coming to the house to receive what they were due after each crop at "break even time." As a young child, it was her job to break off a piece of peppermint [from a large block] for each person given to them with their earnings and necessities. Candy was a luxury at that time.[294]

2. My Grandparents, a Lifelong Sharecropper and a Lifelong Teacher

Boose's son and my grandfather, Arthur Ransom, Jr., worked as a sharecropper for most of his life and later became the foreman, a position of high trust, for B.A. Wright Farms, popularly known as the Mound, until the family left the Mound. As foreman, my grandfather had a set of keys to all the various buildings on the Mound that housed farm equipment and gas and was responsible for securing the facilities at the end of each day's work.[295]

Every Friday night, my grandmother or mother neatly re-wrote the information he received as foreman because my grandfather could not read or write. Each Saturday morning, my grandfather took it to the plantation office in Isola and collected the wages

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[291] RANSOM, supra note 3, at 1.
[292] *Id.* The name of the plantation where my grandfather, my mother, and her siblings sharecropped is B.A. Wright Farms. It was popularly known as "the Mound."

[293] *Id.*
[294] *Id.* at 2.
[295] *Id.* at 2-3.

owed each person. Then, after returning from Isola, my grandfather distributed the wages to each family.[296]

My grandmother did not pick cotton because she was a teacher. Besides being an elementary school teacher, Jessie was a licensed cosmetologist and an independent Avon representative. Although she did not have to pick cotton, my grandmother and my grandfather's sister sold lunch food to everyone in the fields. My grandmother made plates of hamburgers and vegetables or similar dishes that she sold to the sharecroppers for $1.25 apiece. My grandfather's sister sold hunks of bologna and salami with crackers and similar foods.[297]

In those days, church service began at 9 a.m. and lasted all day. My grandfather attended Oak Grove Missionary Baptist Church for his entire life and served as a deacon for sixty-some-odd years, starting when he was crowned in 1946. Before then, he was Superintendent of the Sunday School since 1944. All of his children from Mississippi were also members of Oak Grove. Most of the Ransoms, as well as the children and grandchildren of the other families from the Mound, make up Oak Grove's core members today.[298]

3. The Ransom Family's Life on the Mound

Every year, a hog, a cow, several chickens, and a goat (if there was one) were fed on a strict diet of corn for six weeks to clean them out. The family made soap, candles, salt, butter, sausage, ham, bacon, sausage, chitlins, and more from this yearly ritual. Like most families in the area, the Ransoms had a garden in which little space wasn't used for cotton. There were always fresh greens, potatoes, watermelon, and other vegetables on hand. However, there was no electricity or plumbing. They used an outhouse; if a person had to go through the night, there was a slop bucket. Irons were warmed by kerosene at the fireplace to keep them warm and placed at the foot of everyone's bed. Small children were kept and birthed by a midwife. The name of the midwife who birthed my great uncle is still on his birth certificate. Growing up on the Mound, most members of the Ransom family picked cotton from sun up to sun down when they were not in school.[299] The only exception was my grandmother.

Field hands often unearthed arrowheads and assorted Indian artifacts as they picked cotton from sun up until sundown every day except Sunday.[300] The mound-building Indians dwelt primarily on the sedimented high ground along the banks of rivers and streams. Choctaw Indians still controlled the Delta when Mississippi gained statehood in 1817.[301]

My mother and her siblings were hard on shoes, so that's why they had to work in the fields.[302] When I most recently discussed this with my mother for this article, she told me Mexicans came in the summer or fall to sharecrop on the Mound. She said they lived in dilapidated houses past a shop on the farm. She also said there were no

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296 *Id.* at 12.
297 *Id.*
298 *Id.* at 13.
299 *Id.* at 12.
300 *Id.*
301 COBB, supra note 20, at 5, 7.
302 RANSOM, supra note 3, at 12.

white sharecroppers on the Mound.[303] At the end of every harvest, each sharecropper received clothes from the plantation owner. Each person received a pair of black and white shoes (the kind popular for wearing to a sock hop), a pair of jeans, and two shirts (one dress shirt and one casual). Women also received a kan-kan (long, wide skirt).[304]

During the time, most of Oak Grove's members still lived on the Mound, families brought food to eat during lunch, and service continued until sundown. This is when people in different families caught up with friends in other families. You could always tell who had new clothes because that person would debut the new outfit at church and proudly strut. The phrase "read on" was popularly spoken to those who could read, as most people had little to no education. The person who could read was the one who read from the Bible during church service.[305] My mom told me the buses that took her and her siblings to school were segregated.[306] That is also what Dr. Olleye Shirley, a former sharecropper from another small Delta town of Mound Bayou, said.[307] Although the Supreme Court decided *Brown* in 1954 and *Brown II* in 1955, school buses in the Delta were still segregated as late as 1971.

4. Sunday, February 21, 1971

On Sunday, February 21, 1971, a tornado destroyed the town of Inverness and many homes southwest of Inverness. The 1971 tornado was the event that triggered news media to broadcast the difference between a "watch" and a "warning" when storms or tornadoes were forecast. The tornado left only the liquor store standing in Inverness. The town's businesses, many homes, Inverness Elementary School, and all of the churches were destroyed.[308]

When the tornado struck, sharecroppers received $.50 daily to sustain them until the crops were harvested and sold. For harvest time, they received $2 daily to chop cotton. They worked from 6:00 a.m. until 6:00 p.m. with a 15-minute lunch break. After the cotton was picked, they received $2 per hundred pounds. Pay may have been less before 1971.[309] My family no longer sharecropped once the family moved to Indianola, MS, after the tornado destroyed the town of Inverness and many homes southwest of Inverness on Sunday, February 21, 1971. The tornado ended mass sharecropping as they knew it on the Mound.

B. Other Notable Former Mississippi Delta Sharecroppers

1. The Shirleys

Once described by its founders as "the Jewel of the Delta" and by Theodore Roosevelt as an "object lesson full of hope for the colored people," Mound Bayou seemingly embodies the fate of black Deltans in general. As late as 1910, the Bank of

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303 Telephone Interview with Muriel Ransom Pollard, supra note 64.
304 RANSOM, supra note 3, at 12.
305 *Id*. at 13.
306 Telephone Interview with Muriel Ransom Pollard, supra note 64.
307 June Jordan, Mississippi 'Black Home,' The New York Times, (Oct. 11, 1970), https://www.nytimes.com/1970/10/11/archives/mississippi-black-home-a-sweet-and-bitter-bluesong-mississippi.html (last visited October 3, 2023).
308 RANSOM, supra note 3, at 3.
309 Telephone Interview with Muriel Ransom Pollard, supra note 64.

Mound Bayou claimed resources above $100,000. Moreover, the town had once been home to a thriving oil mill. The bank had been reorganized to save it by 1915, and the oil mill had closed. In addition, nearby land values had dropped by over 50% due to the depression in cotton prices between 1920-1922. Overextended independent farmers reverted into tenancy, and their wives and other women in the community turned to domestic service.[310]

Dr. Olleye Shirley recalls her interactions in her hometown of Mound Bayou with poor white children from nearby farms. They would knock on her family's door in winter and ask if they could wait for the school bus in their house. Sometimes, they even ate breakfast in her family's home before the bus came – for them. Dr. Shirley couldn't ride the bus.[311]

When this article was published in October 1970, the sharecropping system was ending in Mississippi. The ongoing disappearance of farm work resulted in black dependency on white planters who may or may not decide to hire them for seasonal field labor. Rural blacks whom farm machines had displaced or were expecting to be displaced increasingly looked to towns like Clarksdale for political leadership to follow.[312]

2. Fannie Lou Hamer

Fannie Lou Townsend began chopping and picking cotton at 6 in 1923. Fannie Lous had become W. D. Marlow's time and record keeper by the mid-1940s. Soon after, Fannie Lou married Perry Hamer, a tractor driver on the Marlow plantation, four miles east of Ruleville, Mississippi. Fannie Lou Hamer continued to work as a timekeeper and sharecropper on Marlow's plantation until August 31, 1962.[313]

On August 31, 1962, Fannie Lou Hamer attempted to become a registered voter in Indianola, Mississippi.[314] That same day, Marlow appeared at her home demanding she stop her political interests. Over the next several months, the Hamer family dodged severe physical violence, and Hamer became more involved in politics and social change.[315]

Next, Fannie Lou Hamer actively participated in Ruleville's SNCC [316] organization. Ms. Hamer became an SNCC field secretary and registered voter in 1963. Then, Ms. Hamer collaborated on voter registration drives with programs for impoverished black families in Mississippi. As one of the founding members and vice

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[310] COBB, supra note 20, at 112-113.
[311] June Jordan, Mississippi 'Black Home,' The New York Times, (Oct. 11, 1970), https://www.nytimes.com/1970/10/11/archives/mississippi-black-home-a-sweet-and-bitter-bluesong-mississippi.html (last visited October 3, 2023).
[312] *Id.*
[313] Linda Reed, Book Review, 68 J. S. HIST. 505 (2002) (reviewing CHANA KAI LEE, FOR FREEDOM'S SAKE: THE LIFE OF FANNIE LOU HAMER (1999)).
[314] *Id.* at 506. Indianola was the county seat.
[315] *Id.*
[316] History Channel, https://www.history.com/topics/black-history/sncc (last visited May 9, 2023). The Student Nonviolent Coordinating Committee (SNCC) was founded in 1960 after student-led sit-ins at segregated lunch counters across the South. It became the primary channel of student participation in the civil rights movement.

chairperson of the MFDP,[317] Ms. Hamer participated in the Democratic National Convention as a member of its delegation. In that role, Ms. Hamer challenged the all-white Mississippi delegation's seating during a televised address to the convention's Credentials Committee that gained her national notoriety.[318] As a result of the efforts of Ms. Hamer and the rest of the MFDP's delegation, the National Democratic Party pledged not to seat delegate groups that excluded blacks at the next convention in 1968.[319]

The Delta became what one historian called a "staging area" for the Great Migration. The black influx caused the Delta's black population to increase by 17% between 1910 and 1920 before remaining constant during the following decade. For many black emigres, the Delta became less a home than a temporary place of residence; the plantation where they sharecropped was where they "stayed," not where they lived; and escape or "rambling" became a dominant theme of the blues, an expressive new musical form that the Delta gave to America in the late 1800s and early 1900s.[320]

3. B. B. King

Born Riley B. King in 1925 on a plantation near Itta Bena and Indianola, B. B. King recalls

> the earliest sound of the blues that I can remember was in the fields, where people would be picking or chopping cotton. Usually, one guy would be plowing by himself or take his hoe and chop way out in front of everybody else. You would hear this guy sing most of the time – just a thing that would kind of begin, no special lyrics, just what he felt at the time. New York, 1974.[321]

I grew up listening to the blues for as long as I can remember. It was on the radio often, and my aunts were fans, so I always heard it in the car with them. I heard B. B. King play live quite a few times. Every summer, he gave us a concert in Fletcher Park. It was a family-friendly event I attended from childhood through college when he could no longer perform. I looked forward to the show every year; it was an excellent time to catch up with friends. The annual B. B. King concert was one of the best parts of growing up in the Delta.

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[317] The Martin Luther King, Jr. Research and Education Institute, https://kinginstitute.stanford.edu/encyclopedia/mississippi-freedom-democratic-party-mfdp (last visited May 9, 2023). In early 1964, as part of Freedom Summer, Mississippi civil rights activists affiliated with COFO in Mississippi launched the Mississippi Freedom Democratic Party (MFDP). Claiming status as "the only democratically constituted body of Mississippi citizens, they appealed to the credentials committee of the Democratic National Convention (DNC) of 1964 to recognize their party's delegation in place of the all-white Democratic Party delegation from Mississippi. Because Mississippi's blacks were barred from participating in the meetings of the state's Democratic Party, they decided to form their party.

[318] Linda Reed, Book Review, 68 J. S. HIST. 505 (2002) (reviewing CHANA KAI LEE, FOR FREEDOM'S SAKE: THE LIFE OF FANNIE LOU HAMER (1999)).

[319] *Id.*

[320] COBB, supra note 20, at 115.

[321] William R. Ferris, "Everything Leads Me Back to the Feeling of the Blues.": B.B. King, 1974, S. CULTURES, Winter 2006, at 5-9.

VII. RECOMMENDED SOLUTIONS

I recommend the following solutions to the sharecroppers' circumstances: a) entire families or members of families moving elsewhere; b) joining the military; c) obtaining as much formal education as possible, including graduate and professional degrees.

After crops were sold, sharecroppers were supposed to receive an equal share of the profits; however, they mostly borrowed against their share because they needed to be paid a living wage. This resulted in them receiving less after crops were sold. They assumed the younger family members' obligations and were forced to continue sharecropping because they owed the farmer. The younger sharecroppers often fled to the north and never returned because they knew they would never receive enough to get them out of the farmer's debt. Older members of their families who remained on the plantation took on the obligations of young sharecroppers who fled. Many of the older sharecroppers died owing the farmers.[322]

A combination of anger, disillusionment, frustration, and fear drove Delta blacks to join the great northward migration in large numbers. Between 1915 and 1920, 100,000 blacks left the Delta. The number of Mississippi-born blacks living in Illinois grew by 400% between 1910 and 1920, while Chicago blacks born in Mississippi increased fivefold during the same period. Many Delta blacks went north based on reports of industrial employment opportunities made available by the end of European immigration during World War I. Many were also attracted to Chicago and elsewhere by stories of recently departed kin and friends, just as the grandparents or parents of the northbound out-migrants had been lured to the Delta by tales of high cotton, rich black soil, and the presumably more significant opportunities for blacks in the postbellum South's labor-scarce plantation frontier.[323]

Many blacks enlisted in the military during World War II. Even that sacrifice was fraught with its own negative results. Planters were frustrated that black women who received money from husbands in the military during World War II were no longer compelled to work as domestics or pick cotton. Whites tried to convince them that working in the Delta's kitchens and fields was their patriotic duty. They also tried to enlist black teachers and ministers to help them get blacks to work on weekends with little success. At the same time, it was not a problem that white women received money from their husbands in service because most had never picked cotton.[324]

Many more programs, such as AmeriCorps[325] and the Peace Corps, abound today that offer public service and eventual employment opportunities.[326] At the time,

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[322] Telephone Interview with Muriel Ransom Pollard, supra note 64.
[323] COBB, supra note 20, at 115.
[324] COBB, supra note 20, at 198-199.
[325] AmeriCorps, https://americorps.gov/about/what-we-do (last visited July 25, 2023). AmeriCorps works with communities and supports a variety of public-private partnerships and governmental collaborations to address local challenges through service.
[326] Peace Corps, https://www.peacecorps.gov/about/history/ (last visited July 25, 2023). The Peace Corps shares a unique relationship with the countries and people our community has worked alongside in pursuit of world peace and friendship for more than 60 years. The Peace Corps' history is rooted in a shared vision of what is possible by working with, living alongside, and celebrating the diversity of cultures worldwide. The Peace Corps continues to build on its audacious mission through its dedication to advancing equity and inclusion and tackling our host communities' priority projects together.

with both parents sharecropping, most children could not afford college without a scholarship or donor. Now, grants such as the Pell Grant[327] make college more affordable. Community college and technical certifications are also effective career options. For descendants of sharecroppers such as myself, it is much easier to get an education and have a successful career today.

CONCLUSION

In many ways, sharecropping was another name for slavery. No, sharecroppers were not forced to sharecrop, but Mississippi Delta sharecroppers had few other options. As previously mentioned, even after the cotton picker helped to revolutionize sharecropping, Delta planters kept field hands on to pick the scrap cotton left after the harvest. The mass sharecropping system continued as long as it did in the Mississippi Delta because the interests of whites did not converge with those of blacks.

A. The Ransom Family

Here's how things ended up with my grandparents, my mother and her siblings, the generations of my family who were sharecroppers. After the 1971 tornado, the Ransom family eventually relocated to the family home in Indianola, or the "home house." My family stayed at Emma Anderson's home in Isola for two nights after the tornado until the roads cleared to be able to travel. From there, they moved into South Gate, a low-income neighborhood that was already being constructed in Indianola before the tornado hit. Most homes in South Gate were rented, with very few owners. Indianola let all the survivors live in South Gate rent free for the first year and then started charging rent the second year.

My grandparents owned and operated a small community grocery store on Church Street for several years after my grandfather retired from the Mound. Building on making lunch plates for the sharecroppers, the store sold short-order food and snacks. My uncle, who worked there on Sundays, told me the advent of the school lunch program is why it closed.[328]

My grandfather kept a garden in the backyard of the home house and watched baseball and wrestling most of the day. As long as he could, there was something good cooking on the stove every day when we got in from school with my grandmother.[329] My grandfather also mowed the yards of everyone in the family until his eyesight was so bad that he could no longer drive.[330]

Lawless Cornell (Johnson) Ransom is my grandparents' oldest child. Arthur and Jessie had four children: Muriel Ransom Pollard (my mother), Glenda Roslind Ransom, Arthur Rochelle Ransom (deceased - 2005), and Mellowniece Melvina Ransom White.

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[327] U.S. Department of Education, https://www2.ed.gov/programs/fpg/index.html (last visited July 25, 2023). Federal Pell Grants are usually awarded to undergraduate students with exceptional financial need without a bachelor's, graduate, or professional degree. (In some cases, whoever a student enrolled in a postbaccalaureate teacher certification program might receive a Federal Pell Grant.) You are not eligible to receive a Federal Pell Grant if you are incarcerated in a federal or state penal institution or are subject to an involuntary civil commitment upon completion of a period of incarceration for a forcible or nonforcible sexual offense.

[328] RANSOM, supra note 3, at 3.

[329] *Id.*

[330] *Id.* at 13.

Most of the Mississippi Ransoms live in or near Indianola. My grandfather passed away on July 16, 1998, at 88. My grandmother passed away on April 27, 2012, at the age of 83.[331]

Starting with my grandmother, Jessie earned a bachelor's degree from Mississippi Valley State University and a master's from Jackson State University.[332] She and her teacher friends commuted to Jackson State later in their careers and earned their masters together. Both of her degrees were in Education. Cornell graduated from Dillard University in New Orleans in 1971 with a degree in physics. He only lacked completing his thesis to earn his Ph.D. Cornell retired from teaching math and physics after 36 years. Cornell continued to teach Physics night classes at Mississippi Valley State University as an adjunct instructor even after he fully retired from teaching at the high school level. He was a much sought after math instructor throughout his career.[333]

Muriel Ransom Pollard is Arthur's oldest daughter with Jessie Mae and is my mother. Muriel graduated from Dillard University in 1975 with a B.A. in Chemistry; George Washington University, Washington, D.C., with a Master of Science in Project Management in 1997; and a Master of Education Degree in Education Technology from Strayer University in 2013. Muriel is employed as an Outside Plant Engineer Area manager for AT&T Mississippi, Mississippi, where she has been for 42 years now.[334]

Glenda also graduated from Dillard with a Bachelor of Science in Chemistry. Not long after Cornell went, my mom and Glenda joined him there, and for several years, the three of them were there together. Glenda later earned her Master of Science in Environmental Science from Mississippi Valley State University, where she served as Director of the Student Union before becoming Director of Student Housing. She formerly worked for Cooper Steel in her major field for several years before starting her second career. Mellowniece and her husband, Luther White, live in Greenville, near Indianola. Arthur Rochelle Ransom was an artist before he passed. Although he and Mellowniece attended college, neither graduated.[335]

B. Other Notable Former Mississippi Delta Sharecroppers

At the time of the article, October 1970, Dr. Shirley worked for the Hinds County Health Start Program. In that role, her accomplishments included the 1969 defeat of a Jackson school bond that would have funded segregated school construction.[336] On December 6, 2021, Lee Elementary, named after Confederate

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[331] *Id.* at 14.
[332] *Id.* at 5.
[333] *Id.*
[334] *Id.*
[335] *Id.* at 6.
[336] June Jordan, Mississippi 'Black Home,' The New York Times, (Oct. 11, 1970), https://www.nytimes.com/1970/10/11/archives/mississippi-black-home-a-sweet-and-bitter-bluesong-mississippi.html (last visited October 3, 2023).

General Robert E. Lee, was renamed after healthcare advocates Dr. Aaron and Ollie Shirley into Shirley Elementary.[337]

Ms. Hamer founded the Freedom Farm Cooperative from private donations to establish black independence in Mississippi. Freedom Farm Cooperative,[338] a non-profit, purchased and cultivated 40 acres of greens, peanuts, okra, corn, and squash. It also purchased, restored, and rented three homes to impoverished families. Besides, the cooperative administered a "pig bank" whereby everyone who received a pig signed a written agreement to keep that pig and to return two pigs from that litter to the cooperative. For the first time, the cooperative gave to poor whites. "You see," said Ms. Hamer, "this mean you got your milk, and you got your vegetables, your meat – and then you got your living. And that's the only way you survive in Mississippi, … if you control your own life." The Freedom Farm enabled 300 low-income families to survive. Both adults and children regularly stopped by Ms. Hamer's home to browse a small library of black literature in her home that she purchased from donations. Ms. Hamer passed on March 14, 1977, at Mound Bayou Community Hospital.[339]

B.B. King had only picked his last cotton crop in the Delta barely two years before he formed his band and went on the road after his hit song, "Three O'Clock Blues" topped rhythm and blues charts for months and launched his career as a professional musician. B.B. King's recordings and performances had shaped the blues for over 60 years at the time of this publication. His career spanned over 700 recordings, in addition to meetings with presidents, heads of state, and the Pope.[340]

C. Other Notable Former Mississippi Delta Sharecroppers

Of the 36 former Mississippi Delta sharecroppers I studied, here's a breakdown of their education.[341] Three did not attend any school. Four did not attend high school. Six did not complete high school. Nine completed high school. Four attended college without receiving a degree. Three completed college. Eight went on to receive professional degrees.[342] It should be noted that the sharecroppers studied are from multiple generations, spanning my grandparents to my mother and her siblings.

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[337] Jackson Public Schools, https://www.jackson.k12.ms.us/site/default.aspx?PageType=3&DomainID=16&ViewID=6446EE88-D30C-497E-9316-3F8874B3E108&RenderLoc=0&FlexDataID=22217&PageID=25#:~:text=Jackson%20Public%20Schools%20Celebrates%20Black%20History%20Month%20February,namesakes%E2%80%94Aaron%20and%20Ollye%20Shirley%20and%20Ida%20B.%20Wells (last visited Mar. 23, 2023).

[338] Linda Reed, Book Review, 68 J. S. HIST. 506 (2002) (reviewing CHANA KAI LEE, FOR FREEDOM'S SAKE: THE LIFE OF FANNIE LOU HAMER (1999)).

[339] June Jordan, Mississippi 'Black Home,' The New York Times, (Oct. 11, 1970), https://www.nytimes.com/1970/10/11/archives/mississippi-black-home-a-sweet-and-bitter-bluesong-mississippi.html (last visited October 3, 2023).

[340] William R. Ferris, "Everything Leads Me Back to the Feeling of the Blues.": B.B. King, 1974, S. CULTURES, Winter 2006, at 5-9.

[341] *See Appendix* #2, Role of Education in the Lives of Former Sharecroppers.

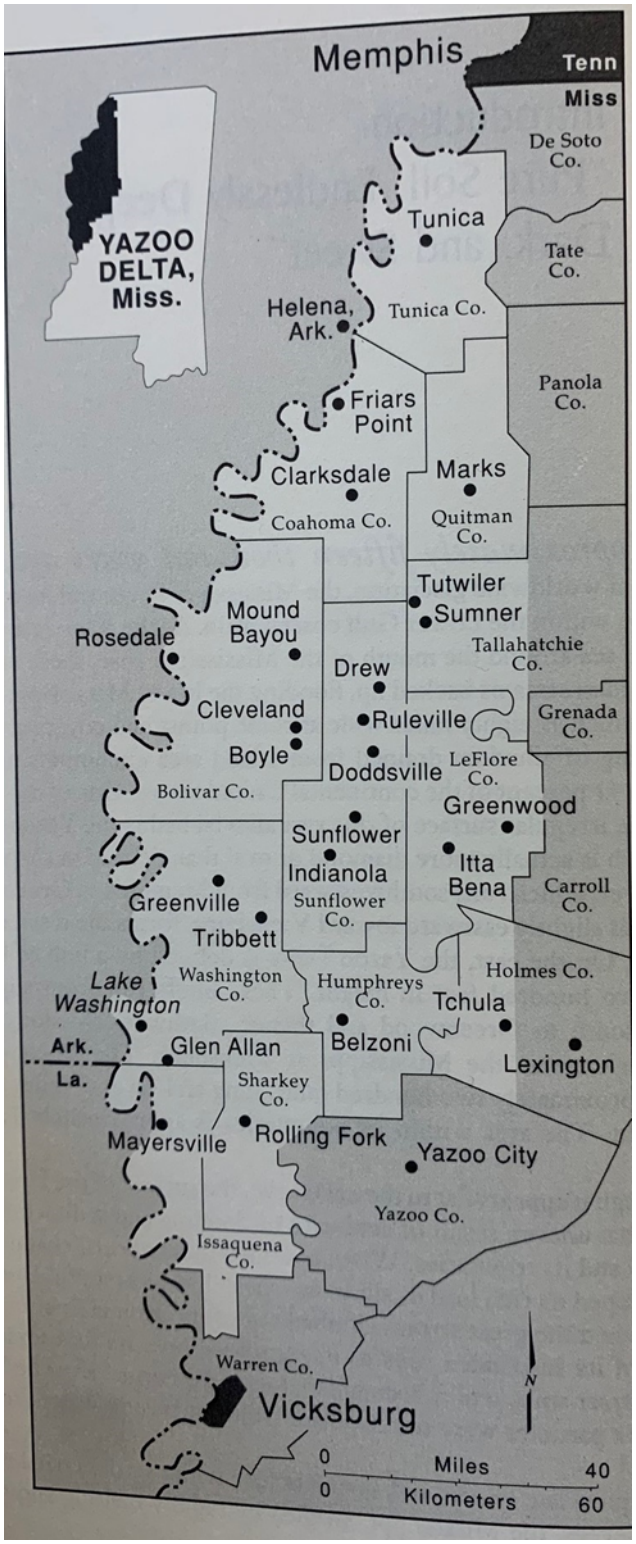
[342] Telephone Interview with Muriel Ransom Pollard, supra note 64.

APPENDIX

1. Map of Mississippi Delta

2. Role of Education in the Lives of Former Sharecroppers

1. Map of Mississippi Delta



2. Role of Education in the Lives of Former Sharecroppers

Name	Education	Career
*Charles Edward Daniels	no school	handyman; carpenter
*Beaulah Lockhart	no school	no known employment after sharecropping
*Clementine Lockhart	no school	maid
*John Wesley Johnson	no high school	lifelong sharecropper
*Alberta Johnson	no high school	lifelong sharecropper
Fannie Lou Hamer	no high school	SNCC Field Secretary; Mississippi Freedom Democratic Party Vice President; Freedom Farm Cooperative founder
#Arthur Ransom	no high school	lifelong sharecropper
*Elizabeth Bush	did not complete high school	Lewis Grocer
*Melvin Bush	did not complete high school	Lewis Grocer
*Elnora Daniels	did not complete high school	disabled
*Roberta Daniels	did not complete high school	maid
*Eddie Moffett	did not complete high school	Modern Line
*Robert Nelson	did not complete high school	Lewis Grocer
*Lonnie Daniels	high school	Vietnam vet
*Dency King	high school	Modern Line
*Fannie Lynn	high school	maid; certified nurse's assistant
*Roosevelt Lynn	high school	Lewis Grocer truck driver
*Rosie Lynn	high school	Sunflower County Extension Service; maid
*J.W. Washington	high school	Modern Line
*Daisy Ricks	high school	Modern Line
*Tempie Lee Spivey	high school	Belzoni fish processing plant
*Rosie Pearl Walls	high school	Sunflower County Department of Human Services
*Edward Moffett	college; no degree	mechanic
*Donnie Durant	college; no degree	Lewis Grocer
#Arthur Rochelle Ransom	college; no degree	artist
#Mellowniece Ransom White	college; no degree	former head teller for Planters Bank; sustitute teacher
*Arthur Moffett, Jr.	college graduate	Modern Line
*Edward Washington	college graduate	Sears appliance repairman
*Geraldine Washington	college graduate	Planters Bank head teller
*Alma Cole	professional degree	anesthesiologist
Dr. Aaron Shirley	professional degree	healthcare advocate
Dr. Olleye Shirley	professional degree	healthcare advocate
Dr. Henry	professional degree	drugstore owner, attorney, Mississippi Democratic Party Chairman
#Jessie Ransom	professional degree	third grade teacher
#Cornell Ransom	professional degree	high school math and science teacher; adjunct college Physics professor
#Muriel Ransom Pollard	professional degree	AT&T Mississippi Outside Plant Engineer Area Manager
#Glenda Ransom	professional degree	Director of Housing, Mississippi Valley State University
*March 6 2023 Muriel Ransom Pollard Interview	#2014 Ransom Family History	

EMPOWERING JUSTICE: BLOCKCHAIN AND LEGAL CHATBOTS AS CATALYSTS FOR ACCESS TO LEGAL AID

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Abstract: This paper examines the synergistic integration of blockchain technology and legal chatbots as a revolutionary approach to enhancing access to justice for the general public. It explores how these technologies collectively have the potential to overcome longstanding barriers in legal systems worldwide, making legal information, advice, and representation more accessible and equitable. By examining a variety of deployments, case studies, and theoretical frameworks, this study offers a thorough analysis of current applications and their impact on enhancing justice accessibility. Guided by the principles of the United Nations General Assembly's first resolution on Artificial Intelligence, this paper outlines a future direction for the legal field, emphasizing the need for ethical guidelines, inclusivity, and global cooperation to ensure the benefits of blockchain and legal chatbots are realized equitably. Through this exploration, the paper aims to contribute significantly to the ongoing development of legal technology, advocating for a legal ecosystem that leverages AI and blockchain to promote a more just, transparent, and efficient legal landscape.

Keywords: Blockchain Technology; Legal Chatbots; Access to Justice; Artificial Intelligence; Legal Aid; Legal Innovation

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INTRODUCTION

The quest for universal access to justice remains one of the most pressing challenges within the global legal landscape. Despite considerable advancements in legal frameworks and human rights protections, significant barriers prevent people from accessing the legal information, advice, and representation they critically need. These barriers, ranging from economic constraints to a lack of legal literacy, exacerbate the justice gap, leaving millions without the means to seek redress for grievances or protection under the law.

In this context, where the gap between legal needs and accessible solutions remains wide, the emergence of blockchain technology and legal chatbots represents a transformative ray of hope. Blockchain technology and legal chatbots, two of the most promising digital innovations, offer more than mere automation of tasks, they propose fundamentally new ways for individuals to engage with legal systems, ensuring that services are more accessible, transparent, and equitable.

Blockchain technology, first conceptualized by Satoshi Nakamoto[1] as a secure, transparent, and immutable record-keeping mechanism for Bitcoin transactions, promises to enhance the reliability and accessibility of legal documents and records. Its underlying principles of decentralization and security offer novel ways to manage and verify legal information, potentially revolutionizing how legal aid is provided and accessed.

