Fiduciary Governance of Bitcoin

Partnership, Attribution and the Law of Blockchain Governance Systems

By

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2026
Ethics International Press, UK

British Library Cataloguing in Publication Data
A catalogue record for this book is available from the British Library

ISBN (Hardback): 978-1-83711-853-3

ISBN (Ebook): 978-1-83711-854-0

Honesty is the recognition of the fact that the unreal is unreal and can have no value, that neither love nor fame nor cash is a value if obtained by fraud.

Ayn Rand

When you want to help people, you tell them the truth. When you want to help yourself, you tell them what they want to hear.

Thomas Sowell

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List of Abbreviations

AA	Anonymous Actor (as used in case law e.g., *AA v Persons Unknown*)
AC	Appeal Cases (Law Report Series)
AML	Anti-Money Laundering
ASIC	Application-Specific Integrated Circuit
BIP	Bitcoin Improvement Proposal
BTC	Bitcoin Core (Ticker for BTC Core fork)
BTC Core	Bitcoin Core Development Team / Governance Layer
BSV	Bitcoin Satoshi Vision (Correct Bitcoin protocol / Ticker: BSV)
CA	Court of Appeal
CFT	Combating the Financing of Terrorism
DAO	Decentralised Autonomous Organisation
DeFi	Decentralised Finance
DLT	Distributed Ledger Technology
ECHR	European Convention on Human Rights
ERC	Ethereum Request for Comments
EU	European Union
FCA	Financial Conduct Authority (UK)
FATF	Financial Action Task Force
FHE	Fully Homomorphic Encryption
FSMA	Financial Services and Markets Act 2000
Git	Version Control System used in software development

GitHub	Repository hosting platform for software collaboration
HL	House of Lords
ICO	Initial Coin Offering
IP	Intellectual Property
ISO	International Organization for Standardization
KYC	Know Your Customer
LLP	Limited Liability Partnership
LP	Limited Partnership
MAS	Multi-Agent System
MiCA	Markets in Crypto-Assets Regulation (EU)
MLAT	Mutual Legal Assistance Treaty
MPC	Multi-Party Computation
NFT	Non-Fungible Token
OECD	Organisation for Economic Co-operation and Development
OFAC	Office of Foreign Assets Control (US)
OSCOLA	Oxford Standard for the Citation of Legal Authorities
PC	Privy Council
PoS	Proof of Stake
PoW	Proof of Work
PPR	Property, Possession and Rights
RFC	Request for Comments (internet governance)
SEC	U.S. Securities and Exchange Commission
SGHC	Singapore High Court

SHA	Secure Hash Algorithm
TCP/IP	Transmission Control Protocol / Internet Protocol
TSC	Treasury Select Committee
UKSC	United Kingdom Supreme Court
UTXO	Unspent Transaction Output
VASP	Virtual Asset Service Provider
VPN	Virtual Private Network
WLR	Weekly Law Reports
ZKP	Zero-Knowledge Proof

Preface
Blockchain at the Crossroads

Bitcoin has matured into an institutional and policy-relevant asset class. It is held on corporate and exchange-traded balance sheets, traded through regulated venues, and increasingly addressed in public policy. Regulatory attention has continued to intensify. In the European Union, the Markets in Crypto-Assets Regulation (MiCA) entered into force in 2023 and came into full application on 30 December 2024. In the United Kingdom, the Law Commission's 2023 final report on digital assets has now been followed by the Property (Digital Assets etc) Act 2025, which received Royal Assent on 2 December 2025. In the United States, digital-asset policy has moved beyond the 2022 coordination order: Executive Order 14178 of 23 January 2025 revoked Executive Order 14067, established the President's Working Group on Digital Asset Markets, and was followed on 6 March 2025 by an order establishing a Strategic Bitcoin Reserve and United States Digital Asset Stockpile.

