Universal Digital Evolution Charter (UDEC)
通用数字进化宪章

Proposal for a Reliable Legal Framework for
Evolving Technologies such as DLT, AI, and Quantum Computing
为不断发展的技术如分布式账本技术、人工智能和量子计算等建立可靠的法律框架的提案

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1.1   Introduction 简介

The Universal Digital Evolution Charter(UDEC) represents a proactive approach to providing developers and users of the rapidly evolving three most important Web3-technologies, namely DLT, AI, and Quantum Computing, with critical legal roadmaps to navigate the fundamentally changing business landscape. The purpose of the UDEC is to outline the minimum legal requirements that Web3-projects (and/or the Metaverses) must meet to enable users for their services to conduct legally valid and compliant digital

transactions. This is a crucial prerequisite to assess the operational risk of any Web3-business.

通用数字进化宪章（UDEC）是一种主动的方法，为快速发展的三种最重要的 Web3 技术（即分布式账本技术（DLT）、人工智能和量子计算）的开发者和用户提供重要的法律路线图，以引导他们应对根本性变化的商业环境。UDEC 的目的是概述 Web3 项目（和/或元宇宙）必须满足的最低法律要求，以使其服务的用户能够进行合法有效且合规的数字交易。这是评估任何 Web3 业务运营风险的重要前提。

Since Web3 merges the legacy/physical world with the digital world in such a way that a person experiences seamless and interchangeable rules regardless of where he/she transacts. By providing such a structured Web3 legal framework, UDEC aims to ensure the widest possible extension of existing national (including international) laws for the legacy/physical world to digital transactions in Web3. This leads to fair outcomes, mitigate risks, and instills confidence in legal-based transactions within Web3. This initiative sets the stage for future technological advancements, where UDEC will provide the core requirements for a UDEC as a legal framework that ensures that applicable laws provide the legal certainty essential for building new markets using the benefits in these emerging technologies.

由于 Web3 将传统/物理世界与数字世界融合在一起，因此无论人们在哪里进行交易，都能体验到无缝和可互换的规则。通过提供这样一个结构化的 Web3 法律框架，UDEC 旨在确保尽可能广泛地将传统/物理世界的现有国家（包括国际）法律扩展到 Web3 中的数字交易。 这将带来公平的结果，降低风险，并为 Web3 中基于法律的交易注入信心。这项倡议为未来的技术进步奠定了基础，UDEC 将为作为法律框架的 UDEC 提供核心要求，确保适用法律为利用这些新兴技术的优势建立新市场提供必要的法律确定性。

Since UDEC is designed to merge the physical and digital worlds, it establishes seamless and interchangeable transaction rules. By outlining minimum legal requirements, UDEC enables projects operating in these cutting-edge domains to conduct legally valid and compliant digital transactions. This comprehensive UDEC legal framework addresses essential elements and regulatory challenges, facilitating the integration of evolving technologies and fostering a stable environment for innovation and growth. UDEC will contain the legal frameworks that emerge from the various legal systems, ensuring that Web3 projects have the greatest possible security that their transactions are legally valid,

compliant and enforceable, as users can rely on, and trust established and familiar rules of national laws based on known traditional rules and concepts.

由于 UDEC 旨在融合物理世界和数字世界，因此它制定了无缝和可互换的交易规则。通过概述最低法律要求，UDEC 使在这些尖端领域运营的项目能够进行合法有效、合规的数字交易。这一全面的 UDEC 法律框架解决了基本要素和监管挑战，促进了不断发展的技术的整合，并为创新和增长营造了稳定的环境。UDEC 将包含从各种法律体系中产生的法律框架，确保 Web3 项目拥有最大可能的安全性，确保其交易具有法律效力、合规性和可执行性，因为用户可以依赖和信任基于已知传统规则和概念的既定和熟悉的国家法律规则。

1.2 Core Objectives and Elements 核心目标与要素

The primary objective is to provide a UDEC as a legal framework that extends existing national and international laws to digital and AI / Quantum-focused transactions, reducing barriers to entry and ensuring legal certainty to build global markets in evolving technologies.