Concurrently, legal chatbots, powered by advancements in artificial intelligence (AI), offer unprecedented access to legal information and assistance. Harry Surden[2] provides a comprehensive overview of AI and its application within the legal domain, particularly focusing on legal self-help systems often implemented as chatbots. These systems, as Surden notes, are designed to provide ordinary users with answers to basic legal questions, exemplifying how AI can facilitate easier navigation through the legal landscape. Such technology plays a crucial role in democratizing access to legal resources, allowing users to handle simpler legal issues independently without direct legal counsel.

Blockchain's secure and transparent record-keeping capabilities, combined with legal chatbots' ability to demystify legal processes and offer scalable advice, have the potential to significantly lower barriers to accessing justice. For instance, a blockchain system could ensure that vital legal documents are accessible and verifiable anywhere in the world, while a legal chatbot might provide someone in a remote village with the first legal advice they've ever received, tailored to their specific needs. Together, these technologies offer innovative solutions that could dramatically enhance access to justice, promising a future where legal support is not a privilege but a universally accessible service.

This paper aims to explore the transformative potential of integrating blockchain technology with legal chatbots in improving access to justice. It seeks to

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[1] Nakamoto, S. (2008). "Bitcoin: A Peer-to-Peer Electronic Cash System." [Online]. Available: https://bitcoin.org/bitcoin.pdf.

[2] Surden, H. (2019). Artificial Intelligence and Law: An Overview. *Georgia State University Law Review*, vol. *35*, no. 4, pp. 1305-1337. [Online]. Available: https://readingroom.law.gsu.edu/gsulr/vol35/iss4/8.

examine how these technologies, when synergistically employed, can reduce barriers to legal information, advice, and representation. Through the lens of existing deployments and case studies, this study will provide a thorough analysis of the role of blockchain and legal chatbots in legal aid initiatives, highlighting their effectiveness in making justice more accessible and equitable.

In navigating these discussions, the paper endeavors to contribute to the broader dialogue on leveraging technology to close the justice gap. By highlighting the potential of blockchain and legal chatbots as catalysts for change, this study aims to inspire policymakers, legal professionals, and technologists to collaborate in harnessing these innovations for the greater good of ensuring equitable access to justice. The insights gained from this analysis are intended to provide guidelines and recommendations, as well as guide future technological developments in the legal sector.

I. ACCESS TO JUSTICE: THE GLOBAL LANDSCAPE

Access to justice is a fundamental human right, integral to the protection of all other rights. It enables individuals and communities to claim their rights, challenge discrimination, and hold decision-makers accountable. Yet, for millions globally, access to justice remains elusive. This section examines the current global landscape of access to justice, identifying key barriers and the role technology has begun to play in bridging the justice gap.

A. Current Global Landscape of Access to Justice

The current global landscape of access to justice, as indicated by recent reports and analyses, reveals a complex and multifaceted picture. According to the World Justice Project,[3] the rule of law has deteriorated in a majority of countries, impacting over 6 billion people worldwide. Since 2016, a global rule of law recession has been observed, with 78% of countries experiencing a decline in their rule of law performance, particularly in the area of Fundamental Rights. This downturn has been exacerbated by authoritarian trends, weakening checks on government power and curtailing human rights, which has a direct bearing on access to justice. Furthermore, the functioning of justice systems has been challenged, with more countries struggling to provide timely, affordable, and accessible justice, highlighting the expanding justice system failures.

The Thomson Reuters Institute[4] illustrates the impact of the COVID-19 pandemic on court systems worldwide, pushing rapid modernization and the adoption of virtual hearings and digital technologies. While these innovations have improved access to justice for many, they also underscore persistent challenges such as hearing delays, the need for further technological enhancements, and the digital divide affecting litigants with lower levels of digital literacy.

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[3] World Justice Project. (2023). "Rule of Law Index 2023." [Online]. Available: https://worldjusticeproject.org/rule-of-law-index/global.

[4] Thomson Reuters Institute. (2023). "2023 State of the Courts Report." [Online]. Available: https://legal.thomsonreuters.com/content/dam/ewp-m/documents/legal/en/pdf/reports/state-of-the-courts.pdf.

Human Rights Watch [5] sheds light on specific instances where the erosion of access to justice and human rights protections have had devastating consequences, such as in Ukraine and Ethiopia. In Ukraine, the invasion and subsequent human rights violations by Russian forces, coupled with a crackdown on dissent within Russia, underscore the urgent need for accountability and protection of human rights. In Ethiopia, the armed conflict in the Tigray region has led to atrocities and a dire lack of access to justice for victims, emphasizing the importance of international scrutiny and efforts toward accountability.

Similarly, in Palestine, the humanitarian and legal crises have intensified dramatically following the escalation of violence on October 7, 2023. Human Rights Watch's report [6] underscores the severe repercussions of the military actions by both Hamas and Israeli forces, which have exacerbated the already critical challenges to accessing justice and upholding human rights in the region. The report highlights the widespread destruction of civilian infrastructure and restrictions on movement that have deeply compromised legal protections and human rights, making the pursuit of justice nearly unattainable for many affected individuals. This situation demands urgent international attention and action to address the dire human rights conditions and facilitate fair and equitable access to justice for all impacted populations.

Together, these sources paint a picture of a world grappling with significant challenges to ensuring access to justice for all. They underscore the importance of both addressing immediate issues within justice systems and the broader need for safeguarding human rights and the rule of law. The insights from these reports can serve as a valuable foundation for a deeper analysis of the global landscape of access to justice, highlighting key areas for intervention and the potential role of technologies like blockchain and legal chatbots in bridging the justice gap.

As evidenced by the reports assessing access to justice, it becomes evident that the obstacles facing justice systems worldwide are both varied and complex. These challenges not only reflect systemic issues within legal frameworks but also highlight the urgent need for innovative solutions to bridge the justice gap. As we explore these global challenges, it is essential to identify the specific barriers that individuals and communities face in accessing justice. Identifying these barriers is the first step toward developing targeted interventions that leverage technology, like blockchain and legal chatbots, to make justice more accessible and equitable for all.

B. Key Barriers to Access

Exploring the key barriers to access in detail allows us to fully appreciate how technological innovations like blockchain technology and legal chatbots can effectively address these challenges. This subsection categorizes these barriers into five main areas: economic constraints, legal literacy and awareness, geographical barriers, systemic discrimination and bias, and the complexity and inefficiency of legal systems. Each of

[5] Human Rights Watch. (2023). "World Report 2023." [Online]. Available: https://www.hrw.org/sites/default/files/media_2023/01/World_Report_2023_WEBSPREADS_0.pdf.
[6] Human Rights Watch. (2024). "Israel and Palestine: Events of 2023," in *World Report 2024*. [Online]. Available: https://www.hrw.org/world-report/2024/country -chapters/israel-and-palestine.

these barriers contributes to the justice gap in unique ways, affecting millions of individuals' ability to seek and obtain justice.

1. Economic Constraints: The cost of legal representation and the associated expenses of navigating the legal system often place justice beyond the reach of the economically disadvantaged. Legal fees, court costs, and even the indirect costs of legal action, such as time off work, can be prohibitive.

2. Legal Literacy and Awareness: A significant barrier to accessing justice is a lack of legal literacy. Many individuals are unaware of their legal rights or the processes available to seek redress. This gap in knowledge is compounded in communities with low education levels and in regions where legal information is not readily accessible or is provided in languages not understood by the population.

3. Geographical Barriers: In rural and remote areas, physical distance from legal services and courts can be a significant obstacle. The scarcity of legal professionals in these regions exacerbates the issue, making legal advice and representation hard to come by.

4. Systemic Discrimination and Bias: Certain groups often face systemic discrimination within the legal system. This can manifest in various forms, from bias in legal proceedings to laws that disproportionately impact certain communities. Such discrimination undermines trust in the legal system and deters individuals from seeking legal recourse.

5. Complexity and Inefficiency of Legal Systems: The complexity of legal procedures and the often slow pace of legal systems can deter individuals from pursuing justice. The opaque nature of many legal processes and the bureaucratic hurdles involved can be particularly daunting for those without legal expertise.

C. Bridging the Justice Gap with Technology

The digital revolution offers unprecedented opportunities to address barriers in access to justice. Technology, particularly in the form of legal tech innovations like blockchain and legal chatbots, is beginning to reshape the landscape of legal services, offering new pathways to access justice.

Blockchain technology, as discussed by Michael J. Casey and Paul Vigna in their book *The Truth Machine: The Blockchain and the Future of Everything*,[7] extends beyond transactional transparency to fundamentally reshape trust across various sectors. They highlight blockchain's potential to revolutionize legal systems by enhancing transparency, security, and accessibility, emphasizing its role in decentralizing control traditionally held by governmental and corporate entities. This transformation could democratize legal frameworks, making legal systems more accessible, transparent, and equitable. Casey and Vigna discuss blockchain's capacity to ensure the authenticity and permanence of legal documents, which could significantly streamline legal processes

[7] Casey, M. J., & Vigna, P. (2018). *The Truth Machine: The Blockchain and the Future of Everything*. St. Martin's Press.

and reduce reliance on traditional legal intermediaries, thereby lowering costs and making justice more widely attainable.

Concurrently, legal chatbots represent another transformative force within legal systems. Jameson Dempsey[8] has highlighted how these tools democratize access to legal information, automating routine tasks and providing essential legal guidance to individuals without direct access to legal resources. Kevin D. Ashley[9] has previously clarified the role of AI in law, demonstrating how legal chatbots can enhance legal research and decision-making processes, thus making the legal system more accessible and efficient. According to Ashley, the integration of AI in legal processes not only optimizes operations but also introduces new forms of legal practice that can significantly impact the accessibility of justice.

Such advancements in blockchain and legal chatbots could pave the way for more accessible, transparent, and efficient legal processes, embodying the promise of technology to bridge the justice gap.

As we explore the transformative potential of these technologies, it is imperative to identify specific applications that can effectively dismantle barriers within the justice system. This investigation will highlight several critical areas where technology can dramatically influence accessibility and fairness. This exploration encompasses several key areas where technology can have a profound impact:

·**Information and Education**: Digital platforms and legal chatbots can provide essential legal information and education, bridging the knowledge gap and empowering individuals to understand and assert their rights. By making legal knowledge more accessible, these tools help demystify legal processes for the general public.

·**Cost Reduction**: By automating aspects of legal service delivery, technology can significantly reduce the cost of accessing legal advice and representation. This makes legal services more affordable and accessible to a broader segment of the population, ensuring that financial constraints do not hinder access to justice.

·**Overcoming Geographical Barriers**: Online legal services and virtual courts can extend the reach of legal support to remote areas, overcoming physical distances that often prevent access to legal assistance. This is particularly transformative in rural or underserved regions where traditional legal help is scarce.

·**Addressing Systemic Bias**: Technology also plays a crucial role in identifying and mitigating systemic bias within the legal system. Through data analysis and the development of more equitable legal service delivery models, AI and blockchain can help create a more balanced and fair legal system.

Ultimately, the integration of blockchain and AI technologies into legal systems holds promise not only for enhancing legal operations but also for fostering greater accessibility and fairness within the justice system. By automating legal services, providing broader educational resources, and reducing economic and geographical

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[8] Dempsey, J., & Teninbaum, G. H. (2020). "May It Please the Bot?," *MIT Computational Law Report*, Aug. 14, 2020. [Online]. Available: https://ssrn.com/abstract=3678030.

[9] Ashley, K. D. (2017). *Artificial Intelligence and Legal Analytics: New Tools for Law Practice in the Digital Age*. Cambridge University Press.

barriers to legal access, these technologies can significantly narrow the justice gap. However, careful consideration must be given to the ethical implementation of these tools to ensure they serve the public equitably and maintain the integrity of legal processes. As we continue to harness the digital revolution to reshape legal aid, it remains imperative to align these innovations with core justice principles to ensure they contribute positively to a more inclusive and equitable legal landscape.

II. EMERGING USES OF BLOCKCHAIN TECHNOLOGY IN LEGAL AID

Blockchain technology, best known for underpinning cryptocurrencies like Bitcoin, possesses characteristics that make it particularly suited to addressing some of the challenges in providing legal aid. This section explores the relevance and potential applications of blockchain technology in legal aid, highlighting case studies that exemplify its impact on improving access to justice.

A. Relevance to Legal Aid

Blockchain's core attributes—transparency, security, and immutability—are fundamentally aligned with the principles of legal aid. The technology can create secure, transparent records that are resistant to tampering, making it an excellent tool for enhancing trust and accountability in legal processes. Specifically, in the context of legal aid, blockchain can offer innovative solutions for:

·**Document Verification and Management**: Blockchain's ability to securely store legal documents ensures their authenticity and accessibility, crucial for individuals who may lack the resources to safeguard important legal documents. The immutable nature of blockchain's ledger provides a reliable record of legal information and transactions.

·**Evidence Management**: Blockchain technology can timestamp and securely store digital evidence, preserving its integrity throughout its lifecycle. Blockchain ensures that each step in the chain of custody - the documented process that outlines the control, transfer, analysis, and storage of evidence - is transparently recorded and unalterable, safeguarding the evidence against tampering and making it highly reliable for use in legal proceedings.

·**Identity Protection**: Blockchain offers a means for secure digital identities, facilitating access to legal aid and other services for refugees, stateless individuals, and others lacking formal identification. This capability ensures individuals maintain autonomy over their identity verification processes, helping reduce the risk of identity theft and misuse.

·**Smart Contracts for Legal Aid**: Smart contracts can automate the execution of legal agreements, simplifying legal processes and reducing costs. The Ethereum Foundation[10] provides a comprehensive overview of Ethereum's technology, focusing on the role and technical underpinnings of smart contracts. It details how these contracts

[10] Ethereum Foundation. (2021). *Ethereum Whitepaper*. [Online]. Available: https://ethereum.org/en/whitepaper/.

function within the broader Ethereum platform and their potential to streamline processes across a variety of sectors.

Wright and De Filippi[11] explore the concept of Lex Cryptographia, which they describe as an emerging model where rules are governed by self-executing smart contracts and decentralized autonomous organizations. This paradigm shift could lead to a significant reorganization of legal frameworks as blockchain technology decentralizes the control traditionally held by governmental agencies and large corporations. As blockchain technology integrates more deeply into legal systems, it prompts a reevaluation of existing legal norms and necessitates the development of new regulatory approaches that balance innovation with the safeguarding of fundamental rights. Such advancements in blockchain for legal aid could pave the way for more accessible, transparent, and efficient legal processes, embodying the promise of technology to bridge the justice gap.

The potential of blockchain to serve as a foundation for decentralized and transparent legal processes is profound. This technology not only enhances the efficiency of legal operations but also significantly rebuilds public trust in legal systems, which is often compromised by perceptions of opacity and inefficiency. By integrating blockchain, legal frameworks can leverage its inherent transparency and security features to offer a more accountable and trustworthy system. This shift towards a more open and transparent legal process is essential in a world where public confidence in legal institutions needs to be bolstered.

While the benefits of blockchain in legal aid are significant, several challenges warrant careful consideration:

·**Cost and Storage**: Maintaining a blockchain system for document management can be costly, requiring significant digital storage space and ongoing maintenance.

·**Legal and Regulatory Hurdles**: The admissibility of digital evidence managed on blockchain poses legal challenges, necessitating adaptations in legal frameworks to accommodate new forms of evidence.

·**Privacy and Security**: For identity protection, blockchain must ensure that personal data is securely encrypted and accessible only to authorized parties. Privacy concerns are paramount, especially when sensitive personal data is involved.

·**Smart Contract Limitations**: Despite their potential to streamline transactions, smart contracts face hurdles in terms of legal recognition and enforceability. Misunderstandings or bugs in smart contract code can lead to disputes or unintended legal consequences.

The regulatory landscape for blockchain technology presents significant challenges that need to be navigated carefully. Lawrence Lessig's framework,[12] which outlines four modes of regulation—law, norms, market, and architecture—provides a useful lens for understanding these challenges. In the context of blockchain, regulatory

[11] Wright, A., & De Filippi, P. (2015). Decentralized Blockchain Technology and the Rise of Lex Cryptographia, *SSRN Electronic Journal*. [Online]. Available: https://doi.org/10.2139/ssrn.2580664

[12] Lessig, L. (1999). *Code: And Other Laws of Cyberspace*. New York: Basic Books.

concerns extend beyond traditional legal frameworks to include issues like code governance and the social norms of decentralized networks. According to De Filippi and Wright[13], blockchain's inherent features such as decentralization and transparency challenge conventional regulatory approaches, necessitating innovative governance models. They emphasize the need for a balanced approach that integrates both "regulation by code," where legal responsibilities are embedded within the blockchain's architecture, and "regulation via governance," which seeks to influence the behavioral norms of blockchain communities. This dual approach underscores the complexity of regulating such a transformative technology, which has the potential to reshape legal systems by enhancing transparency and reducing reliance on traditional legal intermediaries. Through this nuanced regulatory strategy, blockchain technology can achieve its full potential in providing accessible, efficient, and equitable legal services, aligning with the principles of justice and fairness.

These challenges highlight the need for ongoing research, regulation, and technological advancements to fully leverage blockchain's capabilities in the legal domain.

B. Case Studies

As we explore the potential of blockchain to revolutionize legal services, it becomes crucial to examine practical implementations that demonstrate how theoretical benefits are being applied in real-world scenarios. This section examines various case studies that illustrate how blockchain technology is making justice more accessible and legal operations more transparent.

1. Document Verification and Management: California's Legislative Initiative

California's legislative efforts to integrate blockchain technology into legal and governmental services exemplify its potential to secure and verify legal documents. In 2022, the enactment of Senate Bill No. 786[14] established a legal framework for using blockchain to issue certified copies of vital records, including birth, death, and marriage certificates. This law marks a significant pivot towards modernizing and securing public record issuance through technology. Championed by Senator Robert Hertzberg, the bill amends the Health and Safety Code[15] to authorize county recorders to use blockchain technology for issuing verifiable credentials. This innovative approach aims to streamline the distribution of vital records by enabling immediate electronic delivery, contrasting with traditional methods that often entail lengthy postal delays. This legislative move highlights California's commitment to adopting secure, efficient, and user-friendly technologies to improve public access to essential services. The use of blockchain in this context presents a transformative step towards more accessible and

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[13] De Filippi, P., & Wright, A. (2018). *Blockchain and the Law: The Rule of Code*. Cambridge, MA: Harvard University Press.

[14] Senate Bill No. 786 Chapter 704: An act to amend Section 103526.5 of the Health and Safety Code, relating to blockchain technology. (2022). [Online]. Available: https://trackbill.com/bill/california-senate-bill-786-county-birth-death-and-marriage-records-blockchain/2043852/.

[15] California Legislature. Section 103526.5 of the Health and Safety Code, relating to blockchain technology. [Online]. Available: https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=HSC&sectionNum=103526.5.

secure legal documents, positioning California as a leader in digital innovation within public services.

2. Evidence Management: Protecting Property Rights

Blockchain technology introduces an innovative approach in legal aid initiatives, particularly for evidence management and property rights protection. This integration is set to enhance access to justice and safeguard vulnerable populations' rights. Countries like Honduras and Georgia have showcased blockchain's significant potential in securing property rights, underlining its transformative impact on legal aid and broader justice access.

Honduras: In 2015, the Honduran government, in collaboration with Factom, a U.S.-based blockchain technology company, initiated a project to develop a nationwide, blockchain-based land registry system. This initiative aimed to combat land title fraud, create a secure, tamper-proof registry to protect landowners, and bolster economic opportunities by enabling farmers to borrow against their land assets. Despite showing initial promise and the potential to protect farmers, the project encountered significant hurdles. Governmental reluctance led to a stall in efforts, highlighting the challenges of political will and continuity in implementing innovative technological solutions in legal frameworks. The experience in Honduras underscores the complexities of integrating advanced technologies like blockchain into public administration, yet the project's vision showcases blockchain's significant potential in securing property rights.

Georgia: Georgia's collaboration with Bitfury [16], a firm specializing in blockchain software and hardware development, in 2016 to implement a blockchain-based land registry system represents a successful integration of blockchain in legal aid. By February 2017, the initiative had securely stored over 3.5 million title extracts on the blockchain. This system not only increased the security and transparency of land titles but also demonstrated blockchain's efficacy in enabling real-time auditing and reducing the risks of human error and forgery. This case exemplifies how blockchain can streamline legal processes, thereby enhancing public sector efficiency and building citizen trust.

These case studies illustrate the practical applications of blockchain in securing land titles and managing evidence. The Georgian project showcases a successful implementation with direct impacts on property rights protection, while the Honduran example highlights the importance of overcoming infrastructural, technical, and political challenges. Together, these experiences demonstrate that while blockchain offers significant opportunities to improve access to justice, its success depends on tailored, context-aware implementations that prioritize security, privacy, and data protection. Additionally, further research and development are needed to refine these solutions and ensure they can be adapted and scaled to different legal systems and jurisdictions.

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[16] Georgia: Authorities Use Blockchain Technology for Developing Land Registry. (2017). Eurasianet, Apr. 19, 2017. [Online]. Available: https://eurasianet.org/georgia-authorities-use-blockchain-technology-for-developing-land-registry.

3. Identity Protection: ID2020 Alliance Initiative

One of the most compelling applications of blockchain technology in legal aid is its potential to provide legal identity to the stateless and marginalized populations. The ID2020 Alliance (ID2020)[17], in collaboration with partners like the International Rescue Committee (IRC), has pioneered the use of blockchain for this purpose. Their initiatives underscore the importance of secure, verifiable digital identities, which they argue is a fundamental human right, as detailed in their Alliance Manifesto (ID2020 Alliance)[18].

The alliance's project in the Mae La Camp in Thailand, serving refugees, demonstrates the transformative power of blockchain. By offering blockchain-based digital identification linked to iris recognition, the program has made significant strides in improving access to healthcare through secure and accurate electronic medical records. Beyond healthcare, the project's architecture holds promise for broader applications, such as facilitating employment and educational opportunities for refugees by securely storing relevant records. This approach not only enhances the immediate well-being of individuals but also supports their long-term integration and autonomy by enabling access to crucial legal and social services.

This case exemplifies the practical, high-impact benefits of deploying blockchain technology in legal aid initiatives, highlighting the dual focus on technological innovation and ethical implementation to ensure digital solutions respect and protect individuals' privacy and rights. Furthermore, the ID2020 Alliance's commitment to ethical standards and privacy protection offers valuable lessons for similar initiatives, emphasizing the need for solutions that empower individuals without compromising their security or autonomy.

By leveraging blockchain to provide digital identities, the ID2020 Alliance is bridging a critical gap in access to justice and services, demonstrating a scalable model for how technology can address complex legal aid challenges. This initiative not only aids in the immediate provision of services but also contributes to a more inclusive and equitable legal framework globally, where every individual's right to identity and access to justice is recognized and safeguarded.

4. Streamlining Legal Aid with Smart Contracts

Smart contracts have the potential to transform the legal sector by making legal systems more accessible to a broader audience. These digital agreements, encoded onto the blockchain, are designed to execute automatically when predefined conditions are met, potentially eliminating the need for intermediaries and reducing costs.

One of the most illustrative examples of integrating smart contracts into legal frameworks comes from Arizona. In 2017, the state enacted House Bill 2417,[19] legislation recognizing the enforceability of smart contracts. This law opens the door for these digital agreements to be utilized across a broad range of legal contexts,

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[17] ID2020 Alliance. "About ID2020." [Online]. Available: https://www.id2020.org/

[18] ID2020 Alliance. *Alliance Manifesto*. [Online]. Available: https://www.id2020.org/assets/pdf/ID2020-Alliance-Manifesto.pdf.

[19] Arizona State Legislature. (2017). "House Bill 2417." [Online]. Available: https://www.azleg.gov/legtext/53leg/1r/bills/hb2417h.pdf.

demonstrating their practical utility in streamlining legal processes and marking a significant step toward wider acceptance within the legal system. The bill defines smart contracts as agreements recorded in a blockchain or distributed ledger, clarifying that these digital contracts have the same legal standing as traditional written agreements. This recognition facilitates their use in various legal areas, from estate planning—where individuals can manage and distribute their assets through legal documents such as wills and trusts—to financial transactions, further integrating technology into the legal sector.

The deployment of smart contracts in legal aid brings forth opportunities and challenges. Creating legally robust smart contracts requires collaboration between legal professionals and coders, emphasizing the need for interdisciplinary cooperation. Additionally, developing standard templates for common legal agreements could greatly facilitate their adoption, streamlining legal services and making them more widely available.

Smart contracts hold immense promise for automating routine legal transactions, such as contract executions, estate planning, and certain aspects of dispute resolution. This innovation could democratize access to legal services, making them more affordable and expedient. However, ensuring these contracts comply with existing legal standards and address privacy concerns is essential for their ethical use and acceptance.

While blockchain offers promising solutions, its implementation in legal aid faces challenges, including technological literacy, infrastructure requirements, and regulatory uncertainties. Addressing these challenges head-on, with a focus on user-friendly designs and robust legal and regulatory frameworks, is crucial to ensuring that blockchain-based legal aid initiatives are inclusive and accessible to all.

The deployment of blockchain technology in legal aid represents a significant step forward in leveraging digital innovations to enhance access to justice. By providing secure, transparent, and immutable solutions for document verification, evidence management, identity protection, and legal agreements through smart contracts, blockchain has the potential to significantly lower barriers to legal services, moving us closer to the goal of universal access to justice.

III. LEGAL CHATBOTS: DEMOCRATIZING LEGAL INFORMATION

In the quest to democratize access to legal information and services, legal chatbots stand out as a pivotal innovation. Leveraging AI and natural language processing (NLP), these digital assistants significantly enhance the accessibility of legal knowledge. Echoing Susskind and Susskind's vision in *The Future of the Professions*,[20] technology, particularly AI, is poised to fundamentally transform the work of human experts, including legal professionals. This shift toward digital solutions in legal services lays the groundwork for the rise of legal chatbots as instrumental tools in making legal assistance more accessible to the public.

[20] Susskind, R., & Susskind, D. (2015). *The Future of the Professions: How Technology Will Transform the Work of Human Experts*. Oxford University Press.

A. Development of Legal Chatbots

Legal chatbots have evolved significantly since their inception, becoming increasingly sophisticated due to advancements in AI and machine learning (ML). These technologies enable chatbots to understand and process natural language, interact with users in a conversational manner, and provide specific, context-aware legal information and guidance. Ranging from basic query-response bots to more intricate systems capable of generating legal documents, legal chatbots are reshaping legal service landscapes by making them more accessible and user-friendly.

The development of legal chatbots is part of a broader trend in the evolution of AI technologies. Early concepts of AI can be traced back to foundational works in computer science and AI. For instance, in the seventeenth century, Pascal and Leibniz designed machines for performing fixed operations, such as addition and multiplication, though they were not programmable by modern standards. Later, Charles Babbage's revolutionary idea for *the Analytical Engine* marked a significant advancement, introducing the concepts of memory ("store") and a processing unit ("mill"), even though no such engine was ever built.[21]

In 1950, Alan Turing introduced the Turing Test in his seminal paper "Computing Machinery and Intelligence", published in *Mind*.[22] This test, challenging whether machines can exhibit intelligent behavior indistinguishable from that of humans, laid the groundwork for evaluating machine intelligence. Turing's insights are crucial in understanding the capabilities of chatbots, including legal chatbots, which must parse and respond to complex legal inquiries with a sophistication that could, ideally, pass this test. In the context of legal chatbots, this means being able to understand and respond to legal queries in a manner that is indistinguishable from a human legal expert. This includes understanding the context of the query, providing accurate and relevant legal advice, and doing so in a conversational manner. The ability of chatbots to mimic human-like conversations and provide legally sound advice hinges significantly on these early concepts of AI, demonstrating a direct lineage from Turing's theoretical frameworks to practical applications in today's legal technologies.

In 1952, Arthur Samuel, an American pioneer in the field of computer gaming and AI, developed one of the earliest ML programs through his checkers-playing program, marking a significant milestone in AI. His work demonstrated the potential of machines to learn and improve from experience without human intervention. Samuel's application of the alpha-beta pruning algorithm within this program showcased how AI could optimize decision-making processes, influencing future developments in AI, including the evolution of legal chatbots. This early example of self-learning software laid the groundwork for more complex AI systems that could handle tasks such as legal document analysis and interactive client engagements.[23]

In 1957, Frank Rosenblatt, an American psychologist notable in the field of AI, invented the perceptron, a pioneering model in neural network design and one of the first ML algorithms. This work, initially conducted on an IBM 704 at Cornell

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[21] Babbage, C. (1864). *Passages from the Life of a Philosopher*. London: Longman, Green. Reprinted in 1968 by Dawsons of Pall Mall, London.

[22] Turing, A. M. (1950). "Computing Machinery and Intelligence," *Mind*, vol. *59*, pp. 433–460.

[23] Samuel, A. (1959). "Some Studies in Machine Learning Using the Game of Checkers," *IBM Journal of Research and Development*, vol. *3*, no. 3, pp. 210-229.

Aeronautical Laboratory, enabled computers to recognize patterns and categorize data through learned experiences. Rosenblatt's perceptron was a foundational development in the evolution of AI, influencing subsequent innovations in neural networks crucial for advancements in AI applications, including the development of sophisticated legal chatbots capable of parsing complex legal inquiries.[24]

Pioneers like Herbert Simon[25] and Allen Newell[26] explored the potential of machines to solve problems and perform tasks traditionally requiring human intelligence, laying the groundwork for AI technologies that could store and manipulate knowledge in ways that mimic human decision-making.[27]

AI development continued throughout the twentieth century, with works by researchers such as Feigenbaum,[28] who explored knowledge engineering and its practical applications, and Boden,[29] who provided comprehensive insights into AI's technical and philosophical aspects. These developments paved the way for modern AI technologies that can store and manipulate knowledge in ways that mimic human decision-making.

In 1985, Geoffrey Hinton, David Rumelhart, and Ronald Williams introduced backpropagation, a seminal technique for training neural networks, in their influential paper "Learning Internal Representations by Error Propagation." This method, which involves adjusting the weights of neurons within the network to minimize errors, has become fundamental to modern AI technologies and the development of sophisticated legal chatbots.[30]

In 2018, Geoffrey Hinton, Yoshua Bengio, and Yann LeCun were awarded the Turing Award for their groundbreaking work on deep learning, a critical component in the advancement of technologies like legal chatbots.[31] Deep learning is a type of ML that uses multi-layered neural networks, called deep neural networks, to simulate the complex decision-making power of the human brain. The adjective "deep" refers to the use of multiple layers in the network. This field of ML, which involves multi-layered neural networks, mimics the decision-making processes of the human brain and has vast applications, from digital assistants to autonomous vehicles. Their contributions have had a significant influence on the development of legal chatbots. Deep learning is fundamental to the functioning of chatbots as it enables them to learn from past

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[24] Rosenblatt, F. (1957). "The perceptron: A probabilistic model for information storage and organization in the brain," *Psychological Review*, vol. *65*, no. 6, pp. 386-408.
[25] Simon, H. A. (1969). *The Sciences of the Artificial*. Cambridge, MA: MIT Press.
[26] Newell, A. (1982). "The Knowledge Level," *Artificial Intelligence Journal*, vol. *18*, no. 1, pp. 87-127.
[27] Hayes, J. R. & Simon, H. A. (1976). "The understanding process: Problem isomorphs," *Cognitive Psychology*, vol. *8*, pp. 165-190; Newell, A. (1982). "The Knowledge Level," *Artificial Intelligence Journal*, vol. *18*, no. 1, pp. 87-127.
[28] Feigenbaum, E. A. (1980). "Knowledge Engineering: The Practical Side of Artificial Intelligence," HPP Memo, Stanford University.
[29] Boden, M. (1977). *Artificial Intelligence and Natural Man*. Basic Books.
[30] Rumelhart, D. E., Hinton, G. E., & Williams, R. J. (1986). "Learning internal representations by error propagation," in *Parallel Distributed Processing: Explorations in the Microstructure of Cognition*, vol. *1: Foundations*, MIT Press, pp. 318-362.
[31] Association for Computing Machinery. (2018). "ACM A.M. Turing Award 2018: Yoshua Bengio, Yann LeCun, and Geoffrey Hinton." [Online]. Available: https://www.acm.org/media-center/2019/march/turing-award-2018.

interactions, improve their responses over time, and provide accurate legal advice based on the patterns it recognizes in the data. Such advancements are crucial for developing tools like AI-driven legal document analyzers and chatbots capable of predicting legal case outcomes with high accuracy.