Yet at the protocol level — the level at which the rules governing Bitcoin's operation are written, maintained, and changed — a governance vacuum persists. The software that defines what counts as a valid Bitcoin transaction, what parameters govern the network's operation, and what changes are permitted to the protocol is maintained by a small group of developers known as BTC Core. These developers exercise discretionary authority over a system affecting millions of participants. They receive financial compensation from corporate sponsors whose commercial interests are directly affected by the governance decisions they make. And they operate without

formal accountability mechanisms, transparency requirements, or fiduciary obligations to the network's users.

This book asks a single question: who governs Bitcoin, and to whom are they accountable? The answer has two dimensions. The doctrinal dimension applies English partnership law and fiduciary doctrine to demonstrate that BTC Core's maintainers constitute a de facto partnership under the Partnership Act 1890, and that they owe fiduciary duties both to each other and to the network's participants. The methodological dimension develops a novel analytical framework — the Attribution Stack — for identifying and classifying governance control in technology-mediated systems where responsibility is designed to be diffuse. Together, these contributions provide the legal tools needed to impose accountability on governance actors who exercise power while claiming not to.

The book's argument extends beyond Bitcoin. The Attribution Stack is a transferable framework applicable to any technology governance context where authority is exercised through layered control mechanisms — content moderation platforms, algorithmic decision-making systems, decentralised autonomous organisations, and AI governance structures. The governance accountability problem examined in this book is the defining legal challenge of an era in which power is increasingly exercised through systems designed to make authorship invisible and accountability elusive.

This book originated as a doctoral thesis submitted to the University of Leicester. The monograph retains the thesis's full doctrinal analysis and extends it substantially: the Attribution Stack framework (Chapter 4), developed in the author's parallel research on the United States platform governance, is applied here for the first time to blockchain governance under English law. The remedial analysis

(Chapter 8) incorporates new material on proprietary claims for digital assets. The reform proposals (Chapter 9) translate the analysis into concrete legislative and regulatory recommendations. What follows is not merely a revised dissertation, but a reworked monograph that uses Bitcoin as the central case study through which a broader jurisprudence of technologically mediated governance can be developed: where actors exercise constitutive control over a system while presenting that control as decentralised, law must recover the reality of authorship, attribute responsibility, and impose the duties that power attracts.

Acknowledgements

I am deeply grateful to my supervisors Professor Peter Jaffey and Associate Professor Dr Ebenezer Adodo for their unwavering support, guidance, and patience throughout this journey. Their expertise and thoughtful feedback have been invaluable, and I am truly thankful for the opportunity to learn and grow under their mentorship.

I would also like to extend my heartfelt thanks to my wife, Ramona. Her understanding, encouragement, and steadfast belief in me have made this achievement possible. Her support has been my foundation, and I am forever grateful for everything she has done to give me the space and strength to pursue this work.

I must also express my sincere appreciation to the medical staff who cared for me following a serious motorcycle accident. Their dedication, skill, and compassion during my recovery were nothing short of life-changing. Without their expert care and encouragement, I would not have been able to return to my studies and complete this research.

Chapter 1
Introduction

Bitcoin is a form of 'cryptographic asset'[1] recorded on blockchain: a 'decentralised and distributed cryptographic digital 'ledger' that is used to record transactions'.[2] The blockchain ledger is decentralised over a peer-to-peer network of 'nodes' (computers running the blockchain software), storing information in encrypted, verified, and time-stamped 'blocks' which are linked together in an immutable 'chain'.[3] Those users who validate the blockchain transactions, known as miners, are rewarded with new Bitcoin. Every new Bitcoin, and every subsequent, validated transaction with that Bitcoin, is recorded within the Bitcoin blockchain.[4]

Introduced by Satoshi Nakamoto, Bitcoin revolutionised digital finance by proposing a secure, trustless,[5] immutable, and decentralised peer-to-peer electronic system of value transfer.[6] Its foundational design relies on cryptographic techniques and proof of work mechanisms to validate transactions, ensuring that network