其主要目标是提供一个 UDEC 作为法律框架，将现有的国家和国际法律扩展到数字和以人工智能/量子为核心的交易，减少进入壁垒，确保法律的确定性，从而在不断发展的技术领域建立全球市场。

1. **Relationship to national Laws:** Determine the rules governing jurisdiction and the applicable law on digital transactions within the scope of the UDEC Charter.
   与国家法律的关系： 确定 UDEC 管辖规则和范围内数字交易的适用法律。

2. **Digital Identity:** Establishing the framework for secure and verifiable digital identifiers to ensure trust and authenticity in digital interactions, enabling the associated identities to become the bearers of rights and obligations.
   数字身份： 建立安全、可验证的数字标识符框架，确保数字互动中的信任和真实性，使相关身份成为权利和义务的承担者。

3. **Digital Ownership:** Defining and protecting the requirements for digital property rights to establish and maintain integrity, security, and transferability of digital assets, which

enables to commercialize the value of data and information.

数字所有权： 定义和保护数字产权要求，以建立和维护数字资产的完整性、安全性和可转让性，从而实现数据和信息价值的商业化。

4. **Contract Settlement:** Ensuring that all contractual obligations are met within a single transaction, preserving the integrity of the transaction, ensuring legal and compliant contracts, and enabling their enforcement in both the physical and digital worlds.

   合同结算： 确保在单一交易中履行所有合同义务，维护交易的完整性，确保合同合法合规，并使其在物理世界和数字世界中都能执行。

5. **Privacy and Data Protection:** Establishing stringent privacy and data protection standards to safeguard personal and sensitive information.

   隐私和数据保护： 制定严格的隐私和数据保护标准，保护个人和敏感信息。

6. **Compliance:** Defining the requirements to comply with mandatory rules, such as financial market, KYC, corporate or export compliance regulations, ensuring that all activities within the ecosystem are legally sound.

   合规性： 确定遵守金融市场、KYC、企业或出口合规条例等强制性规则的要求，确保生态系统内的所有活动都合法合规。

7. **Dispute Resolution:** Providing the legal requirements to establish mechanisms for alternative dispute resolution (ADR), arbitration, and national jurisdiction to handle conflicts efficiently and fairly.

   争议解决： 提供法律要求，以建立替代性争议解决（ADR）、仲裁和国家司法管辖机制，从而高效、公平地处理冲突。

8. **DLT, AI, and Quantum Technology Integration:** Establishing guidelines for the use of these technologies to establish above-listed core elements within the applicable legal frameworks.

   分布式账本技术、人工智能和量子技术整合： 制定这些技术的使用指南，在适用的法律框架内确立上述核心要素。

9. **Regulatory Innovation:** The UDEC rules can provide national and international legislators with templates for creating dynamic and evolutionary technology-driven regulatory mechanisms that dynamically adapt to technological advancements, ensuring continuous compliance and governance.

监管创新： UDEC 规则可以为国家和国际立法者提供模板，用于创建动态和进化的技术驱动型监管机制，动态适应技术进步，确保持续合规和治理。

By incorporating these core elements, UDEC aims to provide a comprehensive legal framework that supports the seamless integration of digital and physical worlds, fostering the development of new markets and the evolution of law in Web3, AI, and quantum computing systems. These elements aim to integrate legacy national laws seamlessly into the digital realm, ensuring that users can exercise their rights and meet mandatory legal requirements through national courts, arbitral tribunals, or competent authorities.

通过纳入这些核心要素，UDEC 旨在提供一个全面的法律框架，支持数字世界和物理世界的无缝融合，促进 Web3、人工智能和量子计算系统中新市场的发展和法律的演进。这些要素旨在将传统的国家法律无缝整合到数字领域，确保用户可以通过国家法院、仲裁法庭或主管当局行使其权利并满足强制性法律要求。

1.3   Private Academic Workforce 私人学术队伍

UDEC is a private academic initiative that seeks to bring together leading academics and practitioners from around the world. This initiative aims to represent major B2B jurisdictions, including the USA, China, Japan, the EU (with key jurisdictions such as Germany and France), Switzerland, Singapore, Hong Kong, and the UAE. UDEC shall serve as a reference point for activities related to Web3, in particular, based on DLT, AI, and quantum computing. It will integrate the latest developments in law at international (such as the UNIDROIT Principles on Digital Assets and Private Law or the UNCITRAL Model Law on Electronic Transferable Records) and on national levels.