The concept of legal chatbots, specifically, is a more recent development, emerging from the broader field of AI as technologies became sophisticated enough to process natural language and engage in dialogue with users. Chatbots, in general, became prominent in the business world around 2016 as AI became more integrated into consumer and enterprise messaging platforms, allowing for more direct interactions between businesses and customers.

ML methods and AI have further evolved to include tree-based methods, random forests, neural networks, and transformers, offering flexible and sophisticated solutions for a variety of tasks, including legal applications. Tree-based methods allow for data categorization based on key characteristics, while random forests combine several trees to improve prediction accuracy and guard against overfitting. Neural networks consist of interconnected artificial neurons, enabling complex problem-solving, as seen in applications like voice assistants and face recognition. Transformers, a recent development in neural networks, capture relationships within text sequences, revolutionizing NLP and giving rise to large language models (LLMs) like ChatGPT.

The evolution of AI chatbots, such as ChatGPT, reflects this broader transformation within AI. Such AI-driven legal chatbots can handle a range of legal tasks, from conducting in-depth legal research to generating complex legal documents and offering general legal information to the public. The historical development of chatbots has seen a dramatic shift from basic conversational agents to advanced AI-driven platforms like GPT-3, developed by OpenAI in 2020. GPT-3 stands out for its capacity to understand and produce human-like text across various contexts, thanks to its training on extensive text data. This advancement has broadened the potential applications of chatbots, particularly in fields requiring high levels of information processing and interaction, such as the legal profession.

A notable development in this area comes from researchers at the University of California, San Diego. Their scientific paper, *People Cannot Distinguish GPT-4 from a Human in a Turing Test*, presents a compelling case for the advanced capabilities of GPT-4. The study involved about 500 participants who were asked to determine whether they were communicating with a human or a model of AI in a blind test. Remarkably, in 56% of cases, people mistakenly believed that GPT-4 was human.[32] This outcome underscores the sophisticated nature of GPT-4, which was judged to be human 54% of the time, outperforming earlier models like GPT-3.5 (50%) and significantly outpacing the simplistic ELIZA system (22%).[33]

This progression highlights the potential for AI to perform tasks traditionally handled by human legal professionals. By offering precise and timely legal information,

[32] Jones, C. R., & Bergen, B. K. (2023). "People cannot distinguish GPT-4 from a human in a Turing test," *arXiv*. [Online]. Available: https://arxiv.org/pdf/2405.08007.
[33] Jones, C. R., & Bergen, B. K. (2023). "People cannot distinguish GPT-4 from a human in a Turing test," *arXiv*. [Online]. Available: https://arxiv.org/pdf/2405.08007.

drafting documents, and providing general legal advice, AI chatbots are transforming how legal services are accessed and delivered.

The implications of these advancements are profound. As AI systems like GPT-4 continue to evolve, their ability to mimic human interaction and provide accurate legal advice will likely increase. This could democratize access to legal information, making it more accessible to a broader audience and potentially transforming the landscape of legal services.

In terms of practical application, AI systems and AI-driven legal chatbots hold the promise of revolutionizing legal research, document generation, and general information provision, thereby enhancing the efficiency and accessibility of legal services. Furthermore, they can assist in legal analysis by offering insights based on a comprehensive understanding of legal precedents and regulations, contributing significantly to the strategic planning and decision-making processes in legal cases.

In the legal sector, the advent of legal chatbots was driven by a need to make legal services more accessible and cost-effective. Joshua Browder's DoNotPay, which started as a chatbot to contest parking fines and has since expanded to cover a range of legal issues, exemplifies how chatbots can provide access to justice by automating the collection of information from users and guiding them through legal processes. Other legal chatbots, like LegalMation, have demonstrated the versatility of AI in automating aspects of legal service delivery, from providing legal information and guidance to drafting legal documents. These developments underscore the potential of AI to transform the legal industry by making legal knowledge more accessible to the general public.

As AI technology continues to advance, with increasing computational power and the development of more sophisticated ML models, the potential applications of AI in the legal domain and beyond are likely to expand. This ongoing evolution suggests a future in which AI could play an even more significant role in democratizing access to legal services, further enhancing the efficiency and accessibility of legal processes.

A critical aspect of this evolution is the continuous improvement in NLP capabilities, which allow AI systems to understand and generate human-like text with increasing accuracy. This progress enhances the ability of chatbots to interact with users more effectively while also broadening the scope of tasks they can undertake. For instance, AI-driven chatbots can now assist with complex legal research by analyzing vast amounts of legal texts and case law to provide relevant information quickly and accurately. This ability to process and interpret legal documents in real-time can significantly reduce the time and effort required for legal research, making it more efficient and cost-effective.

Moreover, the integration of AI into legal services extends beyond document generation and research. Advanced AI systems are being developed to support decision-making processes by providing data-driven insights and recommendations. For example, predictive analytics powered by AI can help legal professionals assess the potential outcomes of cases based on historical data, enabling them to develop more effective strategies. This analytical capability is particularly valuable in litigation, where understanding the likelihood of various outcomes can inform settlement negotiations and trial preparations.

Another emerging application of AI in the legal field is in the area of compliance and risk management. AI-driven tools can monitor and analyze regulatory changes, helping organizations stay compliant with evolving legal requirements. These tools can also identify potential risks and provide recommendations for mitigating them, thereby enhancing the overall risk management strategy of businesses.

Furthermore, AI technologies are being leveraged to improve access to legal services for underserved populations. For instance, chatbots can provide legal assistance in multiple languages, making legal information accessible to non-native speakers. Additionally, AI-driven platforms can offer legal support to individuals in remote areas where access to traditional legal services is limited. By bridging these gaps, AI has the potential to democratize access to justice and ensure that legal services are available to all, regardless of their geographic location or socioeconomic status.

The development and deployment of legal chatbots represent a significant step forward in the evolution of the legal industry. As AI technologies continue to advance, they will increasingly support legal professionals in delivering more efficient, accurate, and accessible services. This transformation promises to enhance the overall quality of legal services, making them more responsive to the needs of society and contributing to a more just and equitable legal system.

B. Technical Architecture and Types of Chatbots

Chatbots, also known as conversational agents, represent a significant advancement at the intersection of AI and human-computer interaction. These AI-driven applications simulate interactive human conversation using sophisticated elements of AI, including NLP and ML. Initially designed to mimic human responses through simple rule-based systems, chatbots have evolved into complex AI frameworks capable of engaging in nuanced dialogues. This progression has been bolstered by significant advancements in NLP, which helps chatbots understand user queries, and ML, which enables these systems to learn from interactions and improve responses over time.

Chatbots function through a multi-component architecture that includes:

1. User Interface (UI): The primary interaction layer where users can input text, click buttons, or use voice commands. The layout varies across platforms to optimize user experience.

2. Processing Engine: Handles the input from the UI and manages the flow of data through the system, ensuring responses are delivered back to the user.

3. Input Analysis Module: Normalizes and filters user input to extract key query components, which are then analyzed to determine user intent.

4. Response Generation Module: Acts as the core intelligence of the chatbot, using pattern matching to generate appropriate responses based on the analyzed input.

Chatbots are generally categorized into:

1. Rules-Based Chatbots: Operate on predefined rules or playbooks that trigger specific responses to recognized inputs or keywords, suitable for structured tasks like data retrieval.

2. AI Chatbots: Utilize AI and NLP to understand complex sentence structures and dynamically generate responses by understanding the context and intent behind inquiries.

While AI chatbots provide dynamic, contextually relevant responses and are invaluable in sectors like legal services where nuanced communication is crucial, they require extensive data sets and substantial training to perform effectively. This advanced functionality allows them to not only handle straightforward informational requests but also assist in complex scenarios such as legal document analysis and interactive client engagements.

The technical sophistication of AI chatbots significantly enhances user interaction, making them powerful tools for fields requiring high levels of information processing and tailored interactions, such as the legal profession.

C. Capabilities, Impact, and Challenges

Legal chatbots are emerging as powerful tools in the legal sector, offering a range of services that enhance accessibility and democratize legal knowledge for the general public.

1. Legal Information and Guidance: Legal chatbots provide users with instant access to legal information, helping them understand their rights, obligations, and the legal procedures relevant to their situation. This is particularly beneficial for those unable to afford traditional legal consultations or access standard legal resources.

2. Document Drafting and Assistance: Some legal chatbots go beyond information dissemination to assist users in creating legal documents, such as contracts, wills, and legal letters. By automating this process, chatbots can reduce the time and cost associated with obtaining legal documents, making legal services more affordable.

3. Enhancing Legal Literacy: By making legal information more accessible and understandable, legal chatbots play a crucial role in enhancing legal literacy. This empowerment enables individuals to make informed decisions about their legal issues and, when necessary, seek appropriate legal representation.

4. 24/7 Availability: Legal chatbots are available around the clock, providing a constant source of legal support. This is particularly important for individuals in time-sensitive situations or in regions where legal services are not readily available.

5. Efficiency in Legal Processes: Legal chatbots can streamline many routine tasks such as case intake, query sorting, and initial client interviews. This automation reduces the workload on human staff, allowing legal professionals to focus on more complex and nuanced aspects of cases. Moreover, chatbots can facilitate quicker responses to common inquiries, significantly speeding up the legal consultation process.

Despite these capabilities, the implementation of legal chatbots comes with several challenges that need careful consideration to maximize their benefits and minimize potential drawbacks:

·**Legal Information and Guidance**: Ensuring that the information provided is accurate and up-to-date is crucial. There is also a risk of oversimplifying complex legal issues, which might mislead users.

·**Document Drafting and Assistance**: Quality control is essential to avoid errors in legal documents. Chatbots must be programmed to handle a wide variety of document types and scenarios accurately.

·**Enhancing Legal Literacy**: Chatbots need to be designed to cater to diverse user groups with varying levels of legal knowledge, ensuring that the information provided is clear and comprehensible.

·**24/7 Availability**: Continuous availability requires robust infrastructure to prevent downtime and ensure reliability.

·**Efficiency in Legal Processes**: The integration of chatbots into existing legal workflows can be complex, requiring significant adjustments and training for legal staff.

·**Bias and Impartiality**: Due to their reliance on data-driven models, there is a risk that chatbots may perpetuate existing biases found in the training data, potentially influencing their responses and decisions.

·**Data Privacy and Security**: As chatbots handle significant volumes of personal data, ensuring this data is processed and stored securely is paramount to comply with stringent data protection laws.

·**Legal and Ethical Risks**: The deployment of AI in legal contexts raises ethical concerns, including the potential misuse of AI tools for deceptive purposes.

·**Regulatory Compliance**: Chatbots must adhere to existing regulations, which can vary by jurisdiction. This is especially complex for chatbots operating across international borders.

·**Quality of Legal Advice**: While chatbots can provide quick legal information, they cannot yet replicate the depth of advice provided by human legal professionals, which can limit their utility in complex legal matters.

Technological Limitations: Despite rapid advancements, the technology behind chatbots is not foolproof. Issues like misunderstanding user queries or providing incorrect information can undermine their effectiveness.

These challenges underline the importance of strategic planning and regulatory foresight in integrating chatbots into legal practices. Careful management can mitigate these risks, ensuring that chatbots serve as beneficial tools in the legal sector. Legal chatbots present unique regulatory challenges due to their intersection with digital communication, privacy, data protection, and AI laws. Currently, there is no global legal framework dedicated solely to regulating chatbots. Instead, most existing regulations are broad, covering various aspects of digital technologies.

One example of a legal framework dedicated to regulating chatbots is the B.O.T. Act enacted in California, which requires disclosure when bots are used to communicate or interact online.[34] This law specifically addresses the transparency of bot-based communications, mandating that bots disclose their automated nature when interacting online, particularly when influencing sales or elections. It applies exclusively to automated accounts interacting with California residents on platforms with substantial traffic. The act's scope includes legal chatbots, necessitating clear disclosures to users interacting with these AI systems.

The B.O.T. Act exemplifies how regional legislation can address certain aspects of chatbot functionality, but the broader challenge remains: developing a cohesive legal framework that accommodates the diverse functionalities and impacts of chatbots. As chatbots become more integrated into global digital services, consistent international regulations will be crucial. This need is recognized by international bodies like the European Union (EU) and the Organisation for Economic Co-operation and Development (OECD), which are working towards a unified taxonomy for digital technologies. However, disparities in definitions and regulatory approaches still pose significant challenges.

Legal chatbots face several regulatory challenges that complicate their integration into global legal systems. Jurisdictional issues arise because chatbots can be accessed worldwide, raising questions about which jurisdiction's laws apply, especially in cases involving data privacy and consumer protection. For instance, a chatbot developed in the United States but accessed by users in the EU must comply with both the General Data Protection Regulation[35] requirements and U.S. privacy laws, which can have conflicting provisions.

Ensuring data privacy is particularly complex, as chatbots process vast amounts of potentially sensitive information, ranging from personal identifiers to detailed legal inquiries. Compliance with data protection laws, such as the GDPR in Europe, the California Consumer Privacy Act (CCPA)[36] in California, and other regional regulations, requires sophisticated data management practices. This includes obtaining user consent, ensuring data encryption, and implementing robust data access controls to prevent unauthorized disclosures.

Furthermore, the legal status of chatbots often remains undefined, creating uncertainty about how existing laws apply to them. This ambiguity can lead to difficulties in enforcing legal standards for accuracy and reliability in the information provided by chatbots and for issues related to AI transparency, accountability, and inherent biases. Transparency involves making it clear when users are interacting with a chatbot rather than a human, as well as how the chatbot's algorithms make decisions. Accountability pertains to who is responsible for errors caused by chatbots. Inherent

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[34] California State Legislature. (2018). SB-1001 Bots: disclosure. [Online]. Available: https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201720180SB1001

[35] 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). *Official Journal of the EU* L 119/1, 04.05.2016. [Online]. Available: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02016R0679-20160504

[36] California Consumer Privacy Act (CCPA), State of California Department of Justice. [Online]. Available: https://oag.ca.gov/privacy/ccpa

biases in AI can result from the data sets used to train chatbots, potentially perpetuating existing prejudices and unfair practices.

Additionally, intellectual property rights concerning the content and advice provided by chatbots pose yet another layer of complexity. Questions arise about who owns the legal content generated by chatbots and how this content can be protected from unauthorized use or reproduction. Addressing these challenges requires a nuanced approach to regulation that keeps pace with technological advancements and ensures that chatbots operate within legal and ethical boundaries.

Ensuring compliance with such varied regulations requires meticulous design and operation of chatbots to align with legal standards, including those pertaining to consumer protection, privacy, and the ethical use of AI. This involves regular audits, updates to reflect changes in law, and mechanisms for users to report and correct errors. The dynamic nature of chatbot technology and its rapid evolution further complicates this regulatory landscape, highlighting the need for laws that can adapt to technological advancements without stifling innovation.

Legal frameworks should ideally be flexible and forward-looking, providing a balanced approach that fosters innovation while safeguarding public interest. International cooperation and harmonization of laws can help in creating a more coherent regulatory environment, facilitating the global deployment and acceptance of legal chatbots.

D. Examples of Legal Chatbots in Action

Legal chatbots are transforming the landscape of legal services, providing various tools and solutions to both legal professionals and the general public. These examples highlight the versatility and impact of these technologies in addressing diverse legal needs and enhancing access to justice:

·**DoNotPay**: Originally launched to contest parking tickets, DoNotPay has expanded its services to cover a broad range of legal issues from consumer rights to housing law, illustrating how chatbots can navigate complex legal systems to benefit users.[37]

·**LegalMation**: This platform is designed to automate the drafting of legal documents for litigators, showcasing how chatbots can streamline the work of legal professionals and potentially reduce costs for clients.[38]

·**Casetext**: Known for its prowess in legal research, Casetext simplifies the process of finding legal cases, statutes, and regulations for professionals, enhancing the efficiency and accuracy of legal research through its AI-driven approach.[39]

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[37] DoNotPay. [Online]. Available: https://donotpay.com.
[38] LegalMation. [Online]. Available: https://www.legalmation.com.
[39] Casetext. [Online]. Available: https://casetext.com.

·**Juro**: Specializing in contract management, Juro facilitates the creation, editing, and signing of contracts, becoming an essential tool for professionals managing these tasks. It is also known for its excellent customer support service.[40]

·**Harvey AI**: Focuses on automating tasks within the legal field, helping reduce manual workload and boost productivity.[41]

·**AlphaChat**, **Cliengo**, and **Xenioo**: These platforms offer customizable chatbot solutions for a variety of legal applications, from document management to consultations, demonstrating the adaptability of chatbots to meet specific legal needs.[42]

·**LawDroid**: Dedicated to legal automation, LawDroid optimizes various legal tasks and services, improving efficiency and productivity within the legal domain.[43]

·**Ross Intelligence**: Employs AI to enhance legal research by providing answers to natural language questions about legal issues and references to relevant passages in legal texts.[44]

·**BillyBot**: A junior clerk chatbot designed to assist in scheduling legal appointments and directing clients to appropriate legal resources based on their queries.[45]

·**Lex Machina**: Provides legal analytics to firms by mining litigation data that can help predict the outcomes of legal cases, offer insights into the effectiveness of different case strategies, and evaluate the performance of opposing counsel.[46]

·**LegalRobot**: An AI-driven platform that simplifies the understanding and drafting of legal documents. It offers document analysis, automated contract drafting, and customizable legal documents tailored to individual needs. Its advanced algorithms translate legalese into plain language, making complex legal documents accessible to non-lawyers and ensuring the accuracy of generated content.[47]

·**SoloSuit**: A chatbot designed to assist US consumers in responding to debt-related lawsuits, providing guidance and support throughout the legal process.[48]

·**Ailira**: Ailira, or "Artificially Intelligent Legal Information Research Assistant," uses NLP to provide public legal information and assist with drafting legal documents. Designed to make legal advice more accessible, Ailira serves as a helpful resource in navigating complex legal issues, offering solutions that cater to both professionals and the general public.[49]

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[40] Juro. [Online]. Available: https://juro.com.
[41] Harvey AI. [Online]. Available: https://www.harvey.ai.
[42] AlphaChat. [Online]. Available: https://www.alphachat.ai; Cliengo. [Online]. Available: https://www.cliengo.com/en; Xenioo. [Online]. Available: https://www.xenioo.com.
[43] LawDroid. [Online]. Available: https://lawdroid.com.
[44] Ross Intelligence. [Online]. Available: https://www.rossintelligence.com/features.
[45] BillyBot. [Online]. Available: https://www.billybot.co.uk.
[46] Lex Machina. [Online]. Available: https://lexmachina.com.
[47] LegalRobot. [Online]. Available: https://legalrobot.com.
[48] SoloSuit. [Online]. Available: https://www.solosuit.com.
[49] Ailira. [Online]. Available: https://www.ailira.com.

Each of these examples represents a significant advancement in the integration of AI technologies within the legal sector, offering novel solutions that enhance service delivery, reduce costs, and improve accessibility to legal resources.

These AI-driven tools are designed to enhance and automate specific tasks, such as streamlining legal query handling, document drafting, and case analysis. By automating routine tasks, they allow legal professionals to concentrate on more complex legal strategies. While many legal chatbot solutions are subscription-based, some offer free or low-cost services that can significantly benefit the broader public. These affordable options are especially valuable for individuals who might not otherwise have access to legal services, such as asylum seekers, visa applicants, and others who can't afford legal services. By providing access to justice through these solutions, legal chatbots can help bridge the gap in legal service availability and enhance legal literacy across various communities.

A notable emerging trend is the development of legal chatbots for use within large law firms, designed to enhance rather than replace existing legal services. These tools signify a significant shift in the legal industry, supporting firms in increasing efficiency and potentially boosting revenues. While the technology to implement these chatbots is readily available, adoption rates vary. Progressive firms are embracing these tools to modernize operations and enhance market presence, reaping tangible benefits in revenue and client engagement. However, integrating chatbots necessitates substantial changes in business models, including adjustments to fee structures that favor more dynamic client interactions through subscription or per-interaction payments. Over time, widespread adoption of legal chatbots is likely, promising to transform operational dynamics within law firms and potentially redefine revenue generation strategies.

Legal chatbots present a significant opportunity for proactive law firms that seek to harness new technologies to revolutionize their business models and revenue streams. Moreover, as law firms integrate chatbots, the roles within these firms are likely to evolve. There may be an increased demand for technical teams, marketers, and business developers as firms strive to differentiate their services and align their strategies with new technological capabilities. For firms that prioritize innovation, adopting chatbot technology can enhance efficiency, client engagement, and market competitiveness. Other law firms should closely monitor developments in this area and consider integrating chatbots as part of their service offerings once they become more widely adopted and proven in practice.

Although chatbots can handle a significant portion of document review and client inquiries, they are not expected to replace human lawyers entirely. The nuanced understanding and empathy that lawyers bring to complex legal issues are irreplaceable. Instead, AI is anticipated to act as a complement to human skills, enhancing the efficiency and reach of legal services rather than eliminating the need for trained professionals.

As AI continues to reshape various sectors, the legal field is not exempt from its transformative impact. Lawyers remain indispensable for creating content, interpreting laws, and providing legal representation. However, the adoption of AI tools requires that lawyers not only develop new skills to effectively leverage these technologies but also embrace the potential productivity benefits they offer. The saying,

"AI will not replace you, but you may be replaced by someone who uses AI to outclass you," underscores the urgency for legal practitioners to master these new technologies. A crucial skill in this transformation is the ability to communicate effectively with AI-powered language models, such as those used in LLMs. Mastery of these tools will enable legal professionals to enhance their service delivery, maintain competitiveness, and provide more insightful, efficient legal advice. As the legal industry evolves, it is imperative for both individual lawyers and legal firms to engage in continuous learning and skill development in AI applications. This proactive approach will position them as leaders in a technologically advanced legal market.

The increasing integration of AI across various sectors is profoundly reshaping job roles, particularly in fields like law, where repetitive tasks are ripe for automation. This shift offers significant productivity benefits, yet it also necessitates that legal professionals not only adapt but actively engage in continuous learning to remain effective. Advanced economies, especially, are likely to see a transformation in job structures as AI takes on more cognitive tasks, making ongoing education crucial for legal professionals. As we embrace these changes, the legal sector must proactively develop educational programs that address the emerging needs and skills gaps brought about by AI and blockchain technologies. Implementing comprehensive training programs and updating legal curricula to include AI literacy and technical skills will ensure that legal professionals can leverage AI tools to enhance their practices effectively and ethically. This strategic focus on education will empower lawyers to use AI as a tool for enhancing service delivery, ultimately leading to more informed and efficient legal advice.

The influence of AI and legal chatbots on legal practice areas is a topic of ongoing debate. While there are concerns that these technologies might displace traditional legal jobs, the reality is more nuanced. Legal chatbots and AI tools are poised to transform certain aspects of legal work, particularly those involving routine and repetitive tasks. This shift can free up lawyers to focus on higher-value, complex activities that require human judgment and expertise, such as court appearances, negotiations, and strategic planning.

Recent studies highlight the significant impact of AI in the legal sector. According to research by Goldman Sachs, up to 44% of legal tasks could potentially be automated, streamlining repetitive and non-value-adding activities.[50] This could greatly enhance productivity within legal professions, especially in administrative tasks that are particularly suitable for automation. Moreover, comprehensive research from Oxford and Cambridge Universities reveals that AI-assisted lawtech not only improves internal operational efficiencies but also enriches the roles of legal professionals. By automating routine tasks, AI allows lawyers to focus on higher-value activities, fostering interdisciplinary collaborations and requiring new skill sets that enhance

[50] Briggs, J., & Kodnani, A. (2023). The Potentially Large Effects of Artificial Intelligence on Economic Growth. *Global Economics Analyst*, Goldman Sachs Economics Research. [Online]. Available: https://www.key4biz.it/wp-content/uploads/2023/03/Global-Economics-Analyst_-The-Potentially-Large-Effects-of-Artificial-Intelligence-on-Economic-Growth-Briggs_Kodnani.pdf.

client service. These developments suggest that AI is not merely a tool for efficiency but also a catalyst for broadening the scope and quality of legal services.[51]

The International Monetary Fund's 2024 report on "Gen-AI: Artificial Intelligence and the Future of Work" underscores the broader implications of AI on global labor markets. It estimates that nearly 40% of jobs globally are susceptible to AI integration, with advanced economies facing higher exposure due to their cognitive-task-oriented job structures. In these economies, approximately 60% of jobs could see a significant transformation or enhancement from AI technologies. This evolution necessitates that legal professionals adapt by acquiring new skills to leverage AI effectively, thereby potentially reaping productivity benefits.[52]

Further illustrating the nuanced impact of AI, the European Central Bank (ECB) emphasizes that the fear of AI leading to widespread job losses may be overestimated. Their research indicates that, particularly in sectors like the legal field, AI may lead to job transformation rather than elimination, suggesting a gradual integration of AI technologies rather than abrupt displacement.[53] Similarly, the Bank for International Settlements (BIS) report shows a general optimism about gen AI enhancing job prospects, particularly among younger, more educated, and higher-income individuals. The survey shows that demographic factors like age, income, and education significantly influence the adoption and perception of AI's benefits and risks. Moreover, concerns about data security are prevalent, with overwhelming support for stringent AI regulation, and a greater trust in government and financial institutions over big tech companies to protect personal data.[54]

This gradual integration of AI, as discussed by the ECB and BIS, suggests that within the legal industry, the adaptation to AI technologies could significantly alter job roles, enhancing efficiency and shifting focus towards higher cognitive and interpretative tasks, necessitating a proactive approach in legal education and continuous professional development to meet future demands. The impact of AI technologies like legal chatbots will vary across different areas of law. Some sectors may experience substantial automation, while others, such as those requiring intensive personal legal counsel, may see less disruption.

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[51] Armour, J., & Sako, M. (2024). "AI-assisted Lawtech: Its Impact on Law Firms," *Faculty of Law, University of Oxford*, 2024. This report, produced by an interdisciplinary team from the University of Oxford, discusses the role of AI in transforming legal practices, emphasizing how AI technologies enhance operational efficiencies and augment the roles of legal professionals. It provides insights into the integration of AI in both routine and complex legal tasks, highlighting the shift towards multidisciplinary teamwork and the need for new skill sets among lawyers. [Online]. Available: https://www.law.ox.ac.uk/news/New%20research%20finds%20that%20AI%20is%20improving%20the%20way%20the%20legal%20sector%20operates and https://www.law.ox.ac.uk/sites/default/files/migrated/ai_final1097.pdf.

[52] International Monetary Fund. (2024). "Gen-AI: Artificial Intelligence and the Future of Work," *IMF Staff Discussion Notes*. [Online]. Available: https://www.imf.org/en/Publications/Staff-Discussion-Notes/Issues/2024/01/14/Gen-AI-Artificial-Intelligence-and-the-Future-of-Work-542379.

[53] Albanesi, S., da Silva, A. D., Jimeno, J. F., Lamo, A., & Wabitsch, A. (2023). "Reports of AI ending human labour may be greatly exaggerated," *ECB Research Bulletin* No. 113, Nov. 28, 2023. [Online]. Available: https://www.ecb.europa.eu/press/research-publications/resbull/2023/html/ecb.rb231128~0a16e73d87.en.html.

[54] Aldasoro, A., Armantier, O., Doerr, B., Gambacorta, L., & Oliviero, G. (2024). "Survey evidence on gen AI and households: job prospects amid trust concerns," *BIS Bulletin*, no. 86, 2024. [Online]. Available: https://www.bis.org/publ/bisbull86.pdf.

Overall, the evolution of legal chatbots illustrates a broader trend towards digital innovation in the legal field, promising to enhance accessibility and efficiency in legal services while also demanding a strategic response from professionals to leverage these technologies effectively.

IV. INTEGRATING BLOCKCHAIN AND LEGAL CHATBOTS

The integration of blockchain technology with legal chatbots represents an innovative leap forward, merging the strengths of blockchain's secure, immutable record-keeping with the accessibility and user-friendliness of legal chatbots. This synergy offers a potent solution to some of the most pressing challenges in legal aid delivery. Ruhl, Katz, and Bommarito (2017) discuss harnessing legal complexity and illustrate how integrating complex systems like blockchain and AI can effectively address intricate legal challenges. This perspective underpins the potential benefits and practicalities of combining these technologies to enhance legal services.[55]

A. Potential Benefits of Integration

The integration of blockchain technology and legal chatbots offers a synergistic solution that combines blockchain's secure, immutable record-keeping with the accessibility and versatility of chatbots. This combination brings several key benefits to legal services, as outlined below:

·**Enhanced Security and Privacy**: Leveraging blockchain's secure and decentralized nature allows legal chatbots to offer unparalleled privacy and data protection, ensuring users' sensitive legal information remains confidential and tamper-proof.

·**Secure Document Handling and Verification**: Blockchain's capability for immutable record-keeping boosts trust in legal chatbots. Blockchain's immutable ledger can enhance legal chatbots' ability to manage and verify documents securely. Documents and transactions facilitated by chatbots, verified on the blockchain, provide a transparent audit trail. This integration could streamline processes like the authentication of legal documents and contracts, ensuring they are tamper-proof and easily verifiable, thus reducing fraud and enhancing trust in legal transactions.

·**Improved Accessibility to Legal Services**: By enabling verification and authentication services directly, blockchain integration lowers barriers to accessing legal services, especially crucial for remote regions. Blockchain-backed chatbots could provide legal guidance and support across borders without the need for physical legal infrastructure, breaking down geographical and economic barriers to legal access.

·**Automated Legal Agreements**: Integrating smart contracts with legal chatbots streamlines legal agreements and transactions, enhancing efficiency and accessibility, and securely recording agreements on the blockchain. This would significantly reduce the need for intermediaries, lowering costs, and making legal processes more efficient.

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[55] Ruhl, J. B., Katz, D. M., & Bommarito II, M. J. (2017). Harnessing Legal Complexity. *Science*, vol. *355*, no. 6332, pp. 1377-1378.