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[1] It is often referred to as 'digital currency' or cryptocurrency, though whether it constitutes legal currency of any kind varies depending on the jurisdiction.
[2] Marcelo Corrales, Mark Fenwick and Helena Haapio, Legal Tech, Smart Contracts and Blockchain (Springer 2019) 2.
[3] Larry A DiMatteo, The Cambridge Handbook of Smart Contracts, Blockchain Technology and Digital Platforms (CUP 2019) para 2.1.1.
[4] Arvind Narayanan and others, Bitcoin and Cryptocurrency Technologies (Princeton University Press 2016) ch 3.
[5] Not dependent on trust in intermediaries.
[6] Satoshi Nakamoto, 'Bitcoin: A Peer-to-Peer Electronic Cash System' [2009] SSRN <https://www.ssrn.com/abstract=3440802>.

integrity is maintained without reliance on centralised authorities or discretionary governance.[7] This fixed and immutable framework was intended to establish a system whereby all participants operated under a uniform set of rules, eliminating trust-based dependencies, and allowing digital, value transactions across the Internet.[8]

Nevertheless, the original assumptions which underpinned Bitcoin as a system of value-transfer have been cast into doubt by the growth of a centralised group of people in control of BTC Core. BTC Core is a free, open-source Bitcoin node software which enables users to verify transactions on the Bitcoin ledger. That software is the sole means of validating transactions on the Bitcoin blockchain, and so the sole means of interacting with or using Bitcoin. Behind the program is a small group of developers holding merge access to the GitHub repository, who are funded by myriad corporate and industry interests.[9]

The critical importance of BTC Core to the overall functioning of the Bitcoin system represents a fault line: a point of centralisation at which the core philosophy of the blockchain may break down. BTC Core functions in a manner that consolidates decision-making power

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[7] Satoshi Nakamoto, 'Bitcoin: A Peer-to-Peer Electronic Cash System' [2009] SSRN <https://www.ssrn.com/abstract=3440802>; Not dependent on trust in intermediaries.

[8] Satoshi Nakamoto, 'Bitcoin: A Peer-to-Peer Electronic Cash System' [2009] SSRN <https://www.ssrn.com/abstract=3440802>.

[9] Andrey Sergeenkov, 'Who Are Bitcoin Core's Developers?' (Coin Market Cap, 2022) <https://coinmarketcap.com/academy/article/who-are-bitcoin-cores-developers>; see also Bitcoin Core, 'About' (Bitcoin Core, 2026) <https://bitcoincore.org/en/about/>; Bitcoin Core Academy, 'Project roles' (Bitcoin Core Onboarding, 2026) <https://bitcoincore.academy/contributors.html>; MIT Digital Currency Initiative, 'Bitcoin Core Development' (MIT DCI, 2026) <https://www.dci.mit.edu/bitcoin-network-development>.

within a limited group of developers and sponsors.[10] This centralisation poses consequential questions about the alignment of BTC Core's governance practices with the principles of decentralisation, as well as their legal and philosophical implications.[11]

This book critically evaluates BTC Core's governance by applying interdisciplinary perspectives, including legal analysis, philosophical frameworks, and operational insights. It explores how BTC Core's decision-making structure aligns with English partnership law and fiduciary obligations while critiquing its broader impact on decentralised systems. By examining these dynamics, the book illuminates the tension between Bitcoin's original design and the operational realities of its governance.[12]

Nature of the Problem

Bitcoin was intended as a trustless,[13] immutable, and decentralised peer-to-peer electronic value-transfer system.[14] Its rules were fixed through cryptographic and proof of work mechanisms, guaranteeing