UDEC 是一项民间学术倡议，旨在汇聚世界各地的顶尖学者和从业人员。该倡议旨在代表主要的 B2B 司法管辖区，包括美国、中国、日本、欧盟（包括德国和法国等主要司法管辖区）、瑞士、新加坡、香港和阿联酋。UDEC 将作为 Web3 相关活动的参考点，特别是基于分布式账本技术、人工智能和量子计算的活动。它将整合国际（如国际统一私法协会《数字资产和私法原则》或联合国国际贸易法委员会《电子可转让记录示范法》）和国家层面法律的最新发展。

Based on a draft of a selected initial group of experts, we aim to further collaboratively develop UDEC as a guideline for enterprises, app developers, international organizations,

and national legislators. The founders will hand over the UDEC to a Swiss association, which will be responsible for this further development of the UDEC. This allows developing the first drafts much faster and focusing on the core issues.

我们的目标是在选定的首批专家的草案基础上，进一步合作开发 UDEC，使其成为企业、应用程序开发商、国际组织和国家立法者的指南。创始人将把 UDEC 移交给一个瑞士协会，由该协会负责 UDEC 的进一步发展。这样可以更快地完成初稿，并将重点放在核心问题上。

Integrating UDEC into national legislation will enable the enforcement of jurisdiction-specific policies, such as consumer protection, insured persons' rights, and investor protection, eliminating the need for further policy discussions within the group.

将 UDEC 纳入国家立法，将使消费者保护、被保险人权利和投资者保护等针对具体司法管辖区的政策得以实施，从而无需在团队内部进行进一步的政策讨论。

1.4   Codex and Commentary 法典和评注

UDEC is written as a codex with articles and chapters. All articles are supplemented by an explanatory commentary, which will also have an introductory chapter explaining the purpose, target audience, and how this project will be developed.

UDEC 是一本包含文章和章节的法典。所有条款都附有解释性评注，评注中还将有一个介绍性章节，解释该项目的目的、目标受众以及如何制定该项目。

The initial drafting committee will submit the draft code and commentary to a Swiss association. They will then be published it for further improvement by designated experts (see more information on the planned procedure in Chapter 6).

最初的起草委员会将向瑞士的一个协会提交准则草案和评注。然后，它们将被公布，供指定专家进一步完善（有关计划程序的更多信息，请参见第 6 章）。

2. Discussion 讨论

2.1 The Case for UDEC 制定 UDEC 的依据

- **Legal Certainty for Business Risk Assessment**: Legal certainty and compliance are crucial for the large-scale deployment of Web3 projects based on DLT, AI, and quantum computing. Enterprises need a reliable legal framework to assess business and operational risks effectively. Legal uncertainties can lead to business model failures, making it essential to establish clear legal guidelines for these Web3 transactions.
商业风险评估的法律确定性： 法律确定性和合规性对于大规模部署基于分布式账本技术、人工智能和量子计算的 Web3 项目至关重要。企业需要可靠的法律框架来有效评估业务和运营风险。法律不确定性可能导致商业模式失败，因此必须为这些 Web3 交易制定明确的法律准则。

- **Regulatory Challenges**: National and international legislative processes struggle to keep pace with technological advancements. Traditional regulatory approaches often fail to address the rapid evolution of technology. UDEC will incorporate technology-neutral legal concepts, such as the principle of functional equivalence that allows laws designed for the physical world to apply to digital transactions, provided the technology achieves regulatory objectives equivalently or better.
监管挑战： 国家和国际立法程序难以跟上技术进步的步伐。传统的监管方法往往无法应对技术的快速发展。UDEC 将纳入技术中立的法律概念，如功能等同原则，该原则允许为物理世界设计的法律适用于数字交易，前提是该技术能够等同或更好地实现监管目标。

- **Private Initiative**: Driven by academics and experienced practitioners, UDEC aims to provide guidance to Layer-0/1 developers and application creators. The goal is to enable end-users to structure legally valid and compliant transactions within the UDEC legal framework that helps to efficiently integrate these applications into chosen legal systems.
私人倡议： 在学术界和经验丰富的从业人员的推动下，UDEC 旨在为第 0/1 层开发人员和应用程序创建者提供指导。其目标是使最终用户能够在 UDEC 法律框架内构建合法有效和合规的交易，从而有助于将这些应用程序有效地集成到所选择的法律系统中。

- **Respecting Legal Diversity**: Based on comparative legal analysis and international academic deliberation, UDEC will help preserve legal diversity in DLT, AI, and quantum technologies by embedding national principles of inclusion and respect for diverse perspectives and practices. By establishing guidelines that require the consideration of different cultural contexts in the development and deployment of these technologies, UDEC will ensure that such Web3-systems are designed and implemented in ways that are legally and culturally sensitive. This framework shall protect against the homogenization of technology, fostering an environment where technological advancements reflect and respect global diversity.