·**Advanced NLP:** NLP technology enables legal chatbots to interpret and process complex legal language with high precision. By automating the understanding of legal queries, NLP can provide quick and accurate legal advice, making the initial stages of legal consultation more efficient.

·**AI-Powered Case Predictions:** Utilizing ML algorithms, AI tools can analyze past legal outcomes and ongoing case data to predict future results. This capability aids legal professionals in strategizing more effectively, offering insights that can inform case preparation and potential legal challenges. Such predictive analytics can transform how cases are approached, providing a data-driven basis for legal decisions.

·**Real-time Legal Assistance and Dispute Resolution:** The combination of real-time data processing by AI chatbots with blockchain's verification capabilities could offer immediate legal assistance and innovative approaches to dispute resolution. This could range from providing instant legal advice based on current laws and regulations to facilitating arbitration processes through smart contracts.

Integrating blockchain technology with legal chatbots promises to revolutionize legal aid delivery, enhancing security, efficiency, and accessibility. While these benefits are substantial, the practical implementation of integrating blockchain technology and legal chatbots requires careful consideration of key factors, including:

·**User Interface Design**: The integration should maintain a simple and accessible user interface, enhancing user experience with additional security and functionality.

·**Blockchain Infrastructure**: Selecting appropriate blockchain infrastructure is crucial for scalability, cost-efficiency, and meeting the specific needs of legal chatbots.

·**Legal and Regulatory Compliance**: The integration must adhere to legal and regulatory standards, especially concerning data protection and the use of digital contracts.

The integration of AI and blockchain technologies has the potential to significantly impact legal practices by enhancing operational efficiency, cost-effectiveness, and client engagement. By automating routine tasks such as document review and case research, these tools can substantially reduce the time and labor required for such activities, allowing legal professionals to focus on more complex and nuanced legal issues.

B. Challenges, Limitations, and Ethical Considerations

While the integration of blockchain technology and legal chatbots offers significant benefits, it also presents several challenges, limitations, and ethical considerations that must be addressed for successful implementation. These challenges span technical, ethical, and regulatory domains:

·**Technical Complexity:** The integration of blockchain and legal chatbots introduces technical complexities that require advanced expertise across both fields. Ensuring the development of user-friendly interfaces while maintaining robust

functionality is critical. This demands ongoing collaboration between blockchain technologists and AI developers to optimize both systems for legal applications.

·**Scalability:** Blockchain systems, especially those employing Proof of Work (PoW) consensus mechanisms, often struggle with scalability, which could hinder the performance of legal chatbots as user numbers grow. Addressing these scalability issues is essential for maintaining efficient transaction times and cost-effectiveness, ensuring that legal chatbots can handle an increasing volume of queries without degradation in service quality.

·**Digital Divide:** To avoid widening the digital divide, these technologies must be made accessible to those with limited digital literacy or technological access.

·**Interoperability:** Achieving interoperability between various blockchain platforms and legal chatbots is crucial for widespread adoption. This involves standardizing data formats and communication protocols to ensure seamless interaction across different systems and platforms, enhancing the versatility and utility of these integrations in diverse legal environments.

·**Ethical AI Use:** The ethical use of AI-driven legal chatbots in legal decisions is paramount. Ensuring that AI systems are fair and unbiased, particularly when interpreting complex legal data and interacting with clients, is crucial. This involves implementing rigorous testing and continuous monitoring of AI systems to safeguard ethical standards.

·**Bias and Fairness:** AI-driven legal chatbots are susceptible to biases present in their training data, potentially leading to unfair or discriminatory advice. Ensuring systems are trained on diverse, representative datasets and are regularly audited for bias is essential. Scherer's research highlights the risks associated with AI systems and the need for strategies to manage these in legal contexts, emphasizing the challenges in implementing unbiased AI and blockchain in legal services.[56]

·**Data Privacy and Security:** While blockchain offers enhanced security, its immutable ledger raises privacy concerns, especially with sensitive legal information. Legal chatbots must adhere to strict data protection standards to maintain confidentiality and trust.

·**Accountability:** The decentralized nature of blockchain complicates liability attribution, as does determining responsibility for legal chatbots' errors or harmful advice. Scherer's research suggests that robust auditing, clear delineation of responsibilities, and proactive monitoring can help manage these issues.[57]

·**Regulatory Uncertainty:** The pace of blockchain and AI development outstrips current regulatory frameworks, leading to uncertainty. Navigating this environment is a challenge for deploying blockchain and legal chatbots in legal aid.

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[56] Scherer, M. U. (2015). "Regulating Artificial Intelligence Systems: Risks, Challenges, Competencies, and Strategies," *Harvard Journal of Law & Technology*, vol. *29*, no. 2, pp. 353-400.
[57] Scherer, M. U. (2015). "Regulating Artificial Intelligence Systems: Risks, Challenges, Competencies, and Strategies," *Harvard Journal of Law & Technology*, vol. *29*, no. 2, pp. 353-400.

·**Legal Recognition:** Achieving legal recognition for blockchain-based records and smart contracts requires legislative changes and a shift in judicial attitudes toward digital evidence and agreements.

·**Integration with Traditional Legal Systems:** Merging these advanced technologies with existing legal workflows presents logistical challenges. It requires careful planning to ensure that new tools align seamlessly with traditional practices without disrupting ongoing operations.

·**Ecological Impact:** Blockchains that rely on consensus mechanisms like Proof of Work (PoW) can have substantial energy demands, leading to ecological concerns. Addressing this challenge may require a shift towards more energy-efficient consensus mechanisms, such as Proof of Stake (PoS), or other innovative solutions to reduce blockchain's environmental footprint.

Addressing these challenges and considerations requires collaboration among technologists, legal professionals, ethicists, and regulators. In the context of integrating blockchain technology with legal chatbots, an interdisciplinary approach is crucial for developing robust and comprehensive solutions. By combining insights from fields such as law, computer science, cybersecurity, data ethics, and AI, stakeholders can create systems that are not only technologically advanced but also legally compliant and ethically sound. An interdisciplinary strategy allows for holistic problem-solving where different disciplines contribute unique perspectives, leading to a deeper understanding of problems. For instance, technologists focus on leveraging blockchain for secure transactions, while legal experts ensure these solutions are compliant with legal standards. Ethicists examine implications for data privacy and the ethical responsibilities associated with AI in legal settings. Collaboration among various fields results in novel solutions that might not emerge from a single-discipline perspective. For example, the synergy between AI developers and legal professionals can enhance the sophistication of algorithms that mimic legal reasoning while adhering to ethical standards. This collaborative innovation extends to user-centric design, ensuring that legal chatbots are not only functional and compliant but also accessible and easy to use, which is crucial for widespread adoption.

By incorporating specific technologies and collaborative expertise, the potential of these integrations becomes apparent and practical. By focusing on user-centric design, ethical AI practices, robust data protection measures, and regulatory engagement, the transformative potential of blockchain and legal chatbots can be realized equitably and effectively. Ensuring broad access to these technologies is paramount in closing the justice gap and fostering a more inclusive legal landscape.

C. Conceptual Framework for Blockchain and Legal Chatbot Integration

This subchapter explores the detailed architectural design and underlying theoretical rationale for integrating blockchain technology with legal chatbots. It offers a comprehensive blueprint that demonstrates how these technologies synergistically revolutionize legal services, addressing the specific enhancements to ensure practical feasibility and operational efficiency.

The integration of blockchain and legal chatbots is predicated on merging the robust, immutable record-keeping capabilities of blockchain with the advanced,

conversational intelligence of legal chatbots. This fusion addresses critical challenges in legal aid delivery such as security, privacy, accessibility, and cost-efficiency. The foundational theory hinges on blockchain's ability to decentralize and secure data across its network, thereby preventing tampering and enhancing transparency. Concurrently, the AI-driven chatbots leverage NLP and ML to offer real-time, accurate legal assistance, mimicking the nuanced understanding and responsiveness of a human lawyer.

D. Technical Architecture and Design Elements

1. User Interface (UI)

The system's front end offers a user-friendly interface accessible via web and mobile platforms, designed for ease of use across all levels of technological expertise. This interface facilitates seamless interaction with the legal chatbot, encompassing features for user authentication, query input, response display, and document upload. To further enhance accessibility and security, the UI should incorporate features compliant with the relevant national Law on Disabilities (for example, the Americans with Disabilities Act (ADA) in the U.S.) and the Web Content Accessibility Guidelines (WCAG). Additionally, robust security protocols, including two-factor authentication and secure data input forms, should be implemented to safeguard user data.

2. Chatbot Engine

At the core of the system lies the chatbot engine, which is equipped with several advanced capabilities:

·**NLP:** This technology enables the chatbot to parse and understand complex legal language as presented by users, ensuring that interactions are as natural and intuitive as possible.

·**ML:** The system learns from each interaction, continuously improving its responses and advice based on accumulated cases and user feedback.

·**AI-Driven Legal Reasoning:** Powered by an extensive database of legal documents, precedents, and statutes, the chatbot provides reasoned legal advice that adapts to ongoing legal developments and the intricacies of individual cases.

To maintain its effectiveness and relevance, the chatbot engine should regularly update its NLP and ML components in response to new legal developments. Additionally, an AI ethics framework should be implemented to continuously monitor and audit the chatbot for biases, thus ensuring fairness and accuracy in the legal advice provided.

3. Blockchain Infrastructure

Blockchain technology forms the backbone of the integration, providing several key functionalities:

·**Transaction Ledger:** Every interaction with the chatbot, as well as any legal advice given and documents shared, is recorded on a blockchain. This immutable ledger ensures that all transactions are secure, transparent, and verifiable.

·**Smart Contracts:** These are employed to automate and enforce legal agreements and actions recommended by the chatbot, such as contract signatures and compliance checks.

·**Identity Verification:** Blockchain supports robust mechanisms for verifying user identities, which is crucial for maintaining confidentiality and security in legal consultations.

To enhance scalability and efficiency, a shift to more scalable blockchain solutions, such as PoS or hybrid models, could be considered. Additionally, developing standards and protocols to ensure interoperability across different blockchain platforms is recommended to facilitate seamless integration.

4. Data Security and Compliance

The integration adheres to stringent data protection regulations to safeguard sensitive client information. Advanced encryption protocols secure data transmissions, while compliance mechanisms ensure the system remains up-to-date with global legal standards, including the GDPR and the Health Insurance Portability and Accountability Act (HIPAA).[58]

It is recommended that legal experts regularly review the system's compliance with international data protection laws to ensure adherence and address any legal updates. The system should employ industry-standard encryption methods, and regular security audits conducted by qualified professionals are advised to safeguard user data.

5. Integration and Orchestration Layer

A middleware layer orchestrates the data flow and interactions between the chatbot engine and the blockchain infrastructure. This critical layer ensures that different components of the system communicate effectively, facilitating seamless operation that enhances both user experience and system reliability. To achieve these objectives, the middleware should be optimized to handle high data volumes and diverse data types efficiently. Furthermore, it should utilize advanced integration tools that support real-time data processing and incorporate robust error-handling capabilities to maintain system integrity under various operational conditions.

6. Monitoring and Maintenance

Continuous monitoring tools and maintenance protocols are essential to ensure the system operates at peak efficiency. It is recommended that comprehensive monitoring systems be implemented to cover all system components. Tools like Prometheus and Grafana should be utilized for this purpose, providing real-time insights into system performance. Additionally, a detailed maintenance protocol should be established, which includes regular updates, patches, and performance checks. These measures are critical to ensure system reliability and to minimize downtime.

The integration of blockchain and AI through legal chatbots transcends theoretical enhancement, emerging as a practical innovation tailored to meet the

[58] Health Insurance Portability and Accountability Act of 1996, Pub. L. No. 104-191, 110 Stat. 1936 (1996). [Online]. Available: https://www.congress.gov/bill/104th-congress/house-bill/3103

evolving demands of modern legal service delivery. This framework specifically addresses the dual imperatives of enhanced security and sophisticated legal reasoning required by digital platforms. Practically, this translates into a system where legal advice is not only easily accessible but also rigorously secure and compliant with prevailing legal standards.

By providing a detailed, practical example of how blockchain can be seamlessly integrated with AI-driven legal chatbots, this conceptual framework serves as a pioneering blueprint for future innovations in legal technology. It vividly demonstrates how these integrated technologies can democratize access to legal services, making them more affordable, accessible, and reliable than ever before. This initiative not only boosts the efficiency of legal processes but also broadens the avenues for legal aid, promoting a more inclusive access to justice across diverse populations.

E. Real-World Applications

While direct examples of integrating blockchain technology with legal chatbots are currently sparse, the potential implications for legal aid delivery are profound. A prime example of blockchain's application in legal dispute resolution is Kleros, a blockchain-based dispute resolution platform. [59] This project illustrates the transformative potential of such integrations, showcasing how legal processes can be made more accessible, transparent, and efficient through innovative technology.

Kleros emerges as a groundbreaking solution in the realm of legal technology, offering a decentralized arbitration service that harnesses the power of blockchain technology and crowdsourcing. This innovative platform democratizes access to justice by facilitating dispute resolution in a transparent, efficient, and cost-effective manner. As noted by Yannick Gabuthy in “Blockchain-Based Dispute Resolution: Insights and Challenges”,[60] the integration of blockchain into dispute resolution processes not only enhances efficiency and transparency but also introduces new challenges related to fairness and the digital divide.

Kleros leverages smart contracts on the Ethereum blockchain where disputes are submitted and adjudicated by a pool of jurors selected from a global community. The jurors, staking tokens (PNK) to participate, review evidence and vote on outcomes based on predefined criteria. This cryptoeconomic model incentivizes accurate judgment, rewarding jurors who vote correctly and penalizing those who do not. This ensures a commitment to fairness and integrity in decision-making, emphasizing the platform's commitment to equitable justice.

The key advantages of Kleros are the following:

·**Accessibility:** Kleros opens up avenues for accessible justice, enabling individuals worldwide to seek resolution without the barriers of geography or cost.

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[59] Kleros. "Innovating Dispute Resolution: A Cohesive Approach Blending Traditional Mediation and Kleros Blockchain Arbitration." [Online]. Available: https://blog.kleros.io/innovating-dispute-resolution-a-cohesive-approach-blending-traditional-mediation-and-kleros-blockchain-arbitration/ [Online]. Available: https://docs.kleros.io/.

[60] Gabuthy, Y. (2023). "Blockchain-Based Dispute Resolution: Insights and Challenges," BETA, CNRS, *University of Lorraine*. [Online]. Available: https://www.mdpi.com/2073-4336/14/3/34.

·**Transparency and Trust:** The blockchain-based framework ensures that all decisions are transparent and immutable, fostering trust among users.

·**Scalability:** The platform's design allows for handling an increasing volume of cases without compromising efficiency.

Kleros is adept at handling a wide array of disputes, from small claims and e-commerce disagreements to more complex issues like intellectual property rights and financial transactions. Its decentralized nature allows for diverse juror perspectives, enhancing the fairness and global relevance of its resolutions.

Operating globally, Kleros has the potential to integrate with legal chatbots, creating a holistic ecosystem for dispute resolution outside the confines of traditional legal systems. This integration could allow Kleros to automate more administrative aspects of dispute resolution, such as initial claim processing and preliminary fact-checking, using AI-driven chatbots. Furthermore, legal chatbots could assist in the communication process, providing parties with real-time updates and guidance on the arbitration process, thus enhancing user experience and operational efficiency.

The case of Kleros not only showcases a practical application of blockchain in legal services but also hints at future directions where blockchain and AI could be more tightly integrated, providing comprehensive and accessible legal service platforms. Although not a direct integration of blockchain within a legal chatbot as yet, platforms like Kleros exemplify how blockchain can significantly enhance legal services and could, in theory, be paired with legal chatbots to streamline and secure legal processes further.

V. FUTURE DIRECTIONS AND RECOMMENDATIONS

A. Building on a Transformative Foundation

The integration of blockchain technology and legal chatbots represents a transformative shift in legal aid services, offering unprecedented opportunities to enhance efficiency and access. As we navigate this evolving landscape, it is crucial to adopt strategies that harness these technological advancements responsibly while addressing the ethical, inclusive, and practical challenges they introduce.

Drawing from global initiatives like the insights provided by the United Nations General Assembly Resolution on Artificial Intelligence[61] adopted on March 21, 2024—coinciding with the International Day for the Elimination of Racial Discrimination—this chapter outlines a comprehensive roadmap to leverage AI-driven legal chatbots and blockchain technologies effectively. These recommendations aim to ensure that the deployment of these technologies democratizes access to legal services, making them more accessible and responsive to the needs of society.

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[61] United Nations General Assembly. (2024). "Resolution A/RES/78/265: Seizing the opportunities of safe, secure and trustworthy artificial intelligence systems for sustainable development," 21 Mar. 2024. [Online]. Available: https://documents.un.org/doc/undoc/gen/n24/087/83/pdf/n2408783.pdf?token=YpoxQ1ojtVHljkadAC&fe=true.

The Resolution A/RES/78/265 adapted by the United Nations— the first-ever resolution on the topic of AI—underscores the imperative of promoting safe, secure, and trustworthy AI systems that are human-centric, reliable, explainable, ethical, and inclusive. It stresses the importance of respecting, protecting, and promoting human rights and fundamental freedoms throughout the AI system's lifecycle, emphasizing that rights upheld offline must also be safeguarded online.

The resolution advocates for international cooperation to develop effective, interoperable safeguards, practices, and standards, highlighting the necessity of mechanisms to monitor and manage AI-related risks, including data security and privacy protections. It calls upon member states and stakeholders to support developing countries in harnessing AI benefits, aiming to close the digital divide and enhance digital literacy globally. This alignment with international standards sets a foundational ethical framework essential for the development and integration of AI technologies in legal aid.

B. Roadmap for Leveraging AI and Blockchain in Legal Aid

To effectively leverage AI and blockchain technologies, we must embrace a comprehensive approach involving interdisciplinary collaboration, adherence to ethical guidelines, and the pursuit of innovative solutions:

1. Interdisciplinary Collaboration

·**Cross-Sector Partnerships**: Collaboration between technologists, legal professionals, policymakers, and ethicists is crucial. These stakeholders can ensure that technological solutions are legally sound, ethically developed, and effectively implemented.

·**Global Standards and Protocols**: The development of international standards can facilitate the interoperability of blockchain and legal chatbots across jurisdictions, making technological benefits universally accessible.

2. Ethical Guidelines and Regulatory Frameworks

·**Develop Ethical Guidelines**: Stakeholders should formulate guidelines addressing privacy, bias, and data security concerns inherent in AI and blockchain technologies.

·**Regulatory Balance**: Crafting regulatory frameworks is crucial to balance fostering innovation with the protection of individual rights, while recognizing the legal validity of blockchain records and smart contracts.

3. Overcoming the Digital Divide

·**Inclusive Technology Design**: Legal technology should be accessible to all, featuring multilingual support, user-friendly interfaces, and accessibility features.

·**Global Access and Connectivity**: Initiatives aimed at expanding internet access and digital literacy, especially in underserved regions, are vital for ensuring equitable distribution of legal technology benefits.

4. Fostering Innovation and Investment

·**Encourage Investments**: Public and private investments in legal technology, especially in areas serving underrepresented communities, are crucial for fostering innovation.

·**Promote SDG Alignment**: Foster collaborative international efforts that align with Sustainable Development Goals, particularly Goal 16, which focuses on promoting just, peaceful, and inclusive societies.

5. Promote Transparency and Accountability

·**Enhance Transparency**: Ensure that the workings of AI and blockchain systems are transparent to users, especially in how data is processed and decisions are made. This step could include the development of standards for explainability.

·**Ensure Accountability**: Establish clear guidelines on the accountability of AI systems and blockchain, particularly in scenarios where decisions may significantly impact legal outcomes or personal freedoms. Implementing such guidelines will not only protect individuals' rights but also bolster trust in the technologies' application within legal frameworks.

6. Continuous Ethical Training and Education

·**Stakeholder Education**: Regularly update and train all stakeholders, including technologists, legal professionals, and policymakers, on the latest developments in AI ethics and blockchain technology.

·**Public Awareness Campaigns**: Conduct public education campaigns to raise awareness about the benefits and risks of AI and blockchain in legal services.

7. Research and Development Support

·**Support Research**: Emphasize backing for ongoing investigations into new AI and blockchain applications aimed at enhancing legal services. This involves not only funding innovative projects but also fostering a collaborative environment where researchers can explore and overcome current technological limitations and develop new, impactful uses.

·**Develop Pilot Programs**: Encourage pilot programs that test the integration of AI and blockchain in controlled environments to study impacts and potential scale-up strategies.

8. Incorporating Global Perspectives

·**Include Diverse Perspectives**: Ensure that the development of AI and blockchain technologies considers diverse cultural and societal perspectives, which could help tailor solutions to specific regional challenges.

·**Broad Partnerships**: Encourage comprehensive collaborations that bridge the gap between technologically advanced countries and developing nations. Such partnerships are vital for ensuring that global needs and perspectives are considered in

the development and application of AI and blockchain, helping to prevent the widening of the digital divide and promoting equitable technological progress.

By integrating the principles outlined in the UN General Assembly Resolution on AI, this roadmap aims to make advanced legal technologies accessible and beneficial globally. Moving forward, it is crucial for all stakeholders—technologists, legal professionals, policymakers, and ethicists—to collaborate in navigating this evolving landscape, ensuring that advances in legal technologies continue to promote justice and equity worldwide.

C. Need for Global Convergence on AI Regulation Principles

The rapid evolution of AI and blockchain technologies offers transformative potential for legal systems worldwide. However, these technologies also present significant ethical and regulatory challenges that necessitate informed and thoughtful responses. This section examines global insights and ethical frameworks, drawing on diverse regulatory approaches to establish a comprehensive backdrop for the subsequent discussion on the ethical integration of AI and blockchain in legal aid.

The United Nations General Assembly's Resolution on Artificial Intelligence sets forth fundamental principles for the ethical, secure, and trustworthy global development and deployment of AI systems, with a strong emphasis on upholding human rights. Before the adoption of this resolution at the end of 2023, significant guidance was provided by Pope Francis of the Catholic Church. In a letter dated December 8, as the Church prepared to celebrate the World Day of Peace on January 1, 2024,[62] Pope Francis highlighted the critical need to guide AI development with a robust ethical foundation prioritizing human rights, inclusion, transparency, security, equity, privacy, and reliability.

He emphasized that while AI holds potential benefits for humanity, its positive impact is not guaranteed and depends heavily on our commitment to ethical development and implementation. He also called on the global community of nations to work together to adopt a binding international treaty that regulates the development and use of AI in various forms. Pope Francis' remarks include vital guidelines and recommendations for the AI sector, so it is important to quote directly from his letter:

"We cannot presume a priori that its development will make a beneficial contribution to the future of humanity and to peace among peoples. That positive outcome will only be achieved if we show ourselves capable of acting responsibly and respect such fundamental human values as "inclusion, transparency, security, equity, privacy and reliability". [5] Nor is it sufficient simply to presume a commitment on the part of those who design algorithms and digital technologies to act ethically and responsibly. There is a need to strengthen or, if necessary, to establish bodies charged with examining the ethical issues arising in this field and protecting the rights of those who employ forms of AI or are affected by them. [6] The immense expansion of technology thus needs to be accompanied by an appropriate formation in responsibility

[62] Pope Francis. (2024). "Message of His Holiness Pope Francis for the 57th World Day of Peace, January 1, 2024, 'Artificial Intelligence and Peace,'" Vatican. [Online]. Available: https://www.vatican.va/content/francesco/en/messages/peace/documents/20231208-messaggio-57giornatamondiale-pace2024.html

for its future development. Freedom and peaceful coexistence are threatened whenever human beings yield to the temptation to selfishness, self-interest, the desire for profit and the thirst for power. We thus have a duty to broaden our gaze and to direct techno-scientific research towards the pursuit of peace and the common good, in the service of the integral development of individuals and communities. [7] The inherent dignity of each human being and the fraternity that binds us together as members of the one human family must undergird the development of new technologies and serve as indisputable criteria for evaluating them before they are employed, so that digital progress can occur with due respect for justice and contribute to the cause of peace. Technological developments that do not lead to an improvement in the quality of life of all humanity, but on the contrary aggravate inequalities and conflicts, can never count as true progress [8]." [63]

According to the Pope: "In the quest for normative models that can provide ethical guidance to developers of digital technologies, it is indispensable to identify the human values that should undergird the efforts of societies to formulate, adopt and enforce much-needed regulatory frameworks. The work of drafting ethical guidelines for producing forms of AI can hardly prescind from the consideration of deeper issues regarding the meaning of human existence, the protection of fundamental human rights and the pursuit of justice and peace. This process of ethical and juridical discernment can prove a precious opportunity for shared reflection on the role that technology should play in our individual and communal lives, and how its use can contribute to the creation of a more equitable and humane world. For this reason, in debates about the regulation of AI, the voices of all stakeholders should be taken into account, including the poor, the powerless and others who often go unheard in global decision-making processes."

These guidelines and recommendations set by Pope Francis are applicable not only in the context of AI but also critically relevant to the governance of blockchain technologies. Blockchain's attributes of decentralization, transparency, and immutability can significantly enhance the accountability and fairness of digital systems. However, without careful ethical consideration and regulation, these technologies could also pose risks to privacy and lead to new forms of inequality.

The Vatican has further contributed to the discourse on AI ethics with the release of the handbook *Ethics in the Age of Disruptive Technologies: An Operational Roadmap*, co-created by Pope Francis and the Markkula Center for Applied Ethics at Santa Clara University. This handbook serves as a practical guide for embedding ethical principles in technology development and implementation, emphasizing the need to align technological advances with the common good of humanity and the environment. It aims to guide the tech industry in using AI ethically, offering a set of principles that are designed to be comprehensive and adaptable across various organizational and business contexts.[64] The document states:

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[63] The numbers in brackets [5], [6], [7], [8] refer to citations within Pope Francis's original letter and are included here to maintain the integrity of the direct quotations used.

[64] Vatican & Markkula Center for Applied Ethics. (2023). *Ethics in the Age of Disruptive Technologies: An Operational Roadmap.* [Online]. Available: https://www.scu.edu/media/ethics-center/itec/Ethics-in-the-Age-of-Disruptive-Technologies:An-Operational-Roadmap---ITEC-Handbook-June-2023.pdf.

"The purpose of principles is to remind us that we are committed to ethical ideals—guides that lead us toward good: treating people and the planet morally correctly. They may seem abstract, but without principles, human actions can quickly go astray and lead to undesirable outcomes. Principles give us something to aim at, to seek and pursue, and ultimately to realize as the fulfillment of our efforts."

The handbook sets out one anchoring principle—"Our Actions Are for the Common Good of Humanity and the Environment"—and seven guiding principles that are intended to make the anchoring principle clearer and more concrete in its applicability. These guiding principles include: 1. Respect for Human Dignity and Rights, 2. Promote Human Well-Being, 3. Invest in Humanity, 4. Promote Justice, Access, Diversity, Equity, and Inclusion, 5. Recognize that Earth is for All Life, 6. Maintain Accountability, 7. Promote Transparency and Explainability.

Efforts to develop regulatory frameworks in the field of AI are evident across numerous countries. The United States has taken significant steps to ensure the ethical development of AI technologies through initiatives such as the AI Bill of Rights[65] and the Executive Order on AI.[66] The Executive Order establishes guidelines for the development and deployment of AI based on principles of safety, security, and accountability, aligning with the UN's call for trustworthy AI systems. Similarly, the AI Bill of Rights emphasizes transparent and equitable AI use, setting a direction for an AI ecosystem that prioritizes human welfare and ethical standards, reflecting a commitment to both national and global norms for AI safety and reliability.

China's regulatory approach to AI is shaped by its anticipated AI Law[67] and the existing Code of Ethics for New-Generation AI.[68] The forthcoming AI Law is expected to provide a comprehensive framework addressing the ethical challenges and societal impacts of AI, with a strong emphasis on fairness and human well-being. The Code of Ethics supports this alignment by stipulating norms throughout the AI lifecycle, ensuring AI systems are developed and utilized with a robust ethical foundation.

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[65] The White House. (2022). *Blueprint for an AI Bill of Rights: Making Automated Systems Work for the American People*. [Online]. Available: https://www.whitehouse.gov/ostp/ai-bill-of-rights/.

[66] The White House. (2023). *Executive Order on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence.* [Online]. Available: https://www.whitehouse.gov/briefing-room/presidential-actions/2023/10/30/executive-order-on-the-safe-secure-and-trustworthy-development-and-use-of-artificial-intelligence.

[67] Artificial Intelligence Law of the People's Republic of China, Draft for Suggestions from Scholars. [Online]. Available: https://cset.georgetown.edu/publication/china-ai-law-draft/, https://cset.georgetown.edu/wp-content/uploads/t0592_china_ai_law_draft_EN.pdf.

[68] Code of Ethics for New-Generation AI. (2021). Ministry of Science and Technology of the People's Republic of China. [Online]. Available: https://www.most.gov.cn/kjbgz/202109/t20210926_177063.html.

The European Union's AI Act[69] represents a significant effort to harmonize AI regulations across Member States, focusing on human-centric AI systems. The Regulation categorizes AI applications according to their risk levels, imposing stringent requirements on high-risk applications to ensure adherence to transparency, accountability, and human oversight principles.

The United Kingdom's National AI Strategy, detailed in the AI White Paper,[70] outlines the country's long-term vision to establish itself as a leader in ethical AI development. This strategy emphasizes the importance of safety, security, and public trust in AI technologies, advocating for a regulatory environment that supports innovation while ensuring public benefit and protection.

Singapore's Model AI Governance Framework[71] offers detailed guidance for private sector organizations to deploy AI responsibly. Known for its practicality, this framework emphasizes operationalizing ethical principles in real-world scenarios.

Japan's Social Principles of Human-Centric AI[72] establish guidelines that prioritize transparency, user control, and privacy. These principles guide the integration of AI into societal functions, ensuring that AI supports human values and rights.

While there are indications of a movement toward creating ethical, secure, and trustworthy AI systems, as evidenced by initiatives and regulations from various countries, harmonizing these regulations at an international level presents challenges. Each region's AI regulations reflect its unique legal, social, and cultural priorities, which can lead to variations in the emphasis on certain ethical aspects. For example, the United States' AI Bill of Rights primarily focuses on transparency and the protection of civil liberties, while China's anticipated AI Law is expected to emphasize state control and societal stability alongside ethical development. The European Union's AI Act categorizes AI by risk, promoting strict controls on high-risk applications—a

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[69] Regulation (EU) 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). *Official Journal of the EU,* L 2024/1689, 12.7.2024. [Online]. Available: https://eur-lex.europa.eu/eli/reg/2024/1689/oj. 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, European Commission, COM/2021/206 final, 21 Apr. 2021. [Online]. Available: https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1623335154975&uri=CELEX%3A52021PC0206. The Council unanimously adopted its General Approach on the proposal on 6 Dec. 2022. [Online]. Available: https://data.consilium.europa.eu/doc/document/ST-5662-2024-INIT/en/pdf. The European Parliament adopted its position at first reading on the Commission proposal on 13 Mar. 2024. [Online]. Available: https://www.europarl.europa.eu/doceo/document/TA-9-2024-0138_EN.pdf. Information: https://digital-strategy.ec.europa.eu/en/policies/regulatory-framework-ai.