[10] Darra Hofman and others, 'Blockchain Governance: De Facto (x)or Designed?' in Victoria L Lemieux and Chen Feng (eds), Building Decentralized Trust (Springer International Publishing 2021) 24-25; Angela Walch, 'Blockchain Emergencies & Open-Source Software Governance: Is 'Rough Consensus' a Suicide Pact?' (2021) 17 New York University Journal of Law and Business 699.
[11] Primavera De Filippi and Xavier Lavayssière, 'Blockchain Technology: Toward a Decentralized Governance of Digital Platforms?' in Anna Grear and David Bollier (eds), The Great Awakening (Punctum Books 2020) 187.
[12] Jon Baldwin, 'In Digital We Trust: Bitcoin Discourse, Digital Currencies, and Decentralized Network Fetishism' (2018) 4 Palgrave Communications 1, 5-6.
[13] A system non-reliant on interpersonal trust.
[14] Satoshi Nakamoto, 'Bitcoin: A Peer-to-Peer Electronic Cash System' [2009] SSRN <https://www.ssrn.com/abstract=3440802>.

that validation relied exclusively on mathematical consensus among the network, not discretionary decision-making.[15]

Despite Bitcoin's decentralised foundations, the governance of BTC Core reveals a centralised structure.[16] This book argues that BTC Core operates as a de facto partnership under English law, consolidating decision-making power in ways which undermine Bitcoin's foundational ethos, and potentially results in a lattice of fiduciary duties to developers and the network as a whole. By examining BTC Core through legal, philosophical, and theoretical lenses, the book critiques its governance practices and their broader implications for decentralised systems.

It posits three hypotheses concerning the divergence between Bitcoin's design and BTC Core's governance:

1. **Centralisation of Governance**. BTC Core exerts disproportionate control over Bitcoin's protocol updates through its gatekeeping authority on GitHub and reliance on external sponsors.[17]
2. **Legal and Ethical Questions**. BTC Core developers function as de facto governors of Bitcoin but lack formal accountability

[15] Satoshi Nakamoto, 'Re: Transactions and Scripts: DUP HASH160.. EQUALVERIFY CHECKSIG | Satoshi Nakamoto Institute' (Nakamoto Institute, 2010) <https://satoshi.nakamotoinstitute.org/posts/bitcointalk/126/#selection-37.0-32.12>.

[16] Darra Hofman and others, 'Blockchain Governance: De Facto (x)or Designed?' in Victoria L Lemieux and Chen Feng (eds), Building Decentralized Trust (Springer International Publishing 2021) 24-25; Angela Walch, 'Blockchain Emergencies & Open-Source Software Governance: Is 'Rough Consensus' a Suicide Pact?' (2021) 17 New York University Journal of Law and Business 699.

[17] Jon Baldwin, 'In Digital We Trust: Bitcoin Discourse, Digital Currencies, and Decentralized Network Fetishism' (2018) 4 Palgrave Communications 1, 5-6.

structures.[18] Their role raises legal questions about partnership obligations and fiduciary duties.

3. **Misrepresentation of Decentralisation.**[19] The BTC Core developers frequently characterise their governance as decentralised and their proposals for modifying the network as necessary. However, these representations do not correspond with the operational structure of the Bitcoin network, particularly given the limited participatory role of full nodes and the substantial influence exercised by developers, sponsors, and miners over protocol decisions.[20] This raises the potential for liability in misrepresentation, deceit, and negligent misstatement.[21]

These issues form the foundation for this book, which evaluates BTC Core's governance practices and their legal, philosophical, and operational implications. They are best understood as facets of a single

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[18] Severin Bonnet and Frank Teuteberg, 'Decentralized Autonomous Organizations: A Systematic Literature Review and Research Agenda' (2024) 21 International Journal of Innovation and Technology Management (IJITM) 1.

[19] Severin Bonnet and Frank Teuteberg, 'Decentralized Autonomous Organizations: A Systematic Literature Review and Research Agenda' (2024) 21 International Journal of Innovation and Technology Management (IJITM) 1; Angela Walch, 'Blockchain's Treacherous Vocabulary: One More Challenge for Regulators' (2017) 21 J Internet L 7, 9.