尊重法律多样性： 在比较法律分析和国际学术讨论的基础上，UDEC 将通过纳入包容和尊重不同观点和实践的国家原则，帮助维护分布式账本技术、人工智能和量子技术的法律多样性。通过制定指导方针，要求在开发和部署这些技术时考虑到不同的文化背景，UDEC 将确保这些 Web3 系统的设计和实施在法律上和文化上都具有敏感性。这一框架将防止技术同质化，营造一个技术进步反映和尊重全球多样性的环境。

- **Sovereign AI System Integration:** UDEC enables sovereign AI by establishing a legal framework that allows AI systems to be tailored to the unique ethical standards and legal values of each country by embedding principles that mandate the consideration of local norms and regulations. UDEC sets the legal prerequisites to ensure that AI technologies respect the diverse legal contexts in which they operate and that the DLT system secures enforcement of digitally executed transactions. This customization is crucial for long-term AI governance as it promotes trust, compliance, and acceptance of AI systems across different jurisdictions. Moreover, it prevents the imposition of a one-size-fits-all model, fostering a more equitable and culturally sensitive global AI landscape.

主权人工智能系统集成： UDEC 通过建立一个法律框架来实现主权人工智能，该框架允许人工智能系统根据每个国家独特的道德标准和法律价值观进行定制，并通过嵌入强制考虑当地规范和法规的原则来实现。UDEC 设定了法律先决条件，以确保人工智能技术尊重其运行所处的不同法律环境，并确保分布式账本技术系统能确保数字执行交易的执行。这种定制化对于长期的人工智能治理至关重要，因为它能促进不同司法管辖区对人工智能系统的信任、遵守和接受。此外，它还能防止强加 "一刀切"的模式，促进形成更加公平、文化敏感的全球人工智能格局。

2.2 Hybrid Framework for AI Governance and DLT-based Transactions and Enforcement 基于人工智能治理和分布式账本技术的交易与执行混合框架

2.2.1 Transcending Sovereign AI and Unified Global Approach to AI Governance 超越主权人工智能和统一的全球人工智能治理方法

The counter position to UDEC enabling sovereign AI that is adjusted to the culture and jurisdiction of each country argues that such an approach could lead to fragmentation and inconsistency in AI governance. Critics may contend that creating AI systems tailored to individual countries' cultural and legal standards could result in significant disparities in how AI is implemented and regulated, making global cooperation and standardization difficult.

对于根据各国的文化和司法管辖权调整 UDEC 以实现主权人工智能，持反对立场 的人认为，这种方法可能会导致人工智能治理的分散和不一致。批评者可能会认为，建立适合各国文化和法律标准的人工智能系统，可能会导致在如何实施和监管人工智能方面存在巨大差异，使全球合作和标准化变得困难。

Any business digitally executed is framed in one or even more national laws. By implementing a hybrid framework, UDEC aims to bridge the gap between global consistency and local legal requirements and specificity in AI governance. This approach ensures that AI systems are governed by universal standards while allowing for necessary adaptations to align with the cultural values and legal requirements of individual countries. It promotes a balanced, inclusive, and adaptive governance model that can effectively manage the complexities of AI in a diverse and interconnected world of global trade.

任何以数字方式执行的业务都以一个甚至多个国家的法律为框架。通过实施混合框架，UDEC 旨在弥合人工智能治理中全球一致性与地方法律要求和特殊性之间的差距。这种方法既能确保人工智能系统遵循普遍标准，又能根据各国的文化价值观和法律要求进行必要的调整。它提倡一种平衡、包容和适应性强的治理模式，能够在一个多样化和相互连接的全球贸易世界中有效管理人工智能的复杂性。

The UDEC Codex needs to take into account the following considerations: UDEC 法典需要考虑以下因素：

1.   Global Legal Standards: UDEC establishes a set of the core common legal principles that all AI systems must adhere to, respected in all countries. These principles

can include respect for human rights, non-discrimination, transparency, and accountability and operate on both input- and output governance of AI-systems.

全球法律标准： UDEC 制定了一套所有人工智能系统都必须遵守的核心共同法律原则，在所有国家得到尊重。这些原则可包括尊重人权、非歧视、透明度和问责制，并适用于人工智能系统的输入和输出管理。

2.   **Localized Adaptations:** Within the framework of these universal principles, UDEC allows for localized adaptations that enable AI systems to align with the specific legal standards and cultural values of individual countries. This ensures that AI systems are relevant and acceptable to local populations while maintaining a baseline of global legal standards.