[70] United Kingdom's AI White Paper. (2021). Department for Digital, Culture, Media & Sport and Office for Artificial Intelligence. [Online]. Available: https://www.gov.uk/government/publications/ai-regulation-a-pro-innovation-approach and https://www.gov.uk/government/publications/national-ai-strategy.

[71] Model AI Governance Framework. (2021). Infocomm Media Development Authority, Singapore. [Online]. Available: https://www.pdpc.gov.sg/help-and-resources/2020/01/model-ai-governance-framework.

[72] Human-Centric AI, Cabinet Office, Government of Japan. (2019). *Social Principles of Human-Centric AI*. [Online]. Available: https://www8.cao.go.jp/cstp/stmain/aisocialprinciples.pdf.

method that differs substantially from the more holistic frameworks seen in Japan or Singapore.

These differences reflect each jurisdiction's distinct policy environments and societal values, which influence how AI regulations are drafted, implemented, and enforced. The UK's emphasis on fostering innovation within a pro-growth regulatory framework might prioritize market dynamics differently compared to, for instance, Singapore's approach, which heavily leans on operationalizing ethics within private sector practices.

Despite these differences, there is a movement toward the overarching themes of the UN resolution, which advocates for the protection of human rights, promotion of peace, and assurance of safety and trustworthiness in AI systems. The convergence around these core values provides a solid foundation for potential international cooperation.

Harmonizing these diverse regulatory frameworks at an international level presents significant challenges. Legal disparities, economic interests, technological capabilities, and cultural differences can all impede the creation of a universally accepted set of AI regulations. For instance, aligning the EU's stringent risk-based regulatory approach with China's state-controlled framework requires reconciling fundamentally different legal philosophies and governance models.

Moreover, the varying degrees of technological advancement across countries can widen the digital divide, making it difficult for less technologically advanced nations to adopt or adhere to the high standards set by leading countries. This disparity can hinder efforts to create equitable AI regulations that are inclusive of all global stakeholders.

To address these challenges, there needs to be an ongoing dialogue that not only respects the sovereignty and local nuances of individual countries but also seeks to find common ground on key principles. International bodies like the United Nations could play a pivotal role in facilitating these discussions, helping to bridge gaps and foster a more cohesive approach to AI governance. Mechanisms for shared learning, capacity building, and technology transfer will be crucial in ensuring that all countries, regardless of their current technological or economic status, can contribute to and benefit from safe and ethical AI development.

This complex landscape underscores the importance of continued global cooperation and dialogue to ensure that AI technology progresses in a manner that is not only innovative but also inclusive and just. By focusing on shared goals and leveraging international frameworks, the global community can work towards harmonized AI regulations that uphold human dignity and foster a safe, secure digital future for all.

D. New Regulatory Principles for AI and Blockchain in Legal Aid

As we look toward a future where AI and blockchain are integral to our legal systems, it is necessary to establish a unified approach to regulation that is adaptable across different global contexts. This section proposes two foundational principles derived from the comprehensive insights and ethical frameworks discussed previously.

These principles are designed to ensure that these powerful technologies contribute positively to the legal system, enhancing access to justice while safeguarding human rights and ethical standards.

1. Human-centric Approach

This principle emphasizes designing and regulating AI and blockchain systems with a focus on human presence and their impacts throughout the technology lifecycle. This ensures the protection of human rights, alignment with universal values, and beneficial interactions between technology and society.

The classic approach to regulation and regulatory models involves describing the dynamics of processes through various variables but often neglects human presence. Classical adjustment models assume that more variables and extensive coverage result in a more accurate depiction of the processes subject to regulation. However, it is difficult to predict specific events related to human presence and actions, which could decisively influence future outcomes.

Classical approaches are impractical for improving the regulation and modeling of AI systems. New, modern approaches based on advancements in science and methodologies are necessary. Modern regulatory modeling should focus on human presence and the establishment of mechanisms and procedures that align the interests of all stakeholders, respect human rights, and achieve the best possible outcomes while preserving freedom of choice in decision and action. Universal human values and human rights should be realized through procedures representing regulatory mechanisms that ensure equal treatment and protect individual interests.

Modern regulatory frameworks should emphasize:

1. Clear Roles and Governance: Establish policies and procedures for AI governance with the impacts of these systems on all involved humans. Ensuring clear governance structures supports accountability and transparency.

2. Risk Management Processes: Implement mechanisms to identify, assess, and mitigate AI-related risks. This involves enhancing transparency and accountability by proactively managing potential negative impacts and uncertainties associated with AI and blockchain technologies.

3. Ethical Development and Deployment: Ensure AI systems are ethically developed and deployed, addressing issues such as bias and data privacy concerns. Ethical frameworks should guide the design, implementation, and use of AI to align with human-centric values and legal standards.

A human-centric approach involves embedding these principles into AI procedures and policies, ensuring that regulatory mechanisms respect human rights, promote fairness, and achieve the best possible outcomes for all stakeholders. This approach supports the creation of an inclusive, transparent, and secure technological environment that benefits society as a whole.

Drawing from the insights of Ben Shneiderman and Matthew Scherer, the necessity of designing AI and blockchain technologies with a strong focus on enhancing

human interaction and upholding societal values is emphasized. Shneiderman [73] advocates for regulatory frameworks that not only accommodate technological advancements but also reinforce human values, ensuring that AI supports human capabilities and integrates seamlessly into societal structures. Similarly, Scherer [74] emphasizes the critical importance of embedding ethical considerations within AI design, particularly in legal contexts, to promote transparency, accountability, and fairness. Together, these perspectives underline the foundational principle that AI and blockchain technologies should be developed and regulated in a manner that prioritizes human rights, fosters ethical interactions, and aligns closely with existing legal and societal norms.

2. Functional Regulation Approach

The design of regulations and regulatory mechanisms for AI models and systems requires a different approach from the classical one, which typically provides rules governing specific situations and relationships. A modern regulatory modeling approach for AI should include an additional layer that takes into account human presence and its interaction with the functions of the respective system.

Just as layers in a deep learning model play a crucial role in identifying the functions of different processes by transforming input data into information that can be understood by the computer, we can apply this concept to regulatory frameworks. This additional layer, termed the "functional level," should include:

·**Description of Functions**: Procedures should describe the functions within the system, the roles of affected entities (in the form of elements, links, and configurations of interactions), and how subjects interact with these functions.

·**Classification Criteria**: This sub-layer should detail the required behavior and provide criteria for assessing and categorizing the impact of AI functions on human presence. Such criteria could be developed drawing from frameworks like the one proposed in "Ethics in the Age of Disruptive Technologies: An Operational Roadmap," ensuring that technology adheres to ethical standards and respects human values throughout its operational life.

This approach facilitates the design of regulations that evaluate permissible conduct within the system, defined by procedures and operational conditions like contracts, documents, and agreements. It simplifies complexity, making intricate logical connections and circuits easier to understand. By converting indeterminate subject activities into deterministic structures, this method reduces abstraction levels while increasing detail. This addresses the dual-use nature of technology—beneficial or harmful applications. For instance, chatbots can enhance customer service but also be misused for manipulation or data theft.

This approach ensures any proposed conditions or legal texts are verifiable, clearly demonstrating their intended impact and practical outcomes. It enables AI

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[73] Shneiderman, B. (2020). "Human-Centered Artificial Intelligence: Reliable, Safe & Trustworthy," *International Journal of Human–Computer Interaction*, vol. *36*, no. 6, pp. 495-504. [Online]. Available: https://doi.org/10.1080/10447318.2020.1741118

[74] Scherer, M. U. (2015). "Regulating Artificial Intelligence Systems: Risks, Challenges, Competencies, and Strategies," *Harvard Journal of Law & Technology*, vol. *29*, no. 2, pp. 353-400.

system activities to be identified in modeling-friendly terms for regulatory purposes, capturing the recursive nature of AI activities throughout their lifecycle. This ensures the technologies remain equitable and human-centric.

As we integrate AI and blockchain into our legal systems, the focus remains on a human-centric approach, ensuring these technologies enhance access to justice and uphold ethical standards. The proposed regulatory principles, derived from global insights and ethical frameworks, aim to establish a unified approach that respects human dignity and safeguards ethical standards across jurisdictions. By prioritizing human interaction, societal impact, and ethical integrity, we shift the focus from isolated technological advances to developments deeply integrated with human values.

Looking forward, this chapter underscores the necessity of continued international collaboration and dialogue to harmonize regulatory frameworks and share best practices. This cooperative effort is crucial for ensuring that AI and blockchain technologies contribute positively to global society.

Ultimately, the future directions for AI and blockchain in legal aid demand a commitment to ethical development, robust regulatory frameworks, and proactive international cooperation. By embracing these strategic elements, we can harness the potential of these technologies to forge a more just, transparent, and efficient legal system worldwide.

CONCLUSION

This research endeavor has systematically explored the potential of blockchain technology and legal chatbots to democratize legal aid. Grounded in a thorough analysis of technological capabilities and theoretical underpinnings, this study has illuminated the complex interplay between advanced technologies and legal services, aiming to chart a path forward for their integration to enhance access to justice.

Reflecting on the insights garnered, it is clear that the amalgamation of blockchain's immutable ledger with the dynamic interaction capabilities of legal chatbots holds transformative promise for the legal aid sector. However, the path to realizing this potential is fraught with technical, ethical, and regulatory challenges that necessitate a multidisciplinary approach to navigate.

In alignment with the calls for ethical guidelines and equitable access to technology, as emphasized by global initiatives like the United Nations General Assembly Resolution on Artificial Intelligence, this paper proposes that these principles must underpin future efforts to harness blockchain and legal chatbots in the service of justice.

As this research concludes, the journey toward fully realizing the benefits of blockchain and legal chatbots in legal aid is just beginning. The collaborative efforts of technologists, legal professionals, ethicists, and policymakers will be critical in overcoming existing barriers and ensuring equitable legal aid delivery. Inspired by the pioneering research in AI and blockchain, let us continue to innovate and develop legal technologies that not only advance the field but also uphold our collective commitment to justice for all, contributing to a more equitable society.

HOW AI-ENABLED BLOCKCHAIN TECHNOLOGY FACILITATES U.S. SANCTIONS ON FOREIGN BUSINESSES: AN ANALYSIS BASED ON INTERNATIONAL REGULATORY HARMONIZATION

Alvin Hoi-Chun Hung*

Abstract: This article investigates the critical role of blockchain technology in promoting the integration of international regulatory harmonization within American global supply chains to facilitate U.S. sanctions on foreign businesses. While the convergence of artificial intelligence (AI) and blockchain offers a transformative path toward enhanced transparency, efficiency, and security in supply chain management, its adoption is hampered by intricate legal landscapes and inconsistencies in international regulations. This analysis dissects the key legal roadblocks, including data privacy concerns, jurisdictional conflicts, and ensuring compliance with diverse international standards. More importantly, it explores the opportunities presented by establishing a harmonized regulatory framework. Such a framework would enable the seamless integration of artificial intelligence (AI) and blockchain technologies across global supply chains. By addressing these legal hurdles and capitalizing on the opportunities for international regulatory harmonization, this article explores how blockchain technology can catalyze achieving this objective. Specifically, it examines how blockchain can foster transparency, streamline compliance processes, and mitigate the challenges associated with imposing sanctions on foreign businesses, particularly those from China.

Keywords: Blockchain Technology; U.S. Sanctions; Global Supply Chain; International Regulatory Harmonization

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INTRODUCTION

The intricate network of global supply chains forms the backbone of the American economy, facilitating the movement of goods, materials, and information across continents.[1] However, this complex system is susceptible to disruptions, inefficiencies, and even fraudulent activities, making it vulnerable to exploitation by foreign businesses that do not comply with American sanctions.[2] Innovative technologies like blockchain and Artificial Intelligence (AI) offer a potential solution, promising to revolutionize the management and security of these vital commercial arteries while simultaneously enhancing enforcement capabilities for American sanctions.[3]

Blockchain technology represents a paradigm shift in data management for global supply chains. Imagine a shared digital ledger accessible only to authorized participants, where every transaction is meticulously recorded and secured using cryptography.[4] Each entry, or "block," is chronologically linked to the previous one, creating an immutable chain of events. This inherent transparency makes data tampering or transaction fabrication nearly impossible, thereby strengthening the ability to identify and hold accountable foreign businesses that violate American sanctions.

The potential benefits extend far beyond the American context. Real-time tracking of goods across their entire journey, from raw materials in remote locations to finished products on store shelves, becomes a reality for all stakeholders involved in the global supply chain. This increased transparency can significantly improve the enforcement of American sanctions by providing clear visibility into the movement of goods and identifying potential attempts to circumvent restrictions. Disputes over origin and ownership are minimized, and counterfeiting is significantly hindered. Additionally, smart contracts and self-executing agreements embedded within the blockchain can automate processes and reduce administrative burdens across international borders, streamlining the enforcement of American sanctions compliance.

While robust and efficient supply chains are undoubtedly crucial for the American economy, their reach extends far beyond national borders. However, the widespread adoption of AI-enabled blockchain technology within these global networks faces significant legal hurdles. The legal landscape surrounding this nascent technology is still evolving, presenting a complex web of considerations, particularly with the added layer of complexity introduced by AI integration.[5] Data privacy regulations, intellectual property rights, and the inherently international nature of supply chains raise critical questions that demand international legal solutions –

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[1] Jeffrey Neilson, et al., *Global value chains and global production networks in the changing international political economy: An introduction*. REVIEW OF INTERNATIONAL POLITICAL ECONOMY 21.1, 1-8(2014).

[2] Hoda Davarzani, et al. *Understanding econo-political risks: impact of sanctions on an automotive supply chain*. INTERNATIONAL JOURNAL OF OPERATIONS & PRODUCTION MANAGEMENT 35.11, 1567-1591 (2015).

[3] Fabio Cozzi. *Will blockchain technologies strengthen or undermine the effectiveness of global trade control regulations and financial sanctions?*. GLOBAL JURIST 20.2, 20190047 (2020).

[4] Michael Nofer, et al. *Blockchain*. BUSINESS & INFORMATION SYSTEMS ENGINEERING 59 183-187 (2017).

[5] John Babikian, *Navigating the Legal Landscape: Regulations for Artificial Intelligence, Quantum Computing, and Blockchain*. INTERNATIONAL JOURNAL OF ADVANCED ENGINEERING TECHNOLOGIES AND INNOVATIONS 1.1, 1-16 (2017).

solutions that go beyond national frameworks and specifically address the challenges of enforcing American sanctions on foreign businesses.

This article examines the potential roadblocks that could hinder blockchain technology's implementation, with particular attention to areas such as data security and ownership across international jurisdictions. The investigation will explore how intellectual property rights can be protected for AI algorithms embedded within the blockchain, emphasizing the need for harmonized legal frameworks to facilitate seamless global supply chain operations and empower the enforcement of American sanctions.

The core argument of this article is that while the potential benefits of AI-enabled blockchain for American global supply chains are undeniable, a thorough understanding of the legal challenges, particularly the need for international harmonization to enforce American sanctions, is paramount. By proactively addressing these challenges and fostering a collaborative approach among stakeholders across the globe, policymakers and stakeholders, by working closely together, can pave the way for a future where this transformative technology strengthens not just America but all global supply chains while simultaneously safeguarding American interests through enhanced enforcement of sanctions.

I. AI-ENABLED BLOCKCHAIN TECHNOLOGY IN GLOBAL SUPPLY CHAINS

The integration of artificial intelligence (AI) with blockchain technology heralds a transformative era for American global supply chains. However, comprehending this advancement requires a nuanced understanding of the foundational technological principles and their corresponding legal ramifications.

A. Blockchains and Global Supply Chains

Blockchain acts like a shared and secure record-keeping system for all participants in a supply chain.[6] At its essence, blockchain technology operates as a distributed ledger—a secure, decentralized database maintained across a network of computers.[7] This architecture obviates the necessity for a central authority, thereby promoting decentralization. Within this network, each transaction is cryptographically hashed and sequentially linked to its predecessor, forming an immutable record resistant to tampering. This intrinsic transparency and reliability engender trust within the supply chain ecosystem.

Moreover, blockchain technology enables the deployment of smart contracts.[8] These self-executing contracts are embedded within the blockchain and automatically activate predefined actions upon the satisfaction of specific conditions.[9] For instance,

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[6] Razatulshima Ghazali, et al. *Blockchain for record-keeping and data verifying: proof of concept*. MULTIMEDIA TOOLS AND APPLICATIONS 81.25, 36587-36605 (2022).

[7] Advait Deshpande, et al. *Distributed Ledger Technologies/Blockchain: Challenges, opportunities and the prospects for standards*. OVERVIEW REPORT THE BRITISH STANDARDS INSTITUTION (BSI) 40.40, 1-34 (2017).

[8] Shuai Wang, et al. *Blockchain-enabled smart contracts: architecture, applications, and future trends*. IEEE TRANSACTIONS ON SYSTEMS, MAN, AND CYBERNETICS: SYSTEMS 49.11, 2266-2277 (2019).

[9] *Id.*

a smart contract might release payment to a supplier only upon verification of successful delivery. This automation not only streamlines processes but also mitigates the risk of human error or fraudulent activity.

Additionally, blockchain technology employs cryptographic techniques to ensure the security and transparency of data stored on the ledger.[10] Cryptographic hashing functions produce unique identifiers for each transaction, rendering them virtually unalterable without detection. Furthermore, all network participants can access the ledger, depending on the specific blockchain's permission structure, thus fostering information visibility and accountability throughout the supply chain.

Unlike traditional, isolated data systems, blockchain facilitates the creation of a unified, shared ledger that meticulously tracks the movement of goods throughout the entire supply chain. This distributed ledger provides an immutable and verifiable record of every touchpoint, from raw material extraction to final product delivery.

This enhanced traceability offers myriad benefits. In the context of food safety, blockchain can monitor the origin, processing, and transportation of food products. This enables regulatory bodies to accurately identify the source of contamination during outbreaks, thereby facilitating targeted recalls and safeguarding consumer health. Similarly, within the pharmaceutical industry, blockchain ensures the authenticity and provenance of drugs, effectively combating the proliferation of counterfeit medications.

The advantages of blockchain technology extend beyond health-related sectors. For instance, the luxury goods industry can utilize blockchain to verify the origin and history of high-value items, address concerns about counterfeiting, and foster consumer trust in the legitimacy of products.

Real-world applications further illustrate the transformative power of blockchain in supply chain management. Walmart, for example, has partnered with IBM to implement a blockchain-based system for tracking mangoes.[11] This system allows them to trace the fruit from farm to store shelves, ensuring freshness and compliance with food safety regulations. Similarly, British Petroleum (B.P.) employs blockchain technology to track the provenance of oil and gas, promoting transparency in their supply chain and demonstrating responsible sourcing practices.[12]

Nevertheless, the legal implications of implementing such transformative technologies warrant careful consideration. The subsequent section will explore the intricate legal landscape surrounding AI-based blockchain technology within American global supply chains.

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[10] Sheping Zhai, et al. *Research on the Application of Cryptography on the Blockchain*, JOURNAL OF PHYSICS: CONFERENCE SERIES. Vol. 1168. IOP Publishing, 2019.

[11] Mohamed Awwad, et al. *Blockchain technology for efficient management of supply chain*. Proceedings of the international conference on industrial engineering and operations management. 2018.

[12] Hongfang Lu, et al. *Blockchain technology in the oil and gas industry: A review of applications, opportunities, challenges, and risks*. IEEE ACCESS 7, 41426-41444 (2019).

B. Adopting AI for Blockchains

AI-enabled autonomy refers to the capability of machines, whether platforms or software, to function independently within set constraints to achieve goals or solve problems.[13] By learning from prior training and experiences, such systems can rapidly process vast amounts of data, adapting to dynamic scenarios and making swift, accurate decisions even with sparse data. This adaptability is crucial across civilian, industrial, and military applications. In defense, however, the complexity and stakes are higher, requiring superior standards in situational analysis, decision-making, and response. The U.S. advances these technologies primarily through federal research agencies like DARPA, ensuring their reliability and adaptability for military purposes.[14]

AI enhances data analysis and enables the extraction of profound insights from the vast amounts of data generated at each stage of the supply chain. Through machine learning algorithms, AI can discern patterns, trends, and anomalies that might elude human analysis. This facilitates predictive analytics, enabling the anticipation of demand fluctuations and potential disruptions, such as adverse weather conditions or labor strikes, thereby optimizing inventory levels to avoid both shortages and surpluses. Additionally, AI's analytical prowess can enhance supplier management by evaluating performance data recorded on the blockchain, aiding in the identification of reliable partners and foreseeing potential issues.

AI also excels in automating supply chain processes based on data extracted from blockchain systems. One significant application is the automation of smart contracts, which are self-executing contracts with terms directly embedded in code.[15] AI can automatically trigger these contracts when predefined conditions are met, streamlining operations such as payments and approvals. Furthermore, AI-driven automated re-ordering systems can monitor inventory levels and initiate re-orders as needed, ensuring a consistent flow of goods and reducing manual intervention.

Advanced tracking and visibility are other areas where AI significantly contributes to blockchain-based supply chain management. By analyzing real-time data points on the blockchain, AI provides comprehensive insights into a product's journey from origin to destination. This level of transparency enhances customer confidence by allowing them to trace the movement and provenance of their products, while AI's capabilities in fraud detection help identify inconsistencies or suspicious activities, thereby mitigating the risk of counterfeit goods.

The synergy between AI and blockchain fosters a sophisticated supply chain ecosystem characterized by heightened efficiency, transparency, and cost savings.[16] AI can predict equipment failures and maintenance needs by analyzing sensor data and information from Internet of Things (IoT) devices linked to the blockchain, facilitating

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[13] This is based on the article "*AI-enabled Autonomy*". Retrievable from https://www.baesystems.com/en-us/definition/what-is-ai-enabled-autonomy.

[14] William B Bonvillian, and Richard Van Atta. *ARPA-E and DARPA: Applying the DARPA model to energy innovation*. THE JOURNAL OF TECHNOLOGY TRANSFER 36.5 469-513. (2011).

[15] Lennart Ante, *Smart contracts on the blockchain–A bibliometric analysis and review*. TELEMATICS AND INFORMATICS 57, 101519. (2021).

[16] Reyes-González Juan Pablo, et al. *Big data in the healthcare system: a synergy with artificial intelligence and blockchain technology*. JOURNAL OF INTEGRATIVE BIOINFORMATICS 19.1, 20200035. (2022).

predictive maintenance that reduces downtime and prolongs machinery life. AI's ability to optimize routing and logistics further reduces transportation costs and delivery times, enhancing overall supply chain performance.

Risk management is another domain where AI demonstrates significant potential. By analyzing historical and real-time blockchain data, AI can identify potential disruptions, assess supplier reliability, and predict the impact of external factors such as geopolitical events or natural disasters. This proactive approach enables companies to prepare for and respond to unforeseen events more effectively, enhancing supply chain resilience.

AI's role in bolstering the security of blockchain networks is also critical. Machine learning algorithms can detect and respond to cyber threats in real-time, identifying unusual patterns or activities indicative of security breaches and facilitating immediate action to prevent data loss or tampering.[17]

Moreover, AI assists in supplier and partner selection by evaluating performance, reliability, and compliance data recorded on the blockchain.[18] This data-driven approach ensures that companies engage with the most reliable and efficient partners, thereby enhancing overall supply chain efficiency. AI can also monitor and ensure compliance with environmental regulations and sustainability standards, tracking the carbon footprint of products, adherence to labor laws, and ethical sourcing of materials.[19]

C. Illustrative Cases Related to the Adoption of Blockchain Technology in Supply Chains

The potential of blockchain technology to revolutionize supply chains is undeniable. This section explores its real-world impact through two compelling cases: Walmart's implementation for enhanced food safety and traceability and the collaboration between Maersk and IBM to digitize global trade. These examples showcase the transformative power of blockchain in ensuring transparency, efficiency, and trust across complex supply networks.

1. Walmart: Food Safety and Traceability

Walmart has leveraged blockchain technology in partnership with IBM to revolutionize the traceability and safety of its food products.[20] The traditional methods for tracing the provenance of food items were plagued by inefficiencies and delays, making it challenging to pinpoint the source of contamination during foodborne illness outbreaks swiftly. To address these shortcomings, Walmart adopted IBM's Food Trust

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[17] Varun Shah, *Machine Learning Algorithms for Cybersecurity: Detecting and Preventing Threats.* REVISTA ESPANOLA DE DOCUMENTACION CIENTIFICA 15.4, 42-66 (2021).

[18] Naoum Tsolakis, et al. Artificial intelligence and blockchain implementation in supply chains: a pathway to sustainability and data monetisation?. ANNALS OF OPERATIONS RESEARCH 327.1, 157-210 (2023).

[19] *See, for example,* Baran Ada,. *Eco-Innovation and Regulation: Evaluating the Impact of AI Policies on the Ecological Footprint of the IT Sector*. BS thesis. University of Twente, 2024.

[20] Reshma Kamath, *Food traceability on blockchain: Walmart's pork and mango pilots with IBM*. THE JOURNAL OF THE BRITISH BLOCKCHAIN ASSOCIATION 1.1 (2018).

blockchain platform, which meticulously records each stage of a product's journey from farm to store.[21]

By implementing this blockchain solution, Walmart can now trace the origin of products such as mangoes and pork within seconds, a dramatic improvement from the previous timeframe of days or weeks.[22] This enhanced traceability not only ensures greater food safety but also enables a much faster response to contamination issues, significantly mitigating the risk to public health. The blockchain's immutable ledger provides a transparent and secure record, offering a reliable means to track and verify the entire supply chain process. Consequently, this technological advancement positions Walmart at the forefront of food safety and supply chain innovation, demonstrating the profound impact of blockchain in enhancing operational efficiency and consumer protection.

2. Maersk and IBM: Global Trade Digitization

Maersk, a leading shipping company, has collaborated with IBM to develop TradeLens, a pioneering blockchain-based platform aimed at transforming global trade.[23] The traditional international shipping landscape is riddled with inefficiencies and a lack of transparency due to the involvement of numerous stakeholders, including shippers, customs officials, ports, and carriers. This complexity often results in delays and redundant paperwork, hampering the overall efficiency of the trade process.

TradeLens addresses these challenges by recording all shipping events and documentation on a shared ledger, accessible to all parties involved.[24] Through the use of smart contracts, the platform automates the exchange of information and approvals, thus streamlining operations. This innovative approach has markedly reduced the reliance on paperwork, expedited customs procedures, and enhanced the transparency and efficiency of global trade operations. For example, the time required to send shipping documents has been reduced by up to 40%, illustrating the profound impact of TradeLens in optimizing the global trade ecosystem. By integrating blockchain technology, Maersk and IBM have set a new standard in the digitization of international shipping, fostering greater collaboration and efficiency across the supply chain.

D. Advantages and Limitations of AI-Enabled Blockchain Technology in Supply Chains

The combination of AI and blockchain has great potential to improve the efficiency of various industries.[25] In finance, for example, AI can analyze data stored on blockchain to detect fraud, while in healthcare, AI and blockchain can create a secure

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[21] Bowen Tan, et al. *The impact of blockchain on food supply chain: The case of Walmart*. Smart Blockchain: First International Conference, SmartBlock 2018, Tokyo, Japan, December 10–12, 2018, Proceedings 1. Springer International Publishing, 2018.

[22] Reshma Kamath, *Food traceability on blockchain: Walmart's pork and mango pilots with IBM*. THE JOURNAL OF THE BRITISH BLOCKCHAIN ASSOCIATION 1.1 (2018).

[23] Thomas Jense, et al."Delivering business value with blockchain technology: The long journey of TradeLens. MIS QUARTERLY EXECUTIVE 18.4, 221-243 (2019).

[24] Wafaa A.H. Ahmed, and Alexa Rios. *Digitalization of the international shipping and maritime logistics industry: a case study of TradeLens*. THE DIGITAL SUPPLY CHAIN. Elsevier, 309-323 (2022).

[25] Satish Kumar, et al. *Artificial intelligence and blockchain integration in business: trends from a bibliometric-content* analysis. INFORMATION SYSTEMS FRONTIERS 25.2, 871-896 (2023).

system for patients to control their medical records.[26] Furthermore, this convergence can benefit areas like supply chain management, marketing, and social media by making processes more efficient and secure.[27] On one hand, it offers undeniable advantages, such as enhanced traceability and transparency, which foster greater trust and collaboration among stakeholders. By creating an immutable record of every step a product takes, from raw materials to finished goods, blockchain ensures that critical data points are accessible and verifiable by all participants.[28] This level of transparency allows consumers to see a product's journey and enables regulators to enforce quality standards more effectively. Moreover, blockchain empowers companies to differentiate themselves by providing consumers with verifiable information about product sourcing and sustainability practices.[29]

AI integration further unlocks the potential for intelligent automation within the supply chain.[30] AI algorithms can analyze vast datasets stored on the blockchain, identifying inefficiencies and optimizing processes. This can lead to significant cost reductions and overall improved supply chain efficiency. The use of AI can also streamline operations through automation and data-driven insights, resulting in faster product recalls, optimized inventory management, and better resource allocation.[31]

However, the limitations inherent to blockchain technology cannot be ignored. Scalability remains a significant challenge, as current blockchain implementations often struggle to handle the massive data volumes associated with complex global supply chains.[32] This can result in network congestion and transaction delays, potentially hindering real-time applications. Additionally, integrating blockchain technology with existing IT infrastructure is a major hurdle, as many companies rely on legacy systems that may not be readily compatible with the distributed nature of blockchains. This necessitates substantial investments in system upgrades and data migration strategies to achieve seamless integration.

To navigate these challenges, stakeholders must work together to address legal obstacles and ensure responsible innovation within a clear legal framework. Collaboration from policymakers, industry leaders, and legal scholars is essential to harness the potential of AI-enabled blockchain technology for a more efficient, transparent, and ethical global trade ecosystem. Overcoming resistance to change and incentivizing all supply chain participants, along with standardizing data formats and implementing robust cybersecurity measures, are crucial steps toward widespread adoption. Thus, while AI-enabled blockchain presents transformative opportunities for

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[26] *Id.*
[27] *Id.*
[28] Santhi Raja Abirami, and Padmakumar Muthuswamy. *Influence of blockchain technology in manufacturing supply chain and logistic*s. LOGISTICS 6.1, 15 (2022).
[29] Nir Kshetri, Blockchain and sustainable supply chain management in developing countries. INTERNATIONAL JOURNAL OF INFORMATION MANAGEMENT 60, 102376 (2021).
[30] Olubunmi Adeolu Adenekan, et al. *Enhancing manufacturing productivity: A review of AI-Driven supply chain management optimization and ERP systems integration*. INTERNATIONAL JOURNAL OF MANAGEMENT & ENTREPRENEURSHIP RESEARCH 6.5, 1607-1624 (2024).
[31] Rafsan Mahi, *Optimizing supply chain efficiency in the manufacturing sector through ai-powered analytics.* INTERNATIONAL JOURNAL OF MANAGEMENT INFORMATION SYSTEMS AND DATA SCIENCE 1.1, 41-50 (2024).
[32] Weichao Gao, et al. *A survey of blockchain: Techniques, applications, and challenges*. 2018 27th international conference on computer communication and networks (ICCCN). IEEE, 2018.

supply chains, careful consideration of both opportunities and challenges is required to realize its full potential.