[20] Darra Hofman and others, 'Blockchain Governance: De Facto (x)or Designed?' in Victoria L Lemieux and Chen Feng (eds), Building Decentralized Trust (Springer International Publishing 2021) 24-25; Angela Walch, 'Blockchain Emergencies & Open-Source Software Governance: Is 'Rough Consensus' a Suicide Pact?' (2021) 17 New York University Journal of Law and Business 699.

[21] "Section 1 of the Partnership Act 1890 defines a partnership as 'the relation which subsists between persons carrying on a business in common with a view of profit.' As discussed in Section 7.2 (Ethical and Legal Duties of a Partnership), BTC Core's governance and sponsorship arrangements satisfy this definition, with the maintainers operating as de facto partners engaged in a coordinated business-like activity.".

constitutional problem. Throughout this book, decentralisation is treated not as a slogan or binary label, but as a question about where effective authority resides. A system may be distributed in computation yet centralised in governance if code maintenance, agenda control, parameter setting, funding, and veto power are concentrated in a small cohort. The legal significance of BTC Core therefore lies not simply in who can run software, but in whether a limited group can shape the constitutive rules, practical defaults, and public narrative of the network while disclaiming responsibility for doing so. Read together, the arguments advanced here show that architecture, incentives, governance practice, and decentralisation rhetoric are not separate issues but interlocking manifestations of control. This book provides a comprehensive analysis of BTC Core's governance. Its objectives are to establish Bitcoin's foundational design and principles, evaluate BTC Core's governance as a centralised structure through the lens of that foundation, and apply English legal doctrines to assess BTC Core's operations and obligations and the wider implications of BTC Core's governance for decentralised systems.

Central to this examination are BTC Core's breaches of fiduciary-like obligations, which include duties of good faith, loyalty, and care. These obligations are critical in governance roles where decisions affect a broader network of stakeholders. BTC Core's prioritisation of sponsor-driven objectives, disregard for Bitcoin's immutability principles, and neglect of network-wide scalability, illustrate a failure to act in the best interests of the Bitcoin ecosystem. Such breaches undermine trust, legal certainty, and Bitcoin's value proposition as a decentralised digital asset.

The regulation of blockchain ecosystems presents unique challenges and opportunities. Cross-border transactions, pseudonymity, and the

use of anonymity tools complicate enforcement and accountability. This book lays the foundation for exploring potential solutions, including international regulatory cooperation, such as mutual legal assistance treaties, and technological innovations like blockchain-based identity systems to reconcile pseudonymity with traceability. Additionally, it explores how automated enforcement mechanisms, such as smart contracts, and hybrid systems of code-based regulation, law, and alternative dispute resolution mechanisms, can enhance transparency and reduce reliance on centralised authorities. These measures highlight the importance of balancing regulatory oversight with the preservation of blockchain's innovative potential.

This research contributes to the overarching field of legal scholarship on blockchain governance by demonstrating how established legal principles can adapt to emerging technologies and identifying any lacunae in the law which need to be filled or clarified. By exploring the interplay between decentralisation narratives and centralised control, it offers a framework for addressing accountability and transparency in blockchain systems. These findings advance the ongoing conversation about the legal and ethical implications of blockchain governance, providing actionable insights for policymakers, regulators, and the academic community.

Methodology and Scope

This book employs a doctrinal and analytical legal research methodology,[22] focusing on the systematic examination of primary and secondary legal sources to achieve its objectives.[23] The doctrinal approach allows for the critical evaluation of the existing laws, case

[22] Dawn Watkins, Research Methods in Law (Routledge 2017).
[23] Terry Hutchinson and Nigel Duncan, 'Defining and Describing What We Do: Doctrinal Legal Research.' (2012) 17 Deakin Law Review 83.

precedents, and principles that underpin the classification of BTC Core as a partnership and a fiduciary under English law.[24] The methodology is enriched by integrating interdisciplinary insights from computer science, economics, and blockchain governance, to situate BTC Core's legal and operational framework within its broader socio-technical context.