本地化调整： 在这些普遍原则的框架内，UDEC 允许进行本地化调整，使人工智能系统符合各个国家的具体法律标准和文化价值观。这可确保人工智能系统与当地民众息息相关并为他们所接受，同时保持全球法律标准的基线。

3.   **Dynamic Compliance Mechanisms:** UDEC incorporates the rules for dynamic compliance mechanisms on the in- and output levels that allow AI systems to be audited and adjusted in real-time to ensure they meet both global standards and local regulations, such as rules on continuous monitoring, reporting, and adjustment processes.

动态合规机制： UDEC 在输入和输出层面纳入了动态合规机制的规则，允许对人工智能系统进行实时审核和调整，以确保其符合全球标准和当地法规，例如关于持续监测、报告和调整过程的规则。

4.   **Interoperability and Collaboration:** UDEC promotes the legal prerequisites to ensure interoperability between different national AI frameworks for standardized protocols and interfaces that facilitate cross-border collaboration and data exchange. This ensures that AI systems can work together seamlessly while respecting local regulations.

互操作性与协作： UDEC 促进法律先决条件，以确保不同国家人工智能框架之间的互操作性，从而促进跨境合作和数据交换的标准化协议和接口。这将确保人工智能系统能够在尊重当地法规的前提下无缝协作。

5.   **Global and Local Stakeholder Engagement:** UDEC will frame the rules to include both global and local stakeholders (e.g. governments, industry leaders, civil society, and academia) into the AI governance system to ensure that policies are both

globally   coherent   and   locally   relevant.

全球和地方利益相关者的参与： UDEC 将制定规则，将全球和地方利益相关者（如政府、行业领袖、民间社会和学术界）纳入人工智能治理体系，以确保政策既具有全球一致性，又与地方相关。

In drafting the UDEC, a cautious yet forward-thinking position will be taken with regard to recursive AI (also known as self-improving AI or AI that can enhance its own algorithms and capabilities), balancing innovation with precaution, ensuring that the development of self-improving AI systems is guided by stringent safety, legal, and transparency standards. 在起草 UDEC 的过程中，我们将对递归式人工智能（又称自我完善式人工智能或可增强自身算法和能力的人工智能）采取谨慎但具有前瞻性的立场，平衡创新与预防之间的关系，确保自我完善式人工智能系统的开发遵循严格的安全、法律和透明度标准。

2.2.2 DTL- and AI-based Dispute Settlement and Enforcement 基于分布式账本技术和人工智能的争议解决与执行

As in the real business world, Web3 transactions may lead to disagreements and disputes (e.g. in the case of poor contractual performance, fraud, or illegal transactions), which are resolved either by mutual agreement of the parties or by enforceable arbitration awards or court decisions. Digital systems require the same mix of flexibility for the parties to reach amicable solutions, which are fostered by the tight to obtain enforced awards/decisions. The UDEC integrates a dispute resolution system that balances the benefits of automated systems and human oversight.

与现实商业世界一样，Web3 交易可能会导致分歧和争议（例如，在合同履行不力、欺诈或非法交易的情况下），这些分歧和争议可通过双方协议或可执行的仲裁裁决或法院判决来解决。数字系统要求各方具有同样的灵活性，以达成友好的解决方案，而获得可强制执行的裁决/决定则有助于提高这种灵活性。统一争议解决中心整合了一个争议解决系统，平衡了自动化系统和人工监督的优势。

In recent years, states have enacted ever stricter regulations to control financial market instruments and the physical global trade of goods ("export compliance"). The hope that it will be possible to escape these rules by transferring business transactions to the digital space or to Web3 is deceptive. Experience in recent years has shown that national courts

and administrations take a tough line on such transactions. It therefore seems more sensible to introduce a controlled and systematic system that allows such measures to be enforced in digital transactions as well.

近年来，各国颁布了越来越严格的法规来控制金融市场工具和全球实物商品贸易（"出口合规"）。希望通过将商业交易转移到数字空间或 Web3 来逃避这些规定的想法是欺骗性的。近年来的经验表明，各国法院和行政部门对这类交易采取强硬立场。因此，更明智的做法似乎是采用一种有控制和有系统的制度，使这些措施也能在数字交易中得到执行。

The combination of DLT and AI technologies provides digital evidence based on records from the negotiation to the execution of the contract, the securing of assets for enforcement and the reliable execution of the parties' agreements or decisions/court decisions. AI systems can be used to find solutions that better meet the expectations and demands of the parties to resolve their conflicts.