II. U.S. LAWS RELATED TO BLOCKCHAIN TECHNOLOGY IN SUPPLY CHAINS

The adoption of blockchain technology in global supply chains is regulated by a variety of U.S. laws and regulations that span across technology, data privacy, security, financial transactions, and international trade. In the realm of blockchain and distributed ledger technology (DLT), while there is no singular federal law specifically targeting blockchain, several federal agencies provide essential guidelines. These laws affect how blockchain is implemented, ensuring compliance with legal standards. Here are key relevant laws and their impact on blockchain in supply chain management, illustrated with real-life examples:

There is no single overarching federal law governing blockchain in supply chains. Cybersecurity laws, such as the Cybersecurity Information Sharing Act (CISA), promote the sharing of cyber threat information between the government and the private sector, addressing cybersecurity concerns in blockchain implementations.[33] Guidelines and standards provided by the National Institute of Standards and Technology (NIST) ensure data security and integrity in blockchain applications. Other federal and state agencies also provide crucial guidelines depending on how the technology is used. These agencies include the Securities and Exchange Commission (SEC) for financial transactions involving blockchain-based tokens, the Commodity Futures Trading Commission (CFTC) for tokens classified as commodities, and the Federal Trade Commission (FTC) for consumer protection concerns related to potential misuse of the technology.

A. Cybersecurity Law

Cybersecurity is a critical area governed by laws such as the Cybersecurity Information Sharing Act (CISA), which promotes the sharing of cyber threat information between the government and the private sector. Blockchain implementations in supply chains must address cybersecurity concerns by adhering to guidelines and standards provided by the National Institute of Standards and Technology (NIST) to ensure data security and integrity.[34]

Navigating the legal landscape for adopting blockchain technology in global supply chains requires understanding and adhering to a complex array of laws and regulations across various domains. Companies must stay updated on legal developments and work closely with legal experts to ensure that their blockchain applications comply with all relevant regulatory requirements. This includes addressing data privacy laws such as the European Union's General Data Protection Regulation (GDPR), which requires companies to implement robust data security measures such

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[33] John Heidenreich. *The privacy issues presented by the Cybersecurity Information Sharing Act*. NDL REV. 91, 395. (2015).

[34] Craig Schlenoff, et al.. *Performance evaluation of intelligent systems at the national institute of standards and technology (NIST).* INTERNATIONAL TEST AND EVALUATION ASSOCIATION (ITEA) JOURNAL 32.1, 59-67 (2011).

as anonymization techniques, and procedures for handling data subject rights requests.[35]

B. Securities and Exchange Commission (SEC) Regulations

The Securities and Exchange Commission (SEC) and the Commodity Futures Trading Commission (CFTC) are crucial in regulating blockchain applications within the U.S. financial system. The SEC oversees blockchain applications related to securities, guiding initial coin offerings (ICOs) and digital asset transactions,[36] while the CFTC regulates blockchain applications in commodities and derivatives markets. This regulatory oversight is particularly relevant for supply chain management systems that utilize tokenization, the process of creating digital tokens representing ownership or rights associated with an asset. In supply chains, these tokens can represent ownership of physical goods or commodities, and if classified as securities by the SEC, they are subject to stringent registration and disclosure requirements. These requirements ensure investor protection by providing accurate and comprehensive information about the tokenized asset and associated risks. Non-compliance with SEC regulations can lead to significant legal penalties for issuing companies. Thus, companies integrating blockchain technology and considering tokenization in their supply chains must carefully evaluate the classification of these tokens under SEC regulations. Additionally, data privacy regulations such as the Health Insurance Portability and Accountability Act (HIPAA) for medical data and the General Data Protection Regulation (GDPR) for European users must be considered depending on the information stored on the blockchain. Ensuring compliance with these regulatory frameworks can help mitigate legal risks and foster a secure, transparent environment within the tokenized supply chain ecosystem.

C. General Data Protection Regulation (GDPR) of the European Union (EU)

The European Union's General Data Protection Regulation (GDPR) is a landmark piece of legislation in data privacy that extends beyond the EU, affecting any organization, including U.S. companies, that processes the personal data of EU citizens. This has significant implications for blockchain-enabled supply chains involving European suppliers, customers, or any data pertaining to EU individuals. Companies operating such blockchain-based supply chains must comply with GDPR's stringent data protection principles, which mandate robust safeguards for personal data, ensuring data security, accuracy, and minimization of data collection.[37] The GDPR also empowers individuals with various rights concerning their personal data, such as the "right to be forgotten," allowing EU citizens to request the erasure of their personal data under certain conditions.

Data privacy and security laws significantly impact blockchain technology, especially when storing and transmitting personal data. Despite being a European

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[35] Chris Jay Hoofnagle, et al. *The European Union general data protection regulation: what it is and what it means.* INFORMATION & COMMUNICATIONS TECHNOLOGY LAW 28.1, 65-98 (2019).

[36] Saman Adhami, and Giancarlo Giudici. *Initial coin offerings: Tokens as innovative financial assets*. Blockchain economics and financial market innovation: Financial innovations in the digital age 61-81, (2019).

[37] Abdulah M. Aseri, *The implication of the European union's general data protection regulation (GDPR) on the global data privacy*. JOURNAL OF THEORETICAL AND APPLIED INFORMATION TECHNOLOGY 98.04 (2020).

Union regulation, the GDPR affects U.S. companies that handle EU citizens' data, requiring blockchain implementations to adhere to its stringent data privacy requirements. Additionally, the California Consumer Privacy Act (CCPA) enhances privacy rights and consumer protections for Californians, impacting blockchain applications that process personal data from this state. Companies must ensure compliance with these regulatory frameworks to mitigate legal risks and foster a secure, transparent environment in blockchain-enabled supply chains.

D. Federal Trade Commission (FTC) Regulations

The Federal Trade Commission (FTC) plays a critical role in ensuring consumer protection in the United States by enforcing fair business practices, including regulations on advertising and data privacy.[38] As blockchain technology is increasingly integrated into supply chain traceability systems, compliance with FTC regulations becomes essential.[39] The FTC focuses on deceptive marketing practices, particularly related to product provenance and authenticity. Companies leveraging blockchain to track the origin of consumer goods must ensure that their marketing claims about traceability and authenticity are accurate and verifiable. Misleading consumers with inflated claims about blockchain capabilities, such as asserting 100% traceability when the system falls short, could result in FTC penalties for false advertising.

Moreover, the FTC has authority over data privacy practices. Companies using blockchain within their supply chains must carefully manage how consumer data is collected, stored, and used. The FTC scrutinizes these practices to ensure they comply with data privacy regulations, especially when the blockchain system involves sensitive consumer information. Adhering to FTC regulations is crucial for fostering consumer trust and transparency within blockchain-enabled supply chains, thereby creating a secure and ethical environment for all participants.

Additionally, supply chain operations utilizing blockchain technology must comply with regulations enforced by the U.S. Customs and Border Protection (CBP), which includes documentation and traceability requirements for importing and exporting goods. Ensuring compliance with both FTC and CBP regulations allows companies to effectively integrate blockchain technology into their supply chains, promoting legal adherence and operational efficiency.

E. Intellectual Property Laws

Intellectual property laws play a critical role in the implementation of blockchain technology, with the U.S. Patent and Trademark Office (USPTO) overseeing the patenting of blockchain innovations and the registration of trademarks.[40] Companies must ensure that their blockchain technology does not infringe on existing patents to avoid legal disputes and potential penalties. The USPTO's management of patenting processes involves a thorough examination to verify the originality and novelty of blockchain-related inventions, thereby safeguarding the intellectual property rights of innovators. Additionally, the registration of trademarks protects brands and

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[38] Richard A. Posner, *The Federal Trade Commission*. THE UNIVERSITY OF CHICAGO LAW REVIEW 37.1, 47-89 (1969).

[39] *Id.*

[40] Birgit Clark, and Ruth Burstall. *Crypto-pie in the sky? How blockchain technology is impacting intellectual property law*. STAN. J. BLOCKCHAIN L. & POL'Y 2, 252. (2019).

ensures that companies can maintain a unique identity in the marketplace.[41] Compliance with intellectual property laws is essential for fostering innovation and maintaining competitive advantage, as it prevents unauthorized use of patented technologies and protects the proprietary interests of companies developing blockchain solutions. By navigating the complexities of patent law and securing necessary protections through the USPTO, companies can advance their blockchain technologies with confidence, contributing to a robust and legally sound technological landscape.

F. Uniform Commercial Code (UCC)

The Uniform Commercial Code (UCC) plays a crucial role in facilitating commercial transactions within the United States by establishing a standardized legal framework governing contracts and sales, which are fundamental to supply chains.[42] As blockchain technology introduces smart contracts that automate various supply chain processes, such as triggering payments upon delivery of goods, ensuring these contracts align with the UCC is essential. Smart contracts must adhere to the UCC's regulations on contract formation, enforceability, and performance, which include requirements for offer, acceptance, consideration, and legality of terms.[43] Compliance with these stipulations is critical to avoid legal challenges and disputes that could arise from deviations from established legal principles. The integration of smart contracts into blockchain-enabled supply chains necessitates a thorough understanding of the UCC to ensure legal certainty and streamline operations. By programming smart contracts to meet UCC standards, companies can promote trust and efficiency within their supply chain ecosystems, thereby fostering a more reliable and legally sound operational environment. Ensuring that blockchain-based smart contracts comply with the UCC is vital for their enforceability and the smooth functioning of modern supply chains.

G. Electronic Signatures in Global and National Commerce Act (E-SIGN Act)

The Electronic Signatures in Global and National Commerce Act (E-SIGN Act) establishes the legal validity of electronic transactions within the United States, granting legal recognition to electronic signatures and records.[44] This promotes trust and facilitates the adoption of digital commerce practices. In blockchain-enabled supply chains, the E-SIGN Act is particularly relevant for the use of smart contracts in contract management. Smart contracts, which are self-executing agreements stored on a blockchain, often depend on electronic signatures to authenticate the involved parties. The E-SIGN Act ensures that these electronically signed smart contracts are legally binding and enforceable within the U.S. court system, providing legal certainty that

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[41] Beth Simone Noveck, *Trademark law and the social construction of trust: Creating the legal framework for online identity*. WASH. ULQ 83, 1733 (2005).
[42] Robert A Hillman,. *Construction of the Uniform Commercial Code: UCC Section 1-103 and Code Methodology.* BC INDUS. & COM. L. REV. 18, 655 (1976).
[43] G. Marcus Cole, *The long convergence: Smart contracts and the customization of commercial law*. S. CAL. L. REV. 92, 851 (2018).
[44] Jonathan E. Stern, *The electronic signatures in global and national commerce act.* BERK. TECH. LJ 16, 391 (2001).

fosters trust and streamlines digital transactions within the supply chain ecosystem.[45] By adhering to the E-SIGN Act's provisions on electronic signatures, companies can effectively utilize the efficiency and security advantages of smart contracts in their blockchain-based supply chains. Additionally, compliance with the Uniform Commercial Code (UCC) is necessary to ensure the enforceability of these smart contracts, as the UCC outlines the essential elements for contract formation, enforceability, and performance. By ensuring adherence to both the E-SIGN Act and the UCC, companies can promote a legally sound, efficient, and trustworthy operational environment for their blockchain-enabled supply chains.

H. Drug Supply Chain Security Act (DSCSA)

The Drug Supply Chain Security Act (DSCSA) mandates the creation of an electronic, interoperable system to trace prescription drugs throughout the U.S. supply chain, aiming to enhance security and integrity by preventing counterfeit drugs from infiltrating the market.[46] Pharmaceutical companies are leveraging blockchain technology to meet DSCSA requirements, ensuring comprehensive data interoperability and adherence to traceability standards. Blockchain provides an immutable and transparent ledger that can effectively track the movement of drugs from manufacturers to consumers. This technology facilitates compliance with the stringent standards set forth by the DSCSA, thereby safeguarding public health.[47] An illustrative parallel can be seen in the collaboration between IBM and Walmart on the IBM Food Trust blockchain, which significantly enhanced traceability in the food supply chain. Similarly, the application of blockchain in the pharmaceutical supply chain ensures that all stakeholders, from manufacturers to end consumers, have access to a secure and transparent record of drug movements. By adopting blockchain, pharmaceutical companies not only comply with DSCSA regulations but also enhance the overall integrity and safety of the drug supply chain, protecting consumers from counterfeit and substandard medications.

I. Food Safety and International Trade

In specific industries, regulatory bodies such as the Food and Drug Administration (FDA) and the Federal Motor Carrier Safety Administration (FMCSA) impose additional requirements on blockchain implementations.[48] The FDA mandates that blockchain systems in pharmaceuticals and food products adhere to stringent regulations, ensuring safety, traceability, and transparency. This ensures that products are safe for consumption and that their origins and journey through the supply chain are meticulously documented.[49] Similarly, the FMCSA sets standards for tracking and safety in logistics and transportation, which blockchain technology must meet to ensure

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[45] Jennifer L. Koger, *You Sign, E-SIGN, We All Fall Down: Why the United States Should Not Crown the Marketplace as Primary Legislator of Electronic Signatures*. TRANSNAT'L L. & CONTEMP. PROBS. 11, 491 (2001).

[46] Shambhu Sarkar, *Why Pharmaceutical Drug Traceability in the US Needs a Centralized Cloud-Based Platform.* CURRENT JOURNAL OF APPLIED SCIENCE AND TECHNOLOGY 42.21, 1-11 (2023).

[47] Girish Babu Botta, *Pharmaceutical medicine traceability: An overview of global compliance*. WORLD JOURNAL OF BIOLOGY PHARMACY AND HEALTH SCIENCES 15.2 245-252. (2023)

[48] Mark J. Andrews, and Henry E. Seaton. *Safety fitness determinations: what is FMCSA measuring?*. JOURNAL OF TRANSPORTATION MANAGEMENT 29.1, 8 (2018).

[49] John Mangan, and Chandra Lalwani. *Global logistics and supply chain management*. John Wiley & Sons, 2016.

compliance. These industry-specific regulations are crucial for maintaining the integrity and safety of supply chains.

Moreover, existing laws and international trade regulations are essential when implementing blockchain technology. The FDA's involvement is significant when blockchain is used to track food products, ensuring adherence to established safety standards. Blockchain can also facilitate smoother customs clearances and document verification in international trade, streamlining processes and reducing delays. By meeting these regulatory requirements, blockchain technology enhances the reliability and efficiency of supply chains across various industries, ensuring that safety, traceability, and compliance are upheld from production to final delivery.

In conclusion, by proactively addressing these legal considerations, companies can avoid hefty fines and penalties while fostering trust with trading partners within the globalized supply chain ecosystem. Compliance with cybersecurity standards and data privacy regulations ensures that blockchain applications are not only legally sound but also secure and trustworthy, enhancing their reliability and efficiency in the supply chain. In the process of adopting blockchain technology in global supply chains, companies must remain updated on legal developments and work closely with legal experts to ensure their blockchain applications comply with all relevant regulatory requirements. This comprehensive regulatory framework ensures that blockchain technology is implemented in a legally compliant and secure manner, harnessing its transformative potential in supply chain management.

III. U.S. SANCTIONS AND INTERNATIONAL REGULATORY HARMONIZATION

As the international community grapples with the complexities of economic sanctions and the imperative for regulatory harmonization, the integration of artificial intelligence and blockchain emerges as a pivotal strategy. This confluence of technologies offers a sophisticated means to enhance transparency, efficiency, and compliance in a globally interconnected financial system. Through the deployment of AI's analytical prowess and blockchain's immutable ledger capabilities, regulatory bodies can achieve a cohesive and robust mechanism for sanctions enforcement. This section explores how these advanced technological tools facilitate international regulatory harmonization, ensuring that sanctions are applied consistently and effectively across diverse jurisdictions. The discussion delves into the operational synergies between AI and blockchain, examining their potential to transform the landscape of international regulatory compliance and fortify the enforcement of economic sanctions against non-compliant entities.

A. Cross-Border Trade and Jurisdiction

The existence of trade agreements and tariffs can significantly impact the feasibility and cost-effectiveness of utilizing AI-enabled blockchain across borders.[50] For example, trade agreements that streamline customs procedures and reduce tariffs on technology imports can incentivize the adoption of blockchain solutions within

[50] Dhruv Patel, et al;. *Security in modern manufacturing systems: integrating blockchain in artificial intelligence-assisted manufacturing*. INTERNATIONAL JOURNAL OF PRODUCTION RESEARCH 62.3, 1041-1071 (2024).

global supply chains. Conversely, protectionist trade policies that impose high tariffs on technology components can hinder the widespread adoption of this technology. Understanding the specific provisions of relevant trade agreements is crucial for businesses contemplating the implementation of AI-enabled blockchain across international borders.

The distributed nature of blockchain networks, where data can be stored across multiple jurisdictions, raises complex questions regarding the applicable laws governing these systems.[51] Determining which country's laws govern a particular smart contract or data point within the blockchain can be challenging. This ambiguity creates uncertainty for businesses operating within these ecosystems, potentially hindering innovation and investment.

Blockchain transactions frequently span multiple jurisdictions, creating significant complexities in determining the applicable legal framework in the event of disputes. In cross-border trade, the challenge is exacerbated by the varying laws across different countries regarding contract enforcement, data privacy, and financial transactions. This legal fragmentation presents a substantial hurdle for international business operations.

For instance, consider a U.S. exporter utilizing blockchain technology for supply chain management with partners in Asia and Europe. This scenario necessitates navigating a labyrinthine web of international laws. The differing regulations on contract enforcement mean that a dispute over a transaction could require resolution in multiple jurisdictions. This not only complicates the legal process but also increases costs and uncertainty for the involved parties. The exporter must contend with diverse legal standards, procedural rules, and enforcement mechanisms, which can significantly delay dispute resolution and inflate associated legal expenses.

The global nature of blockchain transactions calls for a harmonized legal approach to ensure clarity and consistency in the application of law. Without international consensus and standardized regulations, companies operating across borders face ongoing challenges in legal compliance and contract enforcement. Addressing these issues requires a coordinated effort to develop unified legal frameworks that can accommodate the decentralized and borderless nature of blockchain technology. This would facilitate smoother international transactions and provide greater legal certainty for businesses engaged in global trade, ultimately enhancing the efficiency and reliability of blockchain-enabled supply chain management.

B. The Need for International Regulatory Harmonization

It is noted that there are ongoing efforts to establish unified international standards for cross-border trade and their corresponding rules and regulations. Organizations such as the International Organization for Standardization (ISO) are actively developing standards for blockchain technology, addressing issues like terminology, security, and interoperability. Additionally, industry consortiums and

[51] Yang Xiao, et al. *A survey of distributed consensus protocols for blockchain networks*. IEEE COMMUNICATIONS SURVEYS & TUTORIALS 22.2, 1432-1465 (2020).

international trade organizations are playing a crucial role in fostering collaboration and harmonization efforts.

Existing international frameworks and agreements, while not specifically designed for AI-enabled blockchain, can offer a foundation for future regulatory harmonization. For instance, the United Nations Commission on International Trade Law (UNCITRAL) Model Law on Electronic Commerce provides a framework for legal recognition of electronic transactions, which can be extrapolated to smart contracts within blockchain ecosystems.[52] Similarly, the Hague Convention on Contracts for the International Sale of Goods (CISG) offers a framework for resolving cross-border sales disputes, which can be adapted to the context of AI-enabled blockchain supply chains.

Regulatory harmonization represents a process where regulatory authorities align technical requirements for the development and marketing of pharmaceutical products.53 Harmonization of regulatory requirements has many benefits, such as ensuring favorable marketing conditions to support early access to medicinal products, promoting competition and efficiency, and reducing unnecessary duplication of clinical testing. For example, the FDA engages with stakeholders globally through international venues to respond to the increasingly complex and global nature of pharmaceutical industry operations and related regulatory oversight. This work progresses the FDA's mission of ensuring pharmaceutical safety and effectiveness. It is accomplished through the FDA's involvement in several international organizations, including the International Council for Harmonisation (ICH), the International Pharmaceutical Regulators Programme (IPRP), the Pharmaceutical Inspection Cooperation Scheme (PIC/S), Asia-Pacific Economic Cooperation (APEC), and International Coalition of Medicines Regulatory Authorities (ICMRA).

However, the limitations of these existing frameworks become apparent when considering the unique characteristics of AI-enabled blockchain technology. The distributed nature of blockchain networks and the potential for autonomous decision-making by AI algorithms necessitate a reevaluation of traditional legal concepts like jurisdiction and liability.

Achieving international regulatory harmonization for AI-enabled blockchain technology requires a multi-pronged approach. Collaboration between governments, industry leaders, and legal scholars remains paramount. International organizations like ISO and UNCITRAL can play a vital role in facilitating dialogues and fostering the development of comprehensive regulatory frameworks. Furthermore, learning from existing regional initiatives can offer valuable insights. The European Union's efforts to regulate crypto assets through frameworks like MiCA (Markets in Crypto Assets) can serve as a case study for broader international harmonization efforts.[54]

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[52] Vesna Zivkovic, *Work of the United Nations Commission on International Trade Law (UNICTRAL) on the Regulation of Electronic Commerce*. STRANI PRAVNI ZIVOT 281, (2004).

[53] See *International Regulatory Harmonization,* US Food and Drug Administration, 03/26/2020. Available at: https://www.fda.gov/drugs/cder-international-program/international-regulatory-harmonization.

[54] Oliver Read, and Carolin Diefenbach. *The Path to the EU Regulation Markets in Crypto-assets (MiCA)*. No. 13/2022. WIFIN Working Paper, 2022.

By acknowledging the challenges and opportunities presented by the current regulatory landscape, stakeholders can work towards a future where a harmonized international approach fosters innovation and facilitates the responsible and secure integration of AI-enabled blockchain technology within global supply chains.

C. U.S. Sanctions on Foreign Businesses

The U.S. enforces sanctions on foreign businesses for a myriad of reasons, predominantly anchored in national security interests or broader foreign policy objectives. Among the various types of sanctions imposed are those related to terrorism financing and proliferation, targeting businesses that support terrorist organizations or countries engaged in the development of weapons of mass destruction. For example, Iranian entities associated with their nuclear program or businesses funneling resources to designated terrorist groups frequently face such sanctions. Additionally, human rights sanctions are directed at businesses implicated in egregious human rights violations, including forced labor and other severe abuses. Cybersecurity sanctions, on the other hand, focus on entities involved in malicious cyber activities such as cyberattacks or intellectual property theft. Furthermore, regional sanctions encompass entire nations or regions, as seen in the comprehensive sanctions imposed on countries like Cuba, Myanmar, and North Korea, aimed at pressuring these regimes to alter their behaviors.[55]

The specific restrictions within U.S. sanctions programs can vary widely, tailored to the targeted entity and the nature of the violation. These restrictions may include the freezing of financial assets within U.S. jurisdiction, thereby blocking the sanctioned businesses from accessing their resources. Trade restrictions often accompany these measures, prohibiting or severely limiting commercial exchanges with the sanctioned entities, including import and export bans. Investment restrictions may be imposed, preventing or limiting investments in these businesses, thereby cutting off potential financial support. Visa restrictions are also a common tool, denying entry to individuals associated with the sanctioned entities.

A salient illustration of these measures can be seen in the sanctions imposed on various foreign businesses. For instance, Huawei Technologies Co., Ltd., a major Chinese telecommunications company, was added to the U.S. Department of Commerce's Entity List in 2019,[56] significantly restricting its access to American technology and software due to national security concerns regarding espionage and surveillance.[57] Similarly, Rosneft Trading S.A., a subsidiary of the Russian state-controlled oil company Rosneft, was sanctioned in 2020 for its involvement in the Venezuelan oil sector, specifically aiding the Maduro regime by facilitating the sale and transport of Venezuelan crude oil.[58] The China National Petroleum Corporation (CNPC) and its subsidiaries have been sanctioned multiple times, particularly for their involvement in Iran's energy sector amidst concerns over Iran's nuclear program and

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[55] Yesun Yoon. *Assessment of the effectiveness of economic sanctions: The cases of Iran, North Korea, Myanmar, and Cuba*. Diss. Monterey, California: Naval Postgraduate School, 2017.

[56] Halil Deligöz, *US Technological Sanctions: The Huawei Case*. GLOBAL TRADE AND CUSTOMS JOURNAL 19.5 (2024).

[57] E. K. Jaisal, The US, China and Huawei debate on 5G telecom technology: Global apprehensions and the Indian scenario. OPEN POLITICAL SCIENCE 3.1, 66-72. (2020).

[58] Meiramkul Saiymova, et al. *Russia's petroleum industry in the period of sanctions and COVID-19 Pandemic: a review and analysis.* INTERNATIONAL JOURNAL OF ENERGY ECONOMICS AND POLICY 11.5, 483-489 (2021).

other destabilizing activities.[59] In 2019, the U.S. sanctioned subsidiaries of Dalian Ocean Shipping Company (COSCO), a major Chinese shipping company, for transporting Iranian oil in violation of U.S. sanctions aimed at curbing Iran's nuclear ambitions.[60] Another notable case is ZTE Corporation, which faced severe sanctions in 2018 for violating U.S. export controls related to Iran and North Korea, resulting in a prohibition on receiving U.S.-made components and causing significant operational disruptions.[61] Lastly, Nord Stream 2 A.G., the Swiss-based entity responsible for constructing the Nord Stream 2 gas pipeline from Russia to Germany, faced U.S. sanctions due to concerns that the pipeline would increase European dependence on Russian energy while reducing Ukraine's transit revenue.[62]

These examples underscore the U.S. government's strategic deployment of economic sanctions to address a diverse array of international challenges, leveraging its substantial influence over global financial and trade systems to enforce compliance and achieve its foreign policy objectives.

D. U.S. Sanctions and International Regulatory Harmonization

Imposing sanctions on foreign businesses, such as those in China, through the process of international regulatory harmonization in the American global supply chains presents several significant challenges. These challenges can be broadly categorized into issues of compliance verification, geopolitical complexities, economic interdependencies, legal and regulatory discrepancies, technological limitations, and enforcement mechanisms.

One of the primary challenges is the verification of compliance with sanctions.[63] Ensuring that foreign businesses adhere to the imposed restrictions requires robust mechanisms for monitoring and verification. This is particularly difficult given the complexity and opacity of global supply chains, where products and materials often pass through multiple intermediaries and jurisdictions. The lack of transparency in certain regions, coupled with the potential for deliberate concealment or falsification of information, complicates the task of verifying whether businesses comply with the sanctions.

Geopolitical complexities further exacerbate the challenge of imposing sanctions. The relationship between the sanctioning country and the targeted foreign business's home country can influence the effectiveness of the sanctions. For instance, if China perceives the sanctions as politically motivated or economically damaging, it may take countermeasures that undermine the sanctions' impact. Diplomatic tensions

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[59] Erica Downs, *High anxiety: The trade war and China'S oil and gas supply security*. COLUMBIA| SIPA CENTER ON GLOBAL ENERGY POLICY (2019).
[60] Liying Zhang, and Sizhuo Chen. *Amendments to the Ocean Shipping Reform Act of 2022 and Its Impact and Enlightenment*. MARINE L. & POL'Y 36 (2023).
[61] Xin Wang. *The Impact and Response of Trade Sanctions*. ASIA PACIFIC JOURNAL OF SOCIETY AND LAW· 1.1 (2024).
[62] Moniek de Jong, *Too little, too late? US sanctions against Nord Stream 2 and the transatlantic relationship*. JOURNAL OF TRANSATLANTIC STUDIES 20.2, 213-229 (2022).
[63] Richard Nephew, *Implementation of Sanctions: United* States. ECONOMIC SANCTIONS IN INTERNATIONAL LAW AND PRACTICE. Routledge, 93-115 (2019).

can lead to a lack of cooperation or even active resistance from the foreign government, making it difficult to enforce the sanctions effectively.

Economic interdependencies between countries also pose a significant challenge. The global nature of supply chains means that businesses in the United States are often reliant on foreign suppliers for critical components and materials. Imposing sanctions can disrupt these supply chains, leading to economic consequences for American businesses and consumers. The interlinked nature of the global economy means that sanctions can have unintended ripple effects, potentially harming the sanctioning country's economic interests.

Legal and regulatory discrepancies across jurisdictions present another layer of complexity. Different countries have varying legal frameworks and regulatory standards, which can hinder the harmonization of sanctions enforcement. For example, what constitutes a violation in one country may not be recognized as such in another, leading to inconsistent application and enforcement of sanctions. This inconsistency can be exploited by foreign businesses to circumvent restrictions, further complicating the regulatory landscape.

Technological limitations also pose a challenge in the implementation of sanctions.[64] While technologies like blockchain can enhance transparency and traceability, their adoption is not yet universal. The integration of such technologies into existing supply chains and regulatory frameworks requires significant investment and coordination. Additionally, technological disparities between countries and regions can lead to uneven implementation and effectiveness of sanctions.

Enforcement mechanisms are crucial to the success of sanctions, yet they are often difficult to implement and maintain.[65] Effective enforcement requires a combination of regulatory oversight, international cooperation, and punitive measures. However, coordinating these efforts on a global scale is inherently challenging. Enforcement agencies must have the capacity to monitor compliance, investigate violations, and impose penalties, all of which require substantial resources and international collaboration. The lack of a unified global regulatory body to oversee and enforce sanctions further complicates these efforts.

In summary, imposing sanctions on foreign businesses through international regulatory harmonization in American global supply chains involves a multifaceted set of challenges. These include ensuring compliance verification, navigating geopolitical complexities, managing economic interdependencies, reconciling legal and regulatory discrepancies, overcoming technological limitations, and establishing effective enforcement mechanisms. Each of these challenges requires careful consideration and coordinated efforts to achieve the desired outcomes of the sanctions while minimizing unintended consequences.

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[64] Tim Beal, *Sanctions as instrument of coercion: Characteristics, limitations, and consequences*. Sanctions as War. Brill, 27-50 (2021).

[65] Bryan R. Early and Timothy M. Peterson. *Does punishing sanctions busters work? Sanctions enforcement and US trade with sanctioned state*s. POLITICAL RESEARCH QUARTERLY 75.3, 782-796. (2022).

E. How AI-enabled Blockchain Technology Can Help the Imposition of U.S. Sanctions

AI-enabled blockchain technology can significantly enhance the enforcement of U.S. sanctions on foreign businesses through a multifaceted approach to international regulatory harmonization. This synthesis of advanced technologies enables a more seamless, efficient, and transparent global regulatory framework, thereby reinforcing the efficacy of sanctions.

At the core of this synergy, AI's capability to analyze vast amounts of data and identify patterns plays a crucial role. Through machine learning algorithms, AI can scrutinize complex financial transactions, trade flows, and corporate networks to detect evasive maneuvers employed by sanctioned entities.[66] By integrating AI with blockchain's decentralized ledger technology, these analyses gain a layer of verifiability and immutability, ensuring that detected anomalies are recorded in an incorruptible manner. This convergence allows regulatory bodies worldwide to access and trust the data, thereby facilitating a unified response to sanctions enforcement.