The doctrinal approach is central to this study, which involves analysis and application of legal principles, statutory frameworks, and caselaw relevant to partnerships and fiduciary obligations.[25] This methodology identifies and applies key legal doctrines, such as the Partnership Act 1890, fiduciary responsibilities,[26] and equitable remedies[27] like unjust enrichment[28] and constructive trusts.[29] Landmark cases, including *Khan v Miah*,[30] *Boardman v Phipps*,[31] and *Re Agriculturist Cattle Insurance Co,*[32] are critically analysed to illustrate how BTC Core's governance aligns with partnership principles and fiduciary duties.[33]

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[24] Mark Blackett-Ord and Sarah Haren, Partnership Law (Bloomsbury Publishing 2020).
[25] Terry Hutchinson and Nigel Duncan, 'Defining and Describing What We Do: Doctrinal Legal Research.' (2012) 17 Deakin Law Review 83.
[26] See § Nature of Fiduciary Duties.
[27] See § Equitable Remedies.
[28] Rajiv Eric Shah, 'Reasons for Unjust Enrichment' (PhD Thesis, University of Cambridge 2018).
[29] Ashley Black, 'Baumgartner v. Baumgartner, the Constructive Trust and the Expanding Scope of Unconscionability Thematic Issue: Property' (1988) 11 University of New South Wales Law Journal 117.
[30] Khan v Miah [2000] UKHL 55, [2001] 1 All ER 20 (HL).
[31] Boardman v Phipps [1966] UKHL 2, [1967] 2 AC 46 (HL).
[32] Re Agriculturist Cattle Insurance Co (Baird's Case) (1870) LR 5 Ch App 725 (CA).
[33] Emeka Duruigbo, 'Inadvertent Partnerships and Fiduciary Duties' (2020) 14 Virginia Law and Business Review 65.

The study integrates key theoretical perspectives to frame its critique of BTC Core's governance. The first is Baran's 'Model of Decentralisation',[34] a foundational theory which distinguishes between centralised, decentralised, and distributed systems. This is applied to critique BTC Core's governance structure and identify how it departs from the original intentions of the network as envisaged by Satoshi Nakamoto.

The second is 'Code is Law':[35] Lessig's concept of governance through software is used to highlight the philosophical tensions between Bitcoin's fixed, immutable design and BTC Core's discretionary decision-making practices. This theory helps understand how Satoshi Nakamoto intended the network to be self-regulating, and how the limits of this have manifested in the centralisation of power through BTC Core.

The third is 'Code is Not Enough'.[36] This is Wu's challenge to 'Code is Law', which argues that governance requires more than immutable algorithms. Rather, it necessitates a dynamic interplay between legal frameworks and human judgment to address unforeseen complexities and ethical dilemmas that rigid systems of code cannot accommodate.[37]

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[34] Paul Baran, 'On Distributed Communications Networks' (1964) 12 IEEE Transactions on Communications 1; Christopher S Yoo, 'Paul Baran, Network Theory, and the Past, Present, and Future of the Internet' (2018) 17 Colorado Technology Law Journal 161.
[35] Lawrence Lessig, 'Code Is Law' (2000) 1 Harvard Magazine 2000; Lawrence Lessig, Code: And Other Laws of Cyberspace (ReadHowYouWant.com 2009).
[36] Tim Wu, 'When Code Isn't Law' (2003) 89 Virginia Law Review 679.
[37] Karen Yeung, 'Regulation by Blockchain: The Emerging Battle for Supremacy between the Code of Law and Code as Law' (2019) 82 MLR 207.

To contextualise BTC Core's governance practices, the book employs three case studies of key protocol decisions. The first is the Segregated Witness (SegWit) Implementation:[38] an analysis of how BTC Core's developers navigated the governance process, consolidating decision-making authority over protocol upgrades. The second is the SegWit2x Dispute:[39] a case study illustrating the breakdown of consensus and the centralisation of developer influence during critical protocol changes. The third is the Taproot Activation:[40] an examination of the governance dynamics and the interplay between BTC Core, miners, and network stakeholders during this protocol upgrade.[41] These case studies are used to evaluate BTC Core's governance through the lens of partnership law and fiduciary obligations.