分布式账本技术和人工智能技术的结合提供了基于从合同谈判到执行的记录的数字证据，确保了资产的强制执行，并可靠地执行了各方的协议或决定/法院判决。人工智能系统可用于找到更符合各方期望和要求的解决方案，以解决他们之间的冲突。

UDEC will introduce the rules for such dispute resolution processes, and how the enforcement of both, the outcome of the dispute settlement processes, and national authorities' acts should be implemented into Web3-business systems.

UDEC 将介绍此类争端解决程序的规则，以及如何将两者的执行、争端解决程序的结果和国家当局的行为落实到 Web3 商业系统中。

2.3   Market Development in Evolving Technologies 发展中技术的市场开发

UDEC provides the legal certainty and regulatory framework necessary for the development of new markets in Web3 operating on DLT, AI, and quantum computing technologies. By facilitating market entry, ensuring compliance and trust, adapting to regulatory changes, promoting innovation and collaboration, and maintaining cultural sensitivity, UDEC creates a supportive legal environment for technological advancement and market growth. This comprehensive approach positions UDEC as a pivotal tool in the evolution of emerging technologies and the expansion of their associated markets.

UDEC 提供了必要的法律确定性和监管框架，以开发基于分布式账本技术、人工智能和量子计算技术的 Web3 新市场。通过促进市场进入、确保合规和信任、适应监管变化、促进创新和合作以及保持文化敏感性，UDEC 为技术进步和市场增长创造了有利的法律环境。这种全面的方法使 UDEC 成为新兴技术发展及其相关市场扩张的关键工具。

2.3.1 Facilitating Market Entry 促进市场进入

UDEC's clear and comprehensive legal framework reduces the barriers to entry for businesses aiming to do business in the Web3, operating on DLT, AI, and quantum computing technologies. By providing legal certainty, UDEC enables entrepreneurs and companies to confidently invest in new technologies and business models, knowing that they are operating within a defined legal structure. This encourages innovation and attracts investment, fostering the development of new markets.

UDEC 清晰而全面的法律框架降低了企业的准入门槛，这些企业的目标是在 Web3 上开展业务，利用分布式账本技术、人工智能和量子计算技术运营。通过提供法律确定性，UDEC 使企业家和公司能够自信地投资于新技术和商业模式，因为他们知道自己是在一个明确的法律结构内运作。这鼓励了创新，吸引了投资，促进了新市场的发展。

2.3.2 Ensuring Compliance and Trust 确保合规和信任

Legal compliance is essential for building trust among market participants, including consumers, investors, and regulators. UDEC's guidelines ensure that transactions and operations in Web3, operating on DLT, AI, and quantum computing adhere to established legal standards. This compliance not only protects the interests of all stakeholders but also enhances the credibility and legitimacy of emerging markets, promoting their growth and sustainability.

合法合规对于在消费者、投资者和监管机构等市场参与者之间建立信任至关重要。UDEC 的指导方针确保在 Web3、分布式账本技术、人工智能和量子计算上进行的交易和操作符合既定的法律标准。这种合规性不仅能保护所有利益相关者的利益，还能提高新兴市场的可信度和合法性，促进其发展和可持续性。

2.3.3 Adapting to Regulatory Changes 适应监管变化

The rapid pace of technological advancement often outpaces the ability of traditional regulatory frameworks to keep up. UDEC addresses this challenge by incorporating modern legal approaches such as the principle of functional equivalence, allowing laws designed for the physical world to be applied to digital and ai/quantum-driven transactions. This adaptability ensures that regulatory objectives are met, even as technologies evolve, providing a stable legal environment that supports continuous market development.

技术进步的速度之快往往超出传统监管框架的能力。为应对这一挑战，UDEC 引入了现代法律方法，如功能等同原则，允许为物理世界设计的法律适用于数字和人工智能/量子驱动的交易。这种适应性确保了监管目标的实现，即使技术在不断发展，也能提供一个支持市场持续发展的稳定法律环境。

2.3.4 Promoting Innovation and Collaboration 促进创新与合作

UDEC encourages collaboration among developers, businesses, and legal experts to create and implement technologies that meet legal and regulatory requirements. By fostering an environment of cooperation and shared knowledge, UDEC helps to drive innovation and the development of new applications and services. This collaborative approach accelerates the growth of markets in Web3, operating on DLT, AI, and quantum computing, enabling these sectors to reach their full potential.