Moreover, blockchain's intrinsic characteristics of transparency and traceability are instrumental in achieving regulatory harmonization. Every transaction recorded on a blockchain is time-stamped and immutable, creating an auditable trail that authorized stakeholders can access. This transparency ensures that any attempts by foreign businesses to circumvent sanctions through complex and opaque financial structures can be promptly identified and addressed. AI can enhance this process by providing real-time monitoring and analysis, flagging suspicious activities for further investigation.

The decentralized nature of blockchain also supports international cooperation by eliminating the need for a centralized authority to manage compliance data. This decentralization is pivotal in fostering trust among different jurisdictions with varying degrees of regulatory rigor. By ensuring that all participants in the global financial system operate from a common, tamper-proof ledger, blockchain reduces the potential for discrepancies and inconsistencies that can arise from disparate regulatory practices. AI can further streamline this process by automating the verification of compliance with sanctions, reducing the administrative burden on regulatory bodies, and enhancing the speed and accuracy of enforcement actions.

In addition, AI-enabled blockchain technology can facilitate the standardization of regulatory frameworks.[67] AI can analyze the regulatory requirements of various countries, identify commonalities and discrepancies, and propose standardized protocols that harmonize these regulations. Blockchain can then implement these protocols across the international financial system, ensuring consistent application and compliance. This standardization is crucial for mitigating the risks associated with regulatory arbitrage, where businesses exploit differences between national regulations to circumvent sanctions.

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[66] Iris H-Y., Chiu, and Ernest WK Lim. *Technology vs ideology: how far will artificial intelligence and distributed ledger technology transform corporate governance and business?*." BERKELEY BUS. LJ 18 1 (2021).

[67] Ritik Kumar, et al. *AI-powered blockchain technology for public health: A contemporary review, open challenges, and future research directions*. HEALTHCARE. 11. 1. MDPI, (2022).

Furthermore, AI-driven predictive analytics can forecast potential compliance risks and suggest preemptive measures to mitigate them.[68] By leveraging historical data and machine learning models, AI can predict which entities are likely to engage in sanctionable activities, allowing regulators to take proactive steps. Blockchain can then be used to share these insights securely and transparently with relevant stakeholders, ensuring a coordinated and timely response.

In conclusion, the AI-enabled blockchain technology offers a robust framework for enhancing the enforcement of U.S. sanctions on foreign businesses. By providing real-time, transparent, and immutable data, these technologies facilitate international regulatory harmonization, ensuring a cohesive and effective global response. This innovative approach not only enhances the detection and prevention of sanctions evasion but also streamlines regulatory processes, fostering a more resilient and cooperative international financial system.

IV. FUTURE TRENDS AND RECOMMENDATIONS

By examining the technological horizon and outlining recommendations, this section aims to equip companies and policymakers with the knowledge necessary to thrive in the years to come. This proactive approach will ensure that American global supply chains can harness the full potential of AI-enabled blockchain technology for a secure, efficient, and sustainable future.

A. Emerging Legal Trends in Blockchain Technology

AI-enabled blockchain technology presents a transformative force for global supply chains. This innovation necessitates navigating a rapidly evolving legal landscape. This section explores some key emerging legal trends shaping the adoption of AI-enabled blockchain within American global supply chains.

1. Regulatory Uncertainty

A primary challenge lies in the nascent nature of AI-enabled blockchain technology. Existing legal frameworks often struggle to keep pace with technological advancements, leading to a period of regulatory uncertainty.[69] This ambiguity can hinder investment and innovation as businesses grapple with unclear legal parameters. However, this also presents an opportunity for stakeholders to proactively engage with policymakers in shaping a future-proof regulatory environment.

2. Focus on Data Privacy and Security

The integration of AI algorithms within blockchain networks raises significant data privacy concerns.[70] The increased potential for data collection and the inherent transparency of blockchain necessitate robust data governance frameworks. Emerging

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[68] Sakthiswaran Rangaraju, *Secure by intelligence: enhancing products with AI-driven security measures*. EPH-INTERNATIONAL JOURNAL OF SCIENCE AND ENGINEERING 9.3, 36-41 (2023).

[69] Arjan J. Frederiks, et al. *The early bird catches the worm: The role of regulatory uncertainty in early adoption of blockchain's cryptocurrency by fintech ventures*. JOURNAL OF SMALL BUSINESS MANAGEMENT 62.2, 790-823 (2024).

[70] Oumaima Fadi, et al. *A survey on blockchain and artificial intelligence technologies for enhancing security and privacy in smart environments*. IEEE ACCESS 10, 93168-93186, (2022).

legal trends highlight a growing emphasis on user consent mechanisms, data anonymization techniques, and adherence to data privacy regulations like GDPR and CCPA. Furthermore, ensuring the security of sensitive data through encryption and vulnerability assessments is paramount.

3. Rethinking Product Liability

Traditional product liability models may struggle to adapt to the complex, interconnected nature of AI-enabled blockchain supply chains. Assigning liability for product defects becomes particularly challenging when multiple actors, including manufacturers, distributors, retailers, and even the AI platform itself, are involved. New legal doctrines tailored to this ecosystem may be required to establish clear lines of responsibility while fostering innovation and consumer safety.

4. Evolving Dispute Resolution Mechanisms

Cross-border trade disputes within AI-enabled blockchain supply chains necessitate a reevaluation of traditional dispute resolution methods.[71] While litigation remains an option, its time-consuming and expensive nature underscores the potential of blockchain-based solutions. Smart contracts offer the possibility of automated dispute resolution mechanisms encoded within the contract itself. However, the enforceability of such clauses and the need for human intervention in complex cases necessitate a hybrid approach that leverages both blockchain efficiencies and established arbitration frameworks.

5. New Trends of International Regulatory Harmonization

International regulatory harmonization for adopting AI-enabled blockchain technology in global supply chains is an evolving field marked by several key trends.[72] One significant trend is the standardization of data formats and communication protocols, which ensures interoperability among different blockchain systems and AI algorithms. [73] Organizations like ISO and IEEE are actively working on setting these standards. Cross-border regulatory collaboration is also increasing, with governments and regulatory bodies forming bilateral and multilateral agreements to reduce regulatory fragmentation and streamline international trade.

Emphasis on data privacy and security is heightened, with international regulations like GDPR setting stringent data handling requirements that are being adopted globally to foster trust among international partners.[74] Additionally, global certification programs are being developed to validate compliance with international

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[71] Anthony Amunátegui Abad, *Artificial Intelligence and the Future of International Trade Law and Dispute Settlement.* CONTEMPORARY ASIA ARBITRATION JOURNAL 17.1, 35-68 (2024).
[72] Louise Manning, et al. *Artificial intelligence and ethics within the food sector: Developing a common language for technology adoption across the supply chain*. TRENDS IN FOOD SCIENCE & TECHNOLOGY 125, 33-42 (2022).
[73] Michal S. Gal, and Daniel L. Rubinfeld. *Data standardization*. NYU L REV. 94 737. (2019).
[74] Michael L. Rustad, and Thomas H. Koenig. *Towards a global data privacy standard*. FLA. L. REV. 71, 365. (2019).

standards for AI and blockchain technologies, facilitating smoother cross-border transactions by providing benchmarks for regulatory compliance.[75]

There is also a growing trend to incorporate ethical AI principles, including guidelines for transparency, accountability, and fairness in AI algorithms used in supply chains.[76] This ensures that AI systems operate fairly and without bias across different jurisdictions. Regulatory bodies are promoting the use of blockchain to enhance traceability and transparency in supply chains, particularly in industries where provenance and authenticity are critical.

Public-private partnerships are encouraged to drive innovation and compliance in AI-enabled blockchain adoption. These partnerships foster a collaborative approach to regulatory harmonization by sharing knowledge, resources, and infrastructure. Sustainability is becoming a key focus, with harmonized regulations promoting the use of AI and blockchain technologies to enhance environmental sustainability in supply chains. Lastly, there is an increasing emphasis on developing robust monitoring and enforcement mechanisms, including real-time data analytics and automated compliance checks, to ensure adherence to agreed-upon standards and practices.

These trends reflect a concerted effort to create a cohesive, secure, and efficient global trading environment, addressing the need for standardization, collaboration, ethical considerations, and sustainability, thereby paving the way for the seamless integration of advanced technologies in international commerce.

B. Regulatory Outlook and Anticipated Changes

The adoption of AI-enabled blockchain technology within American global supply chains necessitates a proactive approach to legal and regulatory frameworks. As this technology becomes more integrated, the legal landscape surrounding it is fluid and constantly evolving. Several key areas are expected to see significant transformations.

One area of focus will be data governance. Regulations are likely to establish clear guidelines for data ownership within AI-enabled blockchain ecosystems. This may involve user consent mechanisms for data collection and utilization alongside robust data anonymization techniques to protect privacy. Additionally, we can expect the development of stringent cybersecurity standards and data breach notification requirements to ensure the security and integrity of data throughout the supply chain.

Product liability doctrines will also need to adapt to this new landscape.[77] New legal doctrines may emerge to delineate liability within the complex networks of AI-enabled blockchain supply chains. These doctrines will need to strike a balance between fostering innovation and ensuring consumer safety. When assigning responsibility for product defects, legal frameworks may consider factors like the role of algorithmic decision-making processes within the AI components of the blockchain system.

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[75] Nusi Drljevic, et al., *Perspectives on risks and standards that affect the requirements engineering of blockchain technology*. COMPUTER STANDARDS & INTERFACES 69, 103409 (2020).

[76] Louise Manning, et al. *Artificial intelligence and ethics within the food sector: Developing a common language for technology adoption across the supply chain*. TRENDS IN FOOD SCIENCE & TECHNOLOGY 125, 33-42 (2022).

[77] Richard W. Wright, *The principles of product liability*. REV. LITIG. 26, 1067 (2007).

Finally, legal frameworks will likely evolve to address the enforceability of dispute resolution clauses embedded within smart contracts across jurisdictions.[78] This may involve establishing standardized legal frameworks for smart contracts, potentially leveraging international cooperation to foster recognition of their legal validity across borders. Such efforts will promote stability and predictability within the global supply chain ecosystem.

C. Ethical and Social Implications

While the potential of AI-enabled blockchain technology for global supply chains is undeniable, its integration necessitates a nuanced approach that prioritizes not just efficiency but also fairness, transparency, and societal well-being. This section explores these crucial ethical and social considerations.

The very nature of blockchain technology, with its emphasis on immutability and distributed ledgers, can create challenges in ensuring complete transparency throughout the supply chain.[79] Opaque AI algorithms embedded within the system raise concerns about potential bias in decision-making processes, particularly regarding sourcing practices or labor conditions. To mitigate these concerns, fostering explainable AI is crucial. This means developing algorithms that can be audited and understanding their decision-making processes. Additionally, prioritizing human oversight and intervention alongside AI algorithms can help ensure ethical sourcing and responsible labor practices.

The automation potential of AI-enabled blockchain technology presents a double-edged sword. While repetitive and potentially hazardous tasks can be streamlined, concerns regarding job displacement within the supply chain sector require careful consideration. Reskilling and upskilling initiatives can help prepare workers for new roles within the evolving supply chain landscape. Even with increased automation, ensuring fair labor practices and upholding worker rights throughout the global supply chain remains paramount.

The energy consumption associated with some blockchain technologies has raised environmental concerns. Transitioning to energy-efficient blockchain protocols and fostering the use of renewable energy sources can help mitigate this impact. Furthermore, by optimizing logistics and reducing waste within AI-enabled blockchain supply chains, the technology can potentially contribute to a more sustainable global trade ecosystem.

The social responsibility for navigating the ethical and social implications of AI-enabled blockchain technology is shared among stakeholders. Companies utilizing this technology must prioritize ethical sourcing practices, fair labor conditions, and environmental sustainability throughout their supply chains. Policymakers have a role to play in establishing regulations that promote responsible innovation and mitigate potential negative social impacts. Finally, consumers can leverage their purchasing

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[78] Riikka Koulu, *Blockchains and online dispute resolution: smart contracts as an alternative to enforcement*. SCRIPTED 13, 40 (2016).

[79] Marc Pilkington. *Blockchain technology: principles and applications*. Research handbook on digital transformations. Edward Elgar Publishing, 225-253. 2016.

power to support companies that prioritize ethical and sustainable practices within AI-enabled blockchain supply chains.

In conclusion, the ethical and social implications of AI-enabled blockchain technology demand careful consideration alongside its potential benefits. By prioritizing transparency, responsible automation, environmental sustainability, and shared social responsibility, stakeholders can harness this technology to create a more just, equitable, and sustainable global supply chain ecosystem.

D. Legal Strategies for Blockchain Adoption

As blockchain technology continues to integrate into various industries, navigating the complex legal landscape is crucial for successful adoption. Several key legal strategies can help companies harness the potential of blockchain while mitigating associated risks.

Conducting regular legal audits is a critical first step. These audits assess whether a company's blockchain solutions comply with current laws and regulations.[80] By proactively identifying potential legal issues, companies can take corrective measures to ensure their blockchain initiatives operate within a compliant framework.[81]

Regulatory sandboxes offer a valuable platform for companies to test and refine their blockchain innovations in a controlled environment.[82] These sandboxes, often established by regulatory bodies, provide a safe space for experimentation while ensuring minimal disruption to existing markets. By participating in regulatory sandboxes, companies can gain valuable insights into potential regulatory hurdles and collaborate with regulators to develop compliant solutions.[83]

The global nature of supply chains necessitates international cooperation on blockchain regulations.[84] Companies can collaborate with international regulatory bodies to advocate for harmonized standards. This collaborative approach can help streamline cross-border transactions and reduce regulatory uncertainty for companies operating in a globalized marketplace.

Smart contracts, self-executing agreements stored on a blockchain, offer significant advantages but may not address all aspects of complex business relationships.[85] Drafting traditional legal agreements alongside smart contracts can provide an additional layer of security and address unforeseen contingencies. These

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[80] Daniel Drummer, and Dirk Neumann. *Is code law? Current legal and technical adoption issues and remedies for blockchain-enabled smart contracts*. JOURNAL OF INFORMATION TECHNOLOGY 35.4, 337-360 (2020).

[81] *See* Francis K.T. Wat, et al. *Potential risks to e-commerce development using exploratory factor analysis*. INTERNATIONAL JOURNAL OF SERVICES TECHNOLOGY AND MANAGEMENT 6.1, 55-71. (2005).

[82] Hilary J. Allen, *Regulatory sandboxes*. GEO. WASH. L. REV. 87, 579 (2019).

[83] Walter G. Johnson, Caught in quicksand? Compliance and legitimacy challenges in using regulatory sandboxes to manage emerging technologies. REGULATION & GOVERNANCE 17.3, 709-725 (2023).

[84] Yanling Chang, et al.. *Blockchain in global supply chains and cross border trade: a critical synthesis of the state-of-the-art, challenges and opportunities*. INTERNATIONAL JOURNAL OF PRODUCTION RESEARCH 58.7, 2082-2099 (2020).

[85] Silas Nzuva. *Smart contracts implementation, applications, benefits, and limitations*. JOURNAL OF INFORMATION ENGINEERING AND APPLICATIONS 9.5, 63-75 (2019).

legal agreements can, for instance, outline dispute resolution mechanisms or define the parameters under which a smart contract can be modified.

Building privacy considerations into the design of blockchain solutions from the outset is crucial. This "privacy by design" approach ensures compliance with data protection laws and fosters trust among users.[86] Companies can implement various techniques to achieve this, such as data anonymization or leveraging permissioned blockchains that restrict access to specific participants.

By employing these legal strategies, companies can navigate the complexities of blockchain adoption and unlock the transformative potential of this technology within a legally compliant and responsible framework.

E. Recommendations for Cross-Border Cooperation

A harmonized legal landscape is critical for fostering innovation, safeguarding consumer interests, and promoting the responsible and secure development of global supply chains. This section outlines key recommendations for achieving this objective.

Regular dialogues between policymakers, industry leaders, legal scholars, and international organizations can serve as a powerful catalyst for crafting comprehensive regulatory frameworks.[87] These dialogues should foster a collaborative environment where stakeholders can share best practices and lessons learned from early adopters. By harnessing the collective knowledge of diverse stakeholders, policymakers can develop regulations that are informed, effective, and adaptable to the evolving nature of AI-enabled blockchain technology.

Building upon existing international frameworks, such as the UNCITRAL Model Law on Electronic Commerce, can provide a robust foundation for future regulatory harmonization.[88] These established frameworks can be adapted to address the specificities of AI-enabled blockchain ecosystems, ensuring consistency and reducing regulatory burdens for businesses operating across borders. Furthermore, supporting the standardization efforts of organizations like ISO is crucial. Standardized terminology, security protocols, and interoperability standards for blockchain technology will facilitate seamless international trade and reduce regulatory uncertainty. By establishing a common language and technical infrastructure, these efforts can promote global collaboration and innovation within the blockchain space.

By proactively shaping the regulatory landscape through these collaborative efforts, stakeholders can ensure that AI-enabled blockchain technology flourishes within a legal framework that prioritizes both innovation and responsible development. This collaborative approach will safeguard consumer interests and promote the secure and ethical development of global supply chains. As the legal and regulatory landscape surrounding AI-enabled blockchain technology continues to evolve, ongoing

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[86] *See* Danezis, George, et al. *Privacy and data protection by design-from policy to engineering*. arXiv preprint arXiv:1501.03726 (2015).

[87] Jeremy Barnett, and Philip Treleaven. *Algorithmic dispute resolution—The automation of professional dispute resolution using AI and blockchain technologies*. THE COMPUTER JOURNAL 61.3, 399-408 (2018).

[88] Gunawan Widjaja, et al. *UNCITRAL Model Law on Electronic Commerce and Model Law on Electronic Signatures*, CROSS-BORDER 1.1, 283-296 (2018).

international cooperation will remain paramount in unlocking the transformative potential of this technology for American global supply chains.

F. Recommendations for Private Companies and Policymakers

The burgeoning adoption of AI-enabled blockchain technology within American global supply chains necessitates a multifaceted approach to legal and regulatory frameworks. This section explores anticipated changes within these frameworks and outlines recommendations for navigating this evolving environment.

The unique characteristics of AI-enabled blockchain necessitate adjustments to existing legal frameworks. Three key areas likely to undergo significant transformations are data privacy and security, regulatory harmonization, and smart contract enforceability.[89] Regulations are expected to evolve to provide greater clarity on data ownership within these ecosystems, especially in the international context. This may involve establishing user consent mechanisms for data collection and utilization alongside robust data anonymization techniques to protect privacy. Additionally, we can expect the development of stringent cybersecurity standards and data breach notification requirements to ensure the security and integrity of data throughout the supply chain.[90]

New legal doctrines may also emerge to delineate liability within the complex networks of AI-enabled blockchain supply chains.[91] Striking a balance between fostering innovation and ensuring consumer safety will be crucial. When assigning responsibility for product defects, legal frameworks may consider factors like the role of algorithmic decision-making processes within the AI components of the blockchain system.

Finally, legal frameworks will likely need to address the enforceability of dispute resolution clauses embedded within smart contracts across jurisdictions.[92] This may involve establishing standardized legal frameworks for smart contracts, potentially leveraging international cooperation to foster recognition of their legal validity across borders. Such efforts will promote stability and predictability within the global supply chain ecosystem.

Effective international cooperation is paramount in fostering a harmonized legal landscape for AI-enabled blockchain technology.[93] Here, we recommend several key approaches. Regular dialogues between policymakers, industry leaders, legal scholars, and international organizations can serve as a powerful catalyst for crafting comprehensive regulatory frameworks. These dialogues should foster a collaborative

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[89] Georgios I. Zekos, and Georgios I. Zekos. *AI and legal issues*. Economics and Law of Artificial Intelligence: FINANCE, ECONOMIC IMPACTS, RISK MANAGEMENT AND GOVERNANCE 401-460 (2021).
[90] Agnes Clare Odimarha, et al. *Securing the digital supply chain: Cybersecurity best practices for logistics and shipping companies.* WORLD JOURNAL OF ADVANCED SCIENCE AND TECHNOLOGY 5.1, 026-033 (2024).
[91] Жамиля Панабергенова. *Fulfilling fiduciary duties in the ai era: emerging risks and responsibilities in ai-assisted corporate financial oversight*. ОБЩЕСТВО И ИННОВАЦИИ 5.2/S, 222-230 (2024).
[92] Riikka Koulu, *Blockchains and online dispute resolution: smart contracts as an alternative to enforcement*. *S*CRIPTed 13, 40 (2016).
[93] Amy Schmitz, and Colin Rule. *Online dispute resolution for smart contracts*. J. DISP. RESOL. 103 (2019).

environment where stakeholders can share best practices and lessons learned from early adopters. By harnessing the collective knowledge of diverse stakeholders, policymakers can develop regulations that are informed, effective, and adaptable to the evolving nature of AI-enabled blockchain technology.

Building upon existing international frameworks, such as the UNCITRAL Model Law on Electronic Commerce, can provide a robust foundation for future regulatory harmonization.[94] These established frameworks can be adapted to address the specificities of AI-enabled blockchain ecosystems, ensuring consistency and reducing regulatory burdens for businesses operating across borders. Furthermore, supporting the standardization efforts of organizations like ISO is crucial. Standardized terminology, security protocols, and interoperability standards for blockchain technology will facilitate seamless international trade and reduce regulatory uncertainty. By establishing a common language and technical infrastructure, these efforts can promote global collaboration and innovation within the blockchain space.

G. Future Research Directions

The burgeoning field of AI-enabled blockchain technology within global supply chains presents a compelling opportunity for further academic exploration. This section examines key areas for future research and explores anticipated developments in the technology itself alongside their potential legal implications.

Standardization and interoperability are crucial for fostering seamless information sharing and collaboration within complex AI-enabled blockchain supply chains.[95] Research into standardized protocols and data formats can address legal complexities surrounding data ownership and jurisdiction.[96] By enabling smooth data exchange across different platforms, these efforts can reduce friction and promote efficient supply chain management.

Developing frameworks for explainable AI within blockchain systems is another critical research area.[97] Understanding how AI algorithms make decisions within supply chains is essential for mitigating concerns about algorithmic bias and ensuring fair and ethical practices throughout the network. Research efforts should focus on making AI decision-making processes transparent and auditable.

The legal enforceability of smart contracts across jurisdictions remains an open question.[98] Further research is needed to develop standardized legal frameworks for smart contracts that provide clarity and certainty for businesses operating within AI-enabled blockchain supply chains. This will help establish a predictable legal environment and promote the widespread adoption of this technology.

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[94] Gerold Herrmann, *Establishing a legal framework for electronic commerce: the work of the United Nations Commission on International Trade Law (UNCITRAL)*. WORLD TRADE AND ARBITRATION MATERIALS 11.6 (1999).

[95] Shenle Pan, et al. *Digital interoperability in logistics and supply chain management: state-of-the-art and research avenues towards Physical Internet*. COMPUTERS IN INDUSTRY 128, 103435 (2021).

[96] *Id.*

[97] Prabhat Kumar, et al. *Blockchain and explainable AI for enhanced decision making in cyber threat detection*. Software: Practice and Experience (2024).

[98] Vimal Dwivedi, et al. *Legally enforceable smart-contract languages: A systematic literature review*. ACM COMPUTING SURVEYS (CSUR) 54.5, 1-34 (2021).

Quantum computing harnesses the principles of quantum mechanics to solve complex problems exponentially faster than classical computers,[99]posing both threats and opportunities for blockchain in global supply chains. On one hand, its immense computational power could potentially crack the cryptographic algorithms securing blockchain networks, compromising data integrity and trust[100]. On the other hand, quantum computing could enhance supply chain visibility and efficiency by optimizing complex logistics, predicting disruptions, and enabling new levels of automation.[101] However, realizing these benefits requires developing quantum-resistant cryptographic protocols and integrating quantum technologies seamlessly with existing blockchain infrastructure, presenting significant challenges for the industry.

Decentralized Autonomous Organizations (DAOs), self-governing organizations facilitated by blockchain technology, present intriguing possibilities for supply chain management.[102] Research into the legal and regulatory frameworks governing DAOs, particularly regarding decision-making processes and liability attribution, is necessary to navigate this nascent domain. A clear understanding of the legal landscape surrounding DAOs will be essential for their successful integration into supply chains.

The convergence of AI-enabled blockchain with the Internet of Things (IoT) has the potential to revolutionize data collection and real-time monitoring within supply chains.[103] However, the vast amount of data generated by IoT devices raises new challenges concerning data privacy, security, and ownership.[104] Legal frameworks will need to adapt to address these complexities and ensure responsible data management practices. Research efforts should explore how to balance the benefits of real-time data collection with the need to protect consumer privacy and data security.

By actively pursuing these research avenues and anticipating future technological advancements, stakeholders can stay ahead of the curve and ensure that the legal landscape surrounding AI-enabled blockchain technology evolves alongside the technology itself. This proactive approach can pave the way for a future where this transformative technology facilitates secure, efficient, and ethical global supply chains.

CONCLUSION

AI-enabled blockchain technology presents a transformative opportunity to revolutionize how goods are sourced, tracked, and delivered across the globe. This technology has the potential to foster a more secure, efficient, and ethical trade

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[99] David Deutsch. *Quantum computation*. PHYSICS WORLD 5.6, 57 (1992).
[100] Noah Kappert, et al. *Quantum Computing-The Impending End for the Blockchain?*. PACIS. 2021.
[101] Eleanor Rieffel and Wolfgang Polak. *An introduction to quantum computing for non-physicists*. ACM COMPUTING SURVEYS (CSUR) 32.3, 300-335 (2000).
[102] Kyung Taeck Minn, *Towards enhanced oversight of" self-governing" decentralized autonomous organizations: case study of the DAO and its shortcomings*. NYU J. INTELL. PROP. & ENT. L. 9, 139 (2019).
[103] Sushil Kumar Singh, et al. *Blockiotintelligence: A blockchain-enabled intelligent IoT architecture with artificial intelligence.* FUTURE GENERATION COMPUTER SYSTEMS 110, 721-743 (2020).
[104] Brian Parker, and Christian Bach. *The synthesis of blockchain, artificial intelligence and internet of things*. EUROPEAN JOURNAL OF ENGINEERING AND TECHNOLOGY RESEARCH 5.5, 588-593 (2020).

ecosystem, but unlocking its full potential hinges on overcoming a critical challenge: the need for international harmonization.[105]

The complex nature of global supply chains, with their interconnected networks spanning diverse jurisdictions, presents an intricate web of legal considerations. Data privacy concerns necessitate a nuanced approach that safeguards consumer information across international borders. Assigning clear liability for product defects and ensuring the enforceability of smart contract dispute resolution mechanisms require novel legal solutions with international applicability. The nascent character of this technology underscores the urgent need to develop legal doctrines and frameworks specifically tailored to the unique characteristics of AI-enabled blockchain ecosystems. These frameworks must be established through a collaborative effort among stakeholders from all corners of the global marketplace.

Despite the challenges, the potential benefits of international harmonization in the context of AI-enabled blockchain are substantial. By fostering collaboration and establishing consistent legal principles across jurisdictions, we can unlock a future where this technology enhances transparency and traceability throughout the entire supply chain. This, in turn, can lead to improved product safety, streamlined logistics, and a more sustainable trade environment. AI algorithms can optimize operations, reduce waste, and generate valuable data for informed decision-making by all stakeholders involved. Increased transparency empowers consumers to make informed choices, while improved traceability facilitates swift product recalls and combats counterfeiting. Streamlined logistics and optimized operations can lead to cost reductions and improved efficiency for businesses across the global supply chain.

In conclusion, the long-term success of AI-enabled blockchain hinges on a commitment to international cooperation. Policymakers, industry leaders, legal scholars, and international organizations must work together to develop robust and adaptable regulatory frameworks that ensure data privacy, consumer protection, and fair competition within the global marketplace. By prioritizing the development of harmonized international legal solutions, we can mitigate legal complexities and harness the transformative potential of this technology. This collaborative approach will pave the way for a more secure, efficient, and ethical global supply chain for the future. The future rests on our collective ability to embrace responsible innovation within a framework of international cooperation, fairness, transparency, and good governance.

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[105] R. Sivarethinamohan, et al., *Unlocking the potential of (AI-powered) blockchain technology in environment sustainability and social good*. APPLIED EDGE AI. Auerbach Publications, 193-213. (2022).

POPULAR MEDIA AND PROFITABLE MICROFINANCE IN INDIA

Elizabeth Tharakan*

Abstract: Microfinance is a mechanism of providing financial assistance to those who cannot access traditional banking because they are too poor. The assistance is in the form of small loans of an average size around $200. Available data indicates that there are close to 3,500 microfinance institutions (MFIs) reaching out to 130 million clients. The worldwide majority of MFIs target women as their main clients. Most of them are able to maintain a high loan repayment rate of 95-100 per cent, creating a buzz in popular media like the Wall Street Journal with companies like Kiva Loans. This paper explores the extent to which favorable media coverage of microfinance affects the profits of MFIs in the context of India, one of the largest microfinance markets globally. With any sudden turn of events – any untoward incident - that makes media coverage of microfinance unfavorable, the flow of international investments to MFIs would decline consequently reducing their financial profitability. We examined the effect of one such "untoward incident," the Andhra Pradesh (AP) microfinance crisis of 2010, which turned some coverage for microfinance hostile. We chose this crisis because it occurred after the honeymoon period when the Grameen Bank and Muhammad Yunus won the 2006 Nobel Peace Prize, when a flurry of bad press about microfinance started appearing in international media. Thus, this crisis marks a natural break in favorability of media coverage. Feminist policies encouraged by development economists throughout academic institutions and universities recommend making loans to women because women are likely to use their money responsibly by investing in their businesses and feeding their families rather than wasting their money on alcohol and tobacco. This unwavering faith in women is essentially feminism. We can define feminist policies as those rules, incentives, and regulations that encourage women to be financially literate and financially independent of their families and spouses, which can often lead to a better economy. These feminist policies represent a change for Indian society, which is composed generally of patriarchal economic systems where men are heads of their households and breadwinners. In this paper, we employ a natural experiment design based on a first difference analysis to analyze change in profitability of microfinance institutions in India due to the crisis in AP that resulted in media coverage of microfinance turning unfavorable. Since these effects could vary depending on the ideology of the media outlets, we chose to include multiple newspapers of different political ideologies published from within India and outside in order to examine the relationship between media coverage of microfinance and profitability of the institution. Ultimately, we found that media coverage of microfinance did not impact profitability of microfinance institutions, which surprised us because we thought that feminist policies would drive global recognition and investment. This surprise stems from the fact that microfinance investors are generally banks, not the global public.