While the study remains doctrinal in focus, it draws on insights from blockchain governance and computer science to clarify the technical underpinnings of Bitcoin's decentralisation claims. This interdisci-

[38] Cristina Pérez-Solà and others, 'Analysis of the SegWit Adoption in Bitcoin' (UAB, 2018) <https://deic.uab.cat/~gnavarro/files/papers/2018.recsi.segwit.pdf>; see also BIP 141: Segregated Witness (Consensus layer) (BIPs, 2015) <https://bips.dev/141/>.

[39] Sailendra Mishra, Liangfei Qiu and Subodha Kumar, 'Do the Bitcoin's Scaling Solutions Work? An Empirical Analysis of Segwit Policy Change' [2023] SSRN <https://www.ssrn.com/abstract=4517755>; see also BIP 148: Mandatory activation of segwit deployment (BIPs, 2017) <https://bips.dev/148/>; Primavera De Filippi and Benjamin Loveluck, 'The Invisible Politics of Bitcoin: Governance Crisis of a Decentralised Infrastructure' (2016) 5 Internet Policy Review.

[40] Pedro Casas and others, 'Where Is the Light(Ning) in the Taproot Dawn? Unveiling the Bitcoin Lightning (IP) Network' (IEEE 10th International Conference on Cloud Networking, CloudNet, November 2021).

[41] Paul B Miller and Andrew S Gold, 'Fiduciary Governance' (2015) 57 William & Mary Law Review 513.

plinary context enriches the legal analysis[42] by situating BTC Core's practices within the operational realities of blockchain networks.

The research focuses exclusively on BTC Core and its governance practices under English law. It does not examine other blockchain systems or regulatory frameworks in detail, nor does it rely on empirical data beyond the case studies of Bitcoin's governance. This approach ensures the research remains doctrinally rigorous while addressing the specific legal and ethical questions raised by BTC Core's governance.[43]

Organisation of the Book

Following this introductory chapter, the book is structured as follows. Chapter 2 and 3 provide a detailed explanation of the key concepts required for the analysis, including decentralisation, distribution, blockchain governance, and the philosophical and legal frameworks underpinning each. It also explores the origins and development of Bitcoin, the growth and features of BTC Core, and shows how Bitcoin's original design was intended to ensure trustless governance through mathematical consensus and economically determined incentives.

Comparative analyses will reveal that blockchain systems could benefit from adopting governance frameworks inspired by the

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[42] Sanne Taekema and Wibren van der Burg, 'Chapter 6: The Promises of Interdisciplinary Doctrinal Research' (Elgar Online, 2024) <https://www.elgaronline.com/monochap/book/9781035307395/book-part-9781035307395-14.xml>; Jane B Baron, 'Law, Literature, and the Problems of Interdisciplinarity' (1999) 108 YLJ 1059.

[43] I Isman and Ahmad Zainul Muttaqin, 'Innovative Legal Modeling for Interdisciplinary Studies on Law and Economic Behavior' (2024) 1 Indonesian Journal of Islamic Economic Law 60.

Internet.[44] It proposes that the Internet represents a 'best practices' model for developing decentralised, distributed systems, and evaluates the extent to which the Bitcoin architecture, as originally envisaged, follows this approach. Fixed-protocol approaches, similar to the Internet's TCP/IP, would limit governance disputes and power centralisation, ensuring that innovation occurs at higher layers instead of through core modifications.[45] Such an approach aligns with the principles of decentralised autonomy and could help blockchain systems realise their full potential while maintaining stakeholder trust.[46]

Chapter 4 evaluates the modern role of BTC Core within the Bitcoin governance architecture. It explains the extent of the body's centralisation and control over the modern Bitcoin ecosystem, the ongoing mischaracterisation of the role of honest nodes, and the influence of financial sponsors over Bitcoin's governance.