UDEC 鼓励开发人员、企业和法律专家之间的合作，以创建和实施符合法律法规要求的技术。通过营造合作和知识共享的环境，UDEC 有助于推动创新和新应用与服务的开发。这种合作方式加速了 Web3 市场的增长，在 分布式账本技术、人工智能和量子计算的基础上运行，使这些行业能够充分发挥其潜力。

2.3.5 Global Reach and Cultural Sensitivity 全球影响力和文化敏感性

UDEC's inclusion of diverse cultural perspectives ensures that new technologies are developed and deployed in ways that respect and reflect global cultural diversity. This sensitivity helps to avoid the homogenization of technology and promotes the creation of culturally relevant applications and services. By addressing the needs and preferences of different cultural groups, UDEC supports the expansion of markets on a global scale.

UDEC 吸收不同的文化视角，确保新技术的开发和应用尊重并反映全球文化的多样性。这种敏感性有助于避免技术的同质化，促进创造与文化相关的应用和服务。通过满足不同文化群体的需求和偏好，UDEC 支持在全球范围内拓展市场。

2.4 Enabling New Regulatory Toolsets 启用新的监管工具集

UDEC plays a crucial role in enabling new regulatory toolsets that arise from digital contract-driven Web3 systems. By providing a solid legal foundation, promoting dynamic regulatory mechanisms, facilitating the creation of precedent systems, ensuring transparency and accountability, supporting regulatory innovation, and ensuring legal interoperability, UDEC sets the stage for the evolution of technology-driven legal systems. This comprehensive approach not only fosters innovation but also ensures that emerging technologies operate within a framework of legal certainty and compliance.

UDEC 在促成由数字合同驱动的 Web3 系统产生的新监管工具集方面发挥着至关重要的作用。通过提供坚实的法律基础、促进动态监管机制、推动创建先例系统、确保透明度和问责制、支持监管创新以及确保法律互操作性，UDEC 为技术驱动型法律体系的发展奠定了基础。这种综合方法不仅能促进创新，还能确保新兴技术在法律确定性和合规性的框架内运行。

2.4.1 Establishing Legal Foundations for Digital Contracts 为数字合约奠定法律基础

UDEC sets the legal groundwork for the creation, execution, and enforcement of Digital contracts within Web3 environments. By defining the minimum legal requirements and compliance standards, UDEC ensures that Digital Contracts operate beyond the smart contracts within a legally sound framework. This foundation is essential for the development of regulatory tools that can interact with and govern these contracts effectively. This requires new forms of "smart contracts, which we call "Digital Contracts", that are truly smart and legally valid contracts. Data protection and confidentiality considerations require flexible digital contract technology, which is particularly important in the area of DLT technology.

UDEC 为在 Web3 环境中创建、执行和实施数字合约奠定了法律基础。通过定义最低法律要求和合规标准，UDEC 可确保数字合约在法律健全的框架内超越智能合约运行。这一基础对于开发能与这些合约有效互动并对其进行管理的监管工具至关重要。这就需要新形式的 "智能合约"，我们称之为 "数字合约"，它们是真正智能且具有法律效力的合约。出于数据保护和保密的考虑，需要灵活的数字合约技术，这在分布式账本技术领域尤为重要。

2.4.2 Enabling Dynamic Regulatory Mechanisms 支持动态监管机制

Digital Contracts must be inherently programmable, allowing them to include the UDEC Framework and dynamic regulatory mechanisms that can adapt to changing legal and market conditions. UDEC set the rule enabling to support this adaptability by providing guidelines for incorporating regulatory compliance directly into the code of Digital Contracts. This ensures that Digital Contracts are as flexible as real ones, but can automatically enforce legal obligations, monitor compliance, and adjust to new regulations as they are introduced.

数字合约必须具有内在的可编程性，使其能够包含 UDEC 框架和动态监管机制，以适应不断变化的法律和市场条件。通过提供将监管合规性直接纳入数字合约代码的指导原则，UDEC 制定了支持这种适应性的规则。这确保了数字合约与真实合约一样灵活，而且能够自动执行法律义务、监控合规情况，并在引入新法规时进行调整。

2.4.3 Facilitating the Creation of Precedent Systems 促进先例系统的创建

One of the key innovations enabled by UDEC is the establishment of precedent systems within Web3-based digital contracts. These systems allow for the accumulation and referencing of legal precedents created through the resolution of disputes and the enforcement of digital contract terms. This allows UDEC-based systems to integrate these precedents into their UDEC framework so that new Digital Contracts can reference past decisions to ensure consistency and predictability in legal outcomes.