Keywords: Microfinance; Economics; Development; Global South; Bank

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INTRODUCTION

Microfinance is a mechanism of providing financial assistance to those who cannot access traditional banking because they are too poor. The assistance is in the form of small loans of an average size around $200.[1] Available data indicates that there are close to 3,500 microfinance institutions (MFIs) reaching out to 130 million clients. The worldwide majority of MFIs target women as their main clients. Most of them are able to maintain a high loan repayment rate of 95-100 per cent, creating a buzz in popular media like the Wall Street Journal.[2] "Practitioners believe that women tend to be more risk averse in their choice of investment projects, more fearful of social sanctions, and less mobile (and therefore easier to monitor) than men—making it easier for MFIs to ensure a higher rate of repayment."[3]

This paper explores the extent to which favorable media coverage of microfinance affects the profits of MFIs in the context of India, one of the largest microfinance markets globally. Specifically, we hypothesize that media reports and articles about how microfinance works for the poor women in India significantly impacts the global investment policies (relating to equity, loans and grants) by inspiring sympathetic audiences of reputed media outlets to invest in MFIs. This in turn enhances the profitability of microfinance business. Several enquiries have revealed that microfinance has indeed emerged as a favorite sector for foreign investors.[4] If this hypothesis is valid, then any sudden turn of events – any untoward incident - that makes media coverage of microfinance unfavorable, flow of international investments to MFIs would decline consequently reducing their financial profitability. We examined the effect of one such "untoward incident," the Andhra Pradesh (AP) microfinance crisis of 2010, which turned some coverage for microfinance hostile. We chose this crisis because it occurred after the honeymoon period when the Grameen Bank and Muhammad Yunus won the 2006 Nobel Peace Prize, when a flurry of bad press about microfinance started appearing in international media. Thus, this crisis marks a natural break in favorability of media coverage.

"Practitioners believe that women tend to be more risk-averse in their choice of investment projects, more fearful of social sanctions, and less mobile (and therefore easier to monitor) than men – making it easier for MFIs to ensure a higher rate of repayment."[5] Feminist policies encouraged by development economists throughout academic institutions and universities recommend making loans to women because women are likely to use their money responsibly by investing in their businesses and feeding their families rather than wasting their money on alcohol and tobacco. This unwavering faith in women is essentially feminism. We can define feminist policies as those rules, incentives, and regulations that encourage women to be financially literate and financially independent of their families and spouses, which can often lead to a better economy. These feminist policies represent a change for Indian society, which is

[1] Sa-Dhan, The Bharat Microfinance Report 2015-16, New Delhi (2015).
[2] R. Sengupta., & C.P. Aubuchon, The microfinance revolution: An overview. *Review-Federal Reserve Bank of Saint Louis*, *90*(1), 9 (2008).
[3] Sengupta and Aubuchon, 2008, p. 24.
[4] Tara Nair & A. Tankha, Inclusive Finance India Report 2014 (2014).
[5] R. Sengupta & C.P. Aubuchon, 24 (2008).

composed generally of patriarchal economic systems where men are heads of their households and breadwinners.

In this paper, we employ a natural experiment design based on a first difference analysis to analyze change in profitability of microfinance institutions in India due to the crisis in AP that resulted in media coverage of microfinance turning unfavorable. Since these effects could vary depending on the ideology of the media outlets, we chose to include multiple newspapers of different political ideologies published from within India and outside in order to examine the relationship between media coverage of microfinance and profitability of the institution. Ultimately, we found that media coverage of microfinance did not impact profitability of microfinance institutions, which surprised us because we thought that feminist policies would drive global recognition and investment. This surprise stems from the fact that microfinance investors are generally banks, not the global public.

I. THEORY

In order to shape the research question theoretically, we draw on framing and agenda setting, two theories of media effects that apply here. We then integrate these with the literature on microfinance and on the Andhra Pradesh crisis to elucidate the specific hypothesis.

Mody argues that news has the power to be a 'cross-national public educator.'[6] Her analysis of the conflict in Darfur also suggests that in addition to violent, dramatic coverage of conflicts, inclusion of potential solutions to a conflict may be commonly framed as political issues.[7] She discovered that the two American newspapers she analyzed (The New York Times and The Washington Post) focused on solutions less than European newspapers and that the amount of coverage was still quite high (56% of Times articles, 68% of Post articles).[8] She also found frames divided into global, national and local frames. Global frames discussed international organizations fighting the problem of hunger, including the United Nations, the World Bank and NGOs.[9] National frames explained how the U.S. would play a role in the problem or solution.[10] Local frames gave audiences information on how they could engage with the topic of hunger in Africa, such as food drives or races or other fundraisers.[11] In local stories about hunger, Kogen found that hunger was most frequently "framed as a problem with local solutions, affecting citizens of the local community, and to be addressed by the local community."[12]

> Witnessing remote suffering on television, we are thus especially moved by pictures of children, women and elderly victims. A child is, however, the most ideal victim in the perspective of compassion."[13] In using episodic

[6] L. Kogen, Not up for debate: US news coverage of hunger in Africa, International Communication Gazette (2014).
[7] *Id*.
[8] *Id*.
[9] *Id*. at 16.
[10] *Id*.
[11] *Id*.
[12] *Id*.
[13] Hoijer, 2004, p. 522 in L. McCarty Framing Famine: An Analysis of US Media Coverage of the 2011 Famine in the Horn of Africa (2013).

> frames (meaning particular cases of TV news reporting), rather than themes, research shows news articles that profile a smaller number of humanitarian disaster victims tend to generate more support than larger numbers.[14]

McCarty employed a content analysis of articles about hunger relief in the Horn of Africa.[15] Since there were very few articles in her data set, she drew fewer conclusions about framing than about the media's agenda-setting function to make global poverty relevant.[16]

Thus, when stories about global poverty are framed in a particular way, they have the capacity to set the public agenda by eliciting public sympathy. Similarly, when stories about microfinance are framed in a particular way about women lifting themselves from poverty, we argue that they have the capacity to set the public agenda by drawing out compassion from the global audience. Who composes the audience? Surprisingly, most donors to MFIs in South Asia are not individuals but are rather financial institutions. In 2010, development funding from financial institutions was $2.36 billion in India, where legislation requires financial institutions like banks to invest in "priority sectors" like microfinance (Gaul, 2010, no page numbers). Further, the impact of agenda-setting and framing using the science of compassion has been studied extensively by psychologists as this quote summarizing psychologist Paul Slovic's work illustrates.

> There were experiments where people were shown a photo of a starving girl from Mali called Rokia, a seven-year-old girl, and asked to contribute in various scenarios. And then also a boy named Moussa. And essentially people would donate a lot of money. If they saw that Rokia was hungry, they wanted to help her. Likewise, when they saw a picture of Moussa, they wanted to help him. But the moment you put the two of them together and asked people to help both Rokia and Moussa, then at that point donations dropped. And by the time you ask them to donate to 21 million hungry people in West Africa, you know, nobody wanted to contribute at all."[17]

This paper draws on theories of agenda-setting (media coverage making it important to contribute to reduction in global poverty in the developing world in the eyes of the public) and framing (positive frames such as making microfinance seem like either a worthwhile way of helping poor women in South Asia or negative frames such as an exploitative form of loan sharking) to examine the media coverage of microfinance. The premise is that once the media sets the agenda for microfinance (by covering it extensively), the framing by each type of media correlates with fund flows to MFIs, consequently affecting their profitability. Before motivating the hypothesis, what follows is a brief review of microfinance with an eye on its media coverage along with an introduction to the specific empirical context, the Andhra Pradesh crisis upon which this study draws.

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[14] McCarty 19 (2013).
[15] *Id*.
[16] *Id*.
[17] Krista Tippett On Being: Nicholas Kristof, Journalism and Compassion http://www.onbeing.org/program/transcript/1914.

A. Media Coverage of Microfinance

Two events significantly impacted the way the media represented microfinance. The first was in 2005, when the UN nominated the year the 'International Year of Microcredit.' Then, in 2006, Dr. Muhammad Yunus and the Grameen Bank jointly won the Nobel Peace Prize.[18] For instance, on August 23, 2009, in an article by Nicholas Kristof and Sheryl WuDunn, "The Women's Crusade," a destitute Pakistani woman takes out a $65 MFI loan to buy beads and fabric to sell embroidery to city merchants. With the money she earns, she can pay off loans, educate her daughters, renovate her house, employ her neighbors, and keep borrowing.[19] Such coverage of microfinance in South Asia became less favorable after a series of events in 2010, often termed as the Andhra Pradesh crisis, which we next describe.

B. The Andhra Pradesh Crisis and Coverage of Microfinance

Generally, local media (Indian media) and global media (Western media that have worldwide coverage) both cover (farmer) suicides that occur after a cycle of drought or poor harvest. In Fall 2010, in one such cycle, some of the approximately 200 people who committed suicide in Andhra Pradesh, a southern province of India, were indebted customers of MFIs. These were people who couldn't afford to repay their loans, were subject to aggressive lending and unforgivingly high-handed methods of dues collection. This was the Andhra Pradesh crisis of 2010. The state decision to legislate against MFIs and the media's bad press composed the response to the Andhra Pradesh crisis:

> The state government came up with the Andhra Pradesh Microfinance Institutions (Regulation of Money Lending) Ordinance, 2010, that tightly restricts the freedom of operation of the MFIs in the state. The ordi¬nance, among other things, requires MFIs to register themselves, and prevents lend¬ing in cases where loans are already out¬standing. It allows for only monthly repay¬ments and demands the display of interest rates charged by the MFIs. Even as the Reserve Bank of India (RBI) constituted a committee to look into issues relating to MFIs, the Andhra Pradesh assembly rati¬fied the ordinance on 15 December, thus, paving the way for a new law governing the functioning of MFIs in the state.[20]

This state and media response was swift, controlled and sharp, rather than being cyclical, so it can be considered exogenous to the microfinance industry. Though the farmers' suicides due to indebtedness were endogenously related to the Andhra Pradesh crisis, the state and media response itself was exogenous. One story illustrates how suicides link to microfinance indebtedness.

> Lalitha Nursilmula was a cheerful sixteen-year-old girl, who could often be found singing along to popular Bollywood tunes on her way to class. She

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[18] Arjun Bisen, Bronwell Dalton, & Rachel Wilson. The Social Construction of the Microfinance Industry: a comparison of donor and recipient perspectives. *Cosmopolitan Civil Societies: An Interdisciplinary Journal*, *4*(2), 65 (2012).

[19] B. Payne and G. Skinner, Regulation: interest rate caps and concept of usury. *Selected Works of Gray L. Skinner [website]< http://works. bepress. com/gray_skinner/1>[accessed 25 November 2013]*. (2010).

[20] Tara Nair, p. 23 (2011).

> was also bright and determined, focusing on studying commerce and economics at a local college in Godhumagudu. One day, while she was home alone, an employee of a microfinance company came to her village and asked her to travel to the community office where he could ask her a few questions. Once they arrived, the agent, the village head, and four members of the family's 'joint liability group" (villagers that had assumed collective responsibility for the debt) cornered Lalitha and demanded payment on an outstanding loan of 66,000 rupees that her family had borrowed to pay for the wedding of their elder daughter."[21]

Lalitha's family could not afford to pay. The loan sharks encouraged her to prostitute herself.

> Before taking her own life, Lalitha left a note imploring her parents to not take out any more loans, except to invest in the education of their younger son. Lalitha's suicide was one of many tragedies that swept over rural villages in Southern India this past year. At least seventy-five people facing pressure to repay loans to microfinance firms, have committed suicide in the fall of 2010 in the state of Andhra Pradesh. These suicides are generally linked to the deep shame that Indians feel towards failing to repay debt."[22]

This study explores favorable (or negative) global and local media coverage of microfinance immediately following this crisis with a content analysis. Presumably a shift in the slant of either global or local media coverage following the crisis could affect monetary flows from donors to MFIs.

C. Media Coverage after the 2010 Andhra Pradesh Crisis

After the Andhra Pradesh Crisis, microfinance has gone from being praised to being criticized as a means of exploiting the poorest of the poor.[23] Many recent empirical studies have found that there is no strong evidence of net income gains for borrowers through this process.[24] Indeed, given the nature of the loans (small amounts given for short durations at very high interest rates), this is scarcely surprising.[25] Banerjee et al. (2010) found, on the basis of a randomized controlled trial of households in Hyderabad, India, that existing business owners appeared to use microcredit to expand their businesses, while (poorer) households with low predicted propensity to start a business increased their spending on non-durable items, particularly food.[26] The study found 'no discernible effect on education, health, or women's empowerment.'[27]

Concurrent with the Andhra Pradesh crisis, Nobel Laureate Muhammad Yunus and the Grameen Bank received bad press around 2010-11 when Bangladeshi Prime Minister Sheikh Hasina put Yunus on trial twice for receiving earnings without

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[21] David Solan, How Consumer Bankruptcy Reforms Can Help Save Microfinance in India. *Or. Rev. Int'l L.*, *13*, 317 (2011).
[22] *Id*. at 317.
[23] Jayati Ghosh. x Microfinance and the challenge of financial inclusion for development. *Cambridge journal of economics* (January 26 2011).
[24] *Id*.
[25] *Id*.
[26] *Id*.
[27] *Id*.

governmental permission. Hasina also removed Yunus from the Grameen Bank for the crime of heading the bank at age 70, ten years past the mandatory retirement age of 60. A December 2010 Norwegian television documentary alleged that Yunus transferred Norwegian development funds from the Grameen Bank to another venture without prior approval in 1996. Yunus also faced a defamation trial against a local Bangladeshi politician when he said that politicians were only motivated by money.

We'd like to clarify that this episode regarding Yunus took place in Bangladesh and they aren't directly related to the Indian microfinance crisis. The Andhra Pradesh crisis occurred in south India while a comparable crisis occurred in Bangladesh around the same time. We only examine the coverage of microfinance in the Indian media (The Hindu and The Times of India) and global media. Therefore, our study focuses on the Andhra Pradesh crisis, but it also captures portrayals of Yunus and microfinance in Indian media along with global media, but does not examine the press in Bangladesh.

A Times of India article defends Yunus as a "target for name-calling, accusations and expulsion from the Grameen Bank."[28] An article in The Hindu entitled "Small loans add up to lethal debts" says the following about SKS Microfinance.

> Both reports said SKS employees had verbally harassed over-indebted borrowers, forced them to pawn valuable items, incited other borrowers to humiliate them and orchestrated sit-ins outside their homes to publicly shame them. In some cases, SKS staff physically harassed defaulters, according to the report commissioned by the company. Only in death would the debts be forgiven."[29]

The article goes on to describe the following: "Another SKS debt collector told a delinquent borrower to drown herself in a pond if she wanted her loan waived. The next day, she did. She left behind four children."[30] In this way, we can see that local Indian media criticizes microfinance after the Andhra Pradesh crisis.

The global media took a clear, supportive stance toward Yunus. An example of the global media defending Yunus comes in a 2011 Tom Cropper article in The Guardian, in which Cropper describes the attacks against Yunus:

While the spectacle of the rich making money from the poorest people in the world may seem unpalatable, this shouldn't detract from the significant good that can be achieved. The success of SKS attracted significant capital flows into the sector. While predominantly profit-seeking, this has the potential to greatly enhance the sector's capacity to help the poor."[31]

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[28] R. Bari. "The never-ending trial of Muhammad Yunus." *The Times of India.* (Sept. 2013) timesofindia.indiatimes.com/nri/citizen-journalists/citizen-journalists-reports/rashidul-bari/The-never-ending-trial-of-Muhammad-Yunus/articleshow/22757491.cms.

[29] Erika Kinetz. "Small loans add up to lethal debts." The *Hindu*. (February 26 2012) http://www.thehindu.com/todays-paper/small-loans-add-up-to-lethal-debts/article2933867.ecehttp://www.thehindu.com/todays-paper/small-loans-add-up-to-lethal-debts/article2933867.ece.

[30] *Id*.

[31] Tom Cropper. "Microfinance and the fallout from the Muhammad Yunus case." *The Guardian*. (January 26 2011). http://www.theguardian.com/social-enterprise-network/2011/jan/26/microfinance-and-the-muhammad-yunus-case.

Cropper's article takes sides about whether microfinance is good or bad, revealing a bias in favor of the Grameen Bank and Yunus.

The theories of framing and agenda-setting and the microfinance debate connect when we explore questions of how media coverage of microfinance sets the public agenda – or how favorably framed media coverage motivates the audience to donate to microfinance institutions. A "positive frame" is a favorable portrayal of microfinance; a "negative frame" is bad press after the microfinance debate. When Cropper defended Muhammad Yunus, the Grameen Bank and microfinance itself in international media (The Guardian), this was a positive frame. Framing shifts from positive to negative in the global and local Indian media after the Andhra Pradesh crisis. The question of the impact of this shift in framing is the one this thesis explored.

Specifically, we posed the following hypothesis.

H1: The change in the tone of media coverage (from positive to negative) in global and local media coverage of microfinance, post the Andhra Pradesh crisis, has had an adverse impact on the profitability of microfinance institutions in India over time.

II. METHOD

We considered the change in media coverage in global and local Indian media from Jan. 2006-Dec. 2012, changes that the Andhra Pradesh crisis motivated, as an exogenous discontinuity. The state and media response to the crisis was an external shock to the microfinance industry and not related to the suicides in a cyclical way, therefore we design this study as a regression discontinuity where we used the first difference analysis framework.

A natural experiment happens when an unexpected event or external reason assigns participants randomly to potential treatment or control group.[32] In this experiment, the Andhra Pradesh crisis is the cut-point. Our data falls in pre-crisis and post-crisis periods, based on a systematic content analysis of the media coverage. The first category (pre-crisis period) is 2009-2010 and the second category (as the post-crisis period) is 2011-2012. The forcing variable is favorability of coverage over time (2009-2012). The 2006-2010 pre-crisis period based on the fact that there was originally favorable coverage after Yunus won the Nobel Peace Prize in 2006 (jointly with the Grameen Bank) and microfinance experienced a honeymoon period. It must be noted that our experiment's first difference model does not separate out the effects of time moving and inflation.

This is a "natural experiment" or an "interrupted time-series analysis" but it is also a regression discontinuity.[33] First we established the Andhra Pradesh crisis as a discontinuity through a formal content analysis.

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[32] Richard J. Murnane, John B. Willett. "Methods matter: improving causal inference in educational and social science research." Oxford; New York: Oxford University Press, 135-136 (January 26 2011).
[33] *Id*.

A. Analysis of Media Coverage

We examined coverage in six publications. These are The Hindu, The Times of India, The Economist, The New York Times, Financial Times and The Guardian. We chose these publications because they are reputed global and local media outlets that reflect public sentiment in India and in the world, and cover some range on the ideological spectrum. Table 1 and Table 2 respectively report the proportion of unfavorable coverage summarized as pre and post crisis, and annually. The content analysis shows that our choice of cut-point was accurate because the coverage of microfinance in both global and Indian media turned unfavorable after the AP Crisis. An article was deemed "favorable" with a holistic read of whether it described microfinance with positive words such as "eliminating poverty" and deemed unfavorable if microfinance was characterized as a "debt trap."

B. Data on MFIs

We obtained publicly available data from the Microfinance Information Exchange. MIX is a D.C.-based information exchange built to promote microfinance data. MIX produces a global annual dataset providing financial data on individual MFI's worldwide. MIX collects financial and operational data from MFIs using original source documents. These include audited financial statements, supported by additional questionnaires when necessary. Data collection is based on microfinance industry reporting standards under the rules of International Financial Reporting Standards.

The MIX historical dataset uses data from audits, internal financial statements, management reports or other documents. "MIX analysts and partners enter all data into the database; all data is reviewed by MIX staff and validated against a set of business rules before publication. All data submitted to MIX is submitted on a voluntary basis so if you find data is missing on an MFI's profile, it means the institution did not submit that data to MIX or the institution is no longer in operation," the FAQ section of MIXMarket.org's website says.

To ensure the accuracy of submitted data, MIX's database review system conducts more than 135 quality checks. Users can view and download source documents directly from MIX Market to perform their own validation of the data entered by MIX.

C. Analysis

Media coverage followed time in that as time progressed past the "pre-crisis" period of 2006-2010 to the "post-crisis" period of 2011-2012, media coverage became more unfavorable in light of the crisis.

We used Ordinary Least Squares (OLS) simple regression to test the hypothesis that time was directly, positively correlated with profitability measures of gross loan portfolio. We modeled time (in the form of a 0-1 dummy variable known as "PreCrisis") against log (gross loan portfolio). We used logs rather than the actual dependent variable for GLP because the skewness distribution showed a right-skew, and logarithmic transformation is a commonly used technique to symmetrize such distributions.

The control variables were: age (a dummy variable where we signified "mature" and 0 signified "new" or "other"), number of active clients and average loan balance per borrower. They all had high n values (a high enough number of cases) to serve as controls. Loan balance pertains more to the quirks of individual MFIs than to how media coverage impacts profitability. Age is in the model because the older and more established a fund, the more profitable it might be in ways that have nothing to do with media coverage. Finally, number of active clients impacts MFI profitability but has nothing to do with media coverage, and so it should be isolated. Ultimately, our control variables are supposed to account for variations in MFI profitability that are separate from media coverage, and to hold these variations constant to incorporate omitted variable bias, to isolate the impact of favorable media coverage on gross loan portfolio, profit margin and return on equity, all measures of MFI profitability.

III. RESULTS

Our dependent variables were all not normally distributed. Table 3 where we report each variable's descriptive statistics reveals these skews.

Table 3

Means, standard deviation and skewness of independent, control and dependent variables, N=303.

	N	Mean	Standard Dev.	Skewness	Error
	380	.65	.48	-.64	.125
Gross Loan Portfolio	371	54408266.84	132822655.45	4.25	.127
Log(GLP)	371	6.95	.92	-.41	.127
Average loan balance per borrower	358	483.44	6202.12	18.91	.129
Return on equity	312	82.94%	1573.53%	17.49	.138
Number of active borrowers	363	349183.25	823137.28	4.17	.128
Age(Dummy)	380	.44	.50	.22	.125
Profit margin	343	-28.09%	280.23%	-10.12	.132
Valid N (listwise)	*303*				

There may be an omitted variable bias here because companies that went bust may not have reported their data to MIX, and thus the correlation may have been even more negative than the negative correlation that we found. But even if there is an omitted variable bias, complete data for the top ten Indian MFI's (which compose 85% of the microfinance industry) was included and so the bias could not be overwhelming. The Indian economy doubled from approximately $900 billion to $1800 billion between 2006 and 2012, and so this omitted variable bias seems less potent because

MFIs were still growing rather than going bust (while MFIs going bust would have led to omitted post-crisis data).

Table 4

Mean values of profitability measures before and after AP Crisis, N=419.

	Mean	(Std. Deviation)
Log(GLP)	6.95	(.92)
Log(GLP)	7.06	(.86)

Note: PreCrisisN=306, PostCrisisN=113.

This drastic change in N occurred because many MFI's listed their pre-crisis financials and not their post-crisis financials, as MIX data is self-reported.

Table 5

Regression of log (Gross loan portfolio) against PreCrisis, N=371.

		Unstandardized Coefficients			Sig.
Model		B	Std. Error	t	
1	(Constant)	6.738	.069	97.523	.000
	PreCrisis	-.174	.077	-2.270	.024
	Average loan balance per borrower	-8.540E-6	.000	-1.444	.150
	Number of active borrowers	6.085E-7	.000	13.169	.000
	Age (Dummy)	.330	.077	4.283	.000

R^2 = .418, p< .001. *N=371*

Log (GLP) predicted = 6.74 – .17 (precrisis) + .33 (age dummy), where loan balance and number of active borrowers have negligible correlation coefficients.

This equation details the associations between precrisis and log (gross loan portfolio), when other factors are held constant. Given that the dependent variable is logged (to base 10), the coefficient must be adjusted for using its antilog (that is raising it to power 10). The adjusted coefficient in this case (instead of a difference between predicted arithmetic means) is the ratio of the geometric means. In our model, the beta for precrisis is -.174, which when adjusted as 10^(-.174) = 0.67. This leads to the interpretation that for a unit change in precrisis, the ratio of the geometric means of the two predicted values of GLP would be 0.67 or 67%. In other words, our model demonstrates that GLP would be 33% less during the precrisis period (when the dummy variable precrisis =1) than GLP would be during the post crisis period (when the value of the dummy variable "PreCrisis" is '0').

The study set out to find whether favorability of media coverage after India's 2010 Andhra Pradesh crisis affected profitability of microfinance institutions in India,

as measured by gross loan portfolio regressed against time. We found that unfavorable popular media coverage was correlated with microfinance institution profitability increasing by 33% after the AP crisis.

The results refute our hypothesis that favorability of media coverage correlates over time with profitability, where profitability is measured by gross loan portfolio. The fact that log (gross loan portfolio) is negatively correlated with the dummy variable precrisis is the most important, because log(GLP) is our focus variable. This means that as coverage became more unfavorable after the crisis, log (gross loan portfolio) went UP for Indian MFIs and actual GLP went up by 33%.

IV. DISCUSSION

This analysis refutes our hypothesis on gross loan portfolio, the dependent variable of interest, in that we expected and hypothesized that gross loan portfolio would fall as media coverage became less favorable. Gross loan portfolio rose rather than fell, while log(GLP) rose as media coverage became less favorable. The results disprove our directional hypothesis that favorability of media coverage correlates over time with profitability, where profitability is measured by log(GLP).

An interesting conclusion this study can draw is that popular media coverage does not influence fund flows into microfinance institutions. Why is this interesting? A favorable perception of microfinance among stakeholders is reflected in favorable media coverage of microfinance, and vice versa. After the Andhra Pradesh crisis, unfavorable media coverage reflected an unfavorable perception of microfinance – but this was not enough to change fund flows among the public intellectual and investor stakeholders. Essentially, what the global public thinks is not especially relevant to the bank investors that drive microfinancing. Feminist policies that encourage banks to lend money to women work as long as women pay back their debts to the banks.

One explanation for this finding is that there was not sufficient media coverage to make a difference in fund flows. For example, there were only 5 articles about microfinance before the AP crisis and 10 articles after the crisis in The Hindu. Although the Indian media market has thousands of publications, The Hindu and Times of India may or may not serve as representative samples of the Indian market. If they are representative, then maybe there isn't enough coverage of microfinance at all. If these publications aren't representative of the Indian media market, then perhaps there do not exist one or two publications that are representative samples.

Another explanation is that microfinance grew with the Indian economy. In 2006, India's GDP was $949 billion; in 2007, it was $1239 billion; in 2008, it was $1224 billion; in 2009, it was $1365 billion; in 2010, it was $1709 billion; in 2011, it was $1836 billion; in 2012, India's GDP was $1832 billion. These GDP changes show that the economy grew almost 100% from the beginning of the pre-crisis period to the end of the post-crisis period. An inference is that the crisis did hurt growth in the industry, but did not eliminate or reverse growth. A related inference is that the MFIs could have grown even more but for the crisis. The Indian economy's growth reflected its investments in women and that is essentially a feminist message and a victory for the status of women in developing countries, especially in the Global South. Government rules and regulations that encourage microfinance encourage economic growth in India.

Yet another possibility is that the government's response to the Andhra Pradesh crisis effectively contained it. Andhra Pradesh's chief minister passed "An Ordinance

to protect the women Self Help Groups from exploitation by the Micro Finance Institutions in the State of Andhra Pradesh," which sought to place a range of new conditions on MFIs, including district-by-district registration, requirements to make collections near local government premises, a shift to monthly repayment schedules, and other measures that affect how MFIs operate. Because the Indian government contained the crisis, it did not spread to other states. Thus, the whole microfinance industry countrywide (25% of which Andhra Pradesh composed) did not shrink with the regulations.

An alternative understanding is that re-examining the literature in light of the results make it clear that MFI donors are sophisticated investors, who may read niche and trade publications on finance, rather than ordinary consumers of the popular media who are easily swayed by a feel-good story. We discover something surprising about the Indian microfinance industry and its dependence on foreign investment: "Unlike much of the world, lending to Indian MFIs is almost entirely local. International investors play little to no direct role in the sector, where less than 3 percent of funds are from foreign sources. The reliance on local funding is the combined result of regulations that prohibit foreign investment and subsidize local investment: priority-sector lending requirements encourage commercial banks to finance Indian MFIs and legislation prohibits foreign investment" (Sapundhieva, 2011, no page numbers). In fact, microfinance investors are local Indian banks three quarters of the time (Sapundhieva, 2011, no page numbers). This careful rereading of the MIX website and microfinance literature explains why unfavorable international media coverage of microfinance did not deter growth in the microfinance industry: foreign investment is prohibited and local investors are institutions rather than individuals. Even when India gets a bad reputation in global media, like during the Andhra Pradesh crisis, its domestic investments are strong at home and policies promoting female empowerment prevail.

This study contributes to our understanding of the mechanisms of microfinance investment, specifically as to who is investing in microfinance organizations and what media they read. Microfinance donors do not rely heavily on reading The New York Times, The Guardian, The Financial Times, The Economist, The Hindu or The Times of India. If these donors relied on the popular media, MFI profitability would drop over time, which it did not.

Another factor to consider is that casual readers of the six reputable publications are not most lenders but rather sophisticated investors and business decision makers were the primary lenders. "The lion's share of donors/investors to MFI's seem to be agencies and banks and foreign governments even rather than individual foreign investors." [34] Perhaps governments, agencies and banks are less responsive to favorability of media coverage and more responsive to their own prior course of dealing with an MFI and the actual loan repayment rates/data of the MFI. Our hypothesis did not encapsulate the corporate structure of microfinance entities. That may be why unfavorable media coverage of microfinance did not deter profitability in the microfinance industry.

Yet another plausible reason for the observation that microfinance as an industry grew in 2011 and 2012 is that data reporting became more streamlined through MIX. There was a 19% growth rate of gross loan portfolio from 2011-2012 to 2012-2013.[35] Even if coverage was less favorable post-AP crisis, the decrease in favorability of coverage was offset in some way by growth of MFIs as a whole. Specifically, this

[34] Tara Nair, Financing of Indian Microfinance: Evidence and Implications, *Economic& Political Weekly*, *47*(25), 33-40 (2012).

[35] Tara Nair, Microfinance: Lessons from a Crisis, *Economic & Political Weekly*, *XLVI(6)*, 23-2.

means that the AP crisis did not spread to other states and markets in the country in systemic fashion. Investors still had confidence in the microfinance market and its growth potential overall, because regulatory efforts in the sector restored investor confidence.

CONCLUSION

This study contributes to the conversation surrounding the value scholars attribute to framing and agenda-setting. According to the literature by Baum and Potter (2008) and Zhang and Meadows (2012), framing and agenda-setting are devices used to analyze the impact of media coverage on public policy and in other fields. Though feminist policies in India garner global acclaim, that prominence of microfinance does not automatically translate to greater investment in microfinance. Ultimately, changing a worldwide audience's perspective does not immediately ove direct investors of microfinance institutions because they are largely out to make a profit rather than gain goodwill. This study's findings help the community of scholars understand the limitations of framing and agenda-setting models in depicting the abilities of the popular media. Future research could address whether the Indian and international niche and trade media have more framing and agenda-setting power over MFI investors than popular media do.

Ultimately, the poet David Whyte could have predicted the findings of this study when in "Loaves and Fishes" he said,

> "This is not the age of information.
> This is not the age of information.
> Forget the news, and the radio, and the blurred screen.
> This is the time of loaves and fishes.
> People are hungry, and one good word is bread for a thousand."

Where sophisticated, humanitarian microfinance investors are willing to give "bread for a thousand" to the poor in India despite unfavorable coverage in the popular media, the conclusion to draw is that this is not "the age of information," and so the world can "forget the news, and the radio, and the blurred screen."

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