Chapter 5 introduces the Attribution Stack, a four-layer analytical framework for identifying and classifying governance control in systems designed to diffuse it. Originating in the author's parallel research on the United States platform governance, the framework distinguishes formal command, structural inducement, default

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[44] I Isman and Ahmad Zainul Muttaqin, 'Innovative Legal Modeling for Interdisciplinary Studies on Law and Economic Behavior' (2024) 1 Indonesian Journal of Islamic Economic Law 60; Sanne Taekema and Wibren van der Burg, 'Chapter 6: The Promises of Interdisciplinary Doctrinal Research' (Elgar Online, 2024) <https://www.elgaronline.com/monochap/book/9781035307395/book-part-9781035307395-14.xml>; Jane B Baron, 'Law, Literature, and the Problems of Interdisciplinarity' (1999) 108 YLJ 1059.

[45] M Nottingham, RFC 9518: Centralization, Decentralization, and Internet Standards (RFC Editor 2023).

[46] Emeka Duruigbo, 'Inadvertent Partnerships and Fiduciary Duties' (2020) 14 Virginia Law and Business Review 65.

power, and veto authority as distinct modes of governance, each with specified evidentiary markers and limiting principles. The chapter adapts the framework to blockchain governance under English law.

Chapter 6 explores BTC Core's governance model in practice. It uses the case studies outlined above to evidence the book's criticisms of the BTC Core model. It reveals the degree of centralisation in the hands of BTC Core, and evaluates the role of ideology as a narrative to reinforce centralisation and consolidate BTC Core's power. It discusses the potential legal implications of these case studies within English law.

Chapter 7 makes the case for BTC Core constituting a partnership under English law. It establishes the potential for BTC Core to meet the key criteria for a partnership – business, view to a profit, and commonality.[47] It also addresses the potential counterarguments arising out of the novel nature of blockchain technology and the supposed ideologically driven elements within BTC Core.

Chapter 8 explores the fiduciary duties arising from partnership classification, including the duties of loyalty, care, and transparency. It develops the argument for ad hoc fiduciary duties extending beyond the partnership to network participants, grounded in delegated governance authority over constitutive rules. Chapter 8 examines the remedies available for breach, including partnership-specific remedies, equitable remedies such as injunctions and rescission, and financial remedies including accounts of profit and damages. It addresses the practical difficulties of adapting existing remedies to a decentralised, globalised and potentially anonymous environment.

[47] Partnership Act 1890.

Chapter 9 synthesises the findings and explores challenges and solutions arising out of the evolving nature of blockchain technology, the role of emerging technologies, and regulatory trends across jurisdictions. Chapter 9 translates the analysis into concrete reform proposals, including codifying fiduciary duties for blockchain developers, adapting tort law to blockchain ecosystems, enhancing proprietary claims for digital assets, promoting transparency through disclosure requirements, and supporting hybrid governance models. It concludes with recommendations to law and policy makers, developers, and international regulatory bodies.

Chapter 2
Decentralisation, Distribution and the Architecture of Bitcoin

Introduction

To understand the impact of BTC Core on the Bitcoin blockchain, one must first understand the role of decentralisation, distribution, code, and other principles which are foundational to the technology. Understanding these principles and examining cases where they operate in practice helps to clarify how they could assist Bitcoin in achieving its aims of a decentralised, trustless system of value-transfer – and the potential dangers along that route. This is the topic of this chapter.

The first section examines the meaning of decentralisation and distribution, its intended role within a blockchain ecosystem, and the advantages and disadvantages of a decentralised, distributed system. It also explores how the foundational principles of such systems can be eroded in practice, and the perils of such erosion. The second section outlines the 'Code is Law' theory, showing how programming architecture can operate as a form of regulation within the blockchain ecosystem, and the limits of excessive reliance on this to the exclusion of other forms of regulation. The third section makes the case for the Internet representing a sort of 'best practices' model for decentralised and distributed systems, and discusses what blockchain can learn from the experience of this technology.