无障碍数据交换所促成的关键创新之一是在基于 Web3 的数字合同中建立先例系统。这些系统允许积累和参考通过解决争议和执行数字合同条款而创建的法律先例。这样，基于

UDEC 的系统就可以将这些先例纳入其 UDEC 框架，从而使新的数字合同可以参考过去的裁决，确保法律结果的一致性和可预测性。

2.4.4 Promoting Transparency and Accountability 促进透明度和问责制

UDEC promotes transparency and accountability in Web3 systems by mandating the inclusion of clear, transparent terms within Digital Contracts. This transparency is crucial for regulatory bodies to assess and enforce compliance. Furthermore, UDEC's guidelines for dispute resolution and arbitration ensure that all actions taken within digital contracts are documented and can be audited, fostering a robust system of accountability.

UDEC 通过规定在数字合同中包含清晰、透明的条款，促进 Web3 系统的透明度和问责制。这种透明度对监管机构评估和执行合规至关重要。此外，UDEC 的争端解决和仲裁准则确保数字合同中的所有行动都有据可查，并可进行审计，从而促进了一个强有力的问责制度。

2.4.5 Supporting Regulatory Innovation 支持监管创新

UDEC encourages the development of innovative regulatory tools that leverage the unique capabilities of digital contracts. UDEC-based systems can operate by including automated compliance checks, real-time reporting to regulatory bodies, and adaptive governance mechanisms that evolve with technological advancements. By providing a legal framework that supports these innovations, UDEC enables regulatory bodies to develop and deploy cutting-edge tools that enhance oversight and governance in Web3 environments.

UDEC 鼓励开发创新监管工具，利用数字合约的独特功能。基于 UDEC 的系统可以通过包括自动合规检查、向监管机构实时报告以及随技术进步而发展的适应性治理机制来运行。通过提供支持这些创新的法律框架，UDEC 使监管机构能够开发和部署尖端工具，以加强 Web3 环境中的监督和治理。

2.4.6 Ensuring Legal Interoperability 确保法律互操作性

As Digital Contracts operate across different jurisdictions and regulatory environments, UDEC entails rules on the applicable law which ensures legal interoperability by aligning with international legal standards and principles. This alignment allows systems program

Digital Contracts to function seamlessly across borders, ensuring that they comply with relevant laws and regulations in all applicable jurisdictions. UDEC's role in harmonizing these legal frameworks is critical for the global scalability of Web3 systems. 由于数字合约的运行跨越不同的司法管辖区和监管环境，UDEC 需要制定适用法律的规则，通过与国际法律标准和原则保持一致，确保法律的互操作性。这种一致性使数字合约程序系统能够跨国界无缝运行，确保其符合所有适用辖区的相关法律法规。UDEC 在协调这些法律框架方面的作用对于 Web3 系统的全球可扩展性至关重要。

3.   Development and Implementation 发展与实施

Speed and Focus: UDEC, led by experienced academics and practitioners from the major technology jurisdictions worldwide, aims to develop the core legal principles quickly and focus on core issues. UDEC will integrate the latest legal developments at international and national levels.

速度与重点： 由来自全球主要技术司法管辖区的经验丰富的学者和从业人员领导的 UDEC，旨在快速制定核心法律原则，并将重点放在核心问题上。UDEC 将整合国际和国家层面的最新法律发展。

UDEC Endorsement: The first draft of UDEC will be developed and discussed for final endorsement at [the Blockchain Festival Conference in Zug, Switzerland in May 2025]. Post-conference, the draft will be published for deliberation within the academic community and among stakeholders, including layer-0/1 developers, quantum technologists, AI data firms, law firms, regulators and international organizations, and lawmakers, among others.

UDEC 支持： UDEC 初稿将在[2025 年 5 月瑞士楚格区块链节会议]上制定和讨论，以获得最终支持。会后，将公布草案，供学术界和利益相关者（包括 0/1 层开发人员、量子技术专家、人工智能数据公司、律师事务所、监管机构和国际组织以及立法者等）审议。