Camino Network

Why Travel Needs Blockchain

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Camino Network
Foundation

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Disclosure

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The information and specifications detailed in this document are specifically relevant to "camino-node" version v1.1.0.

Last updated: January 16, 2024

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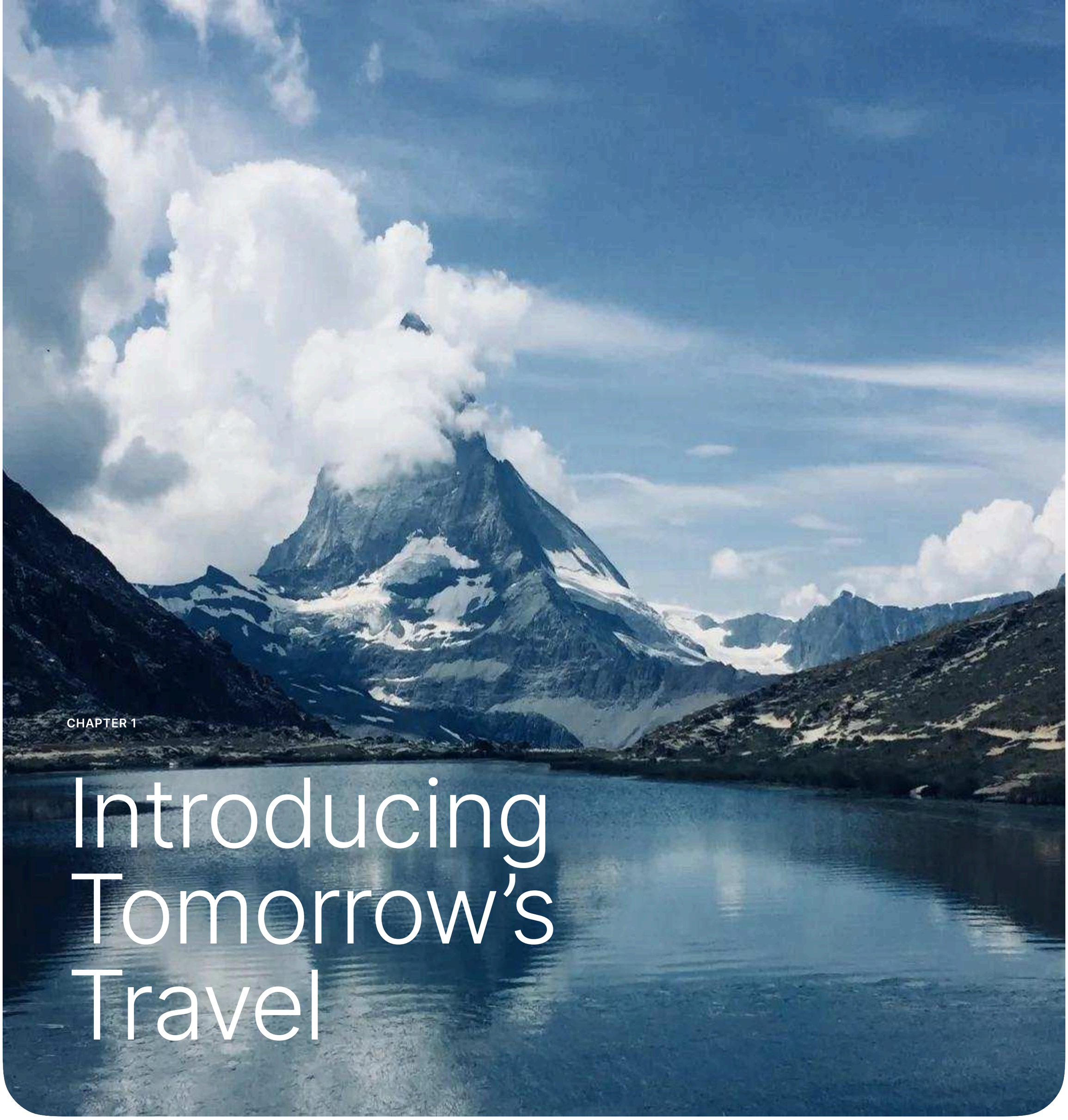
“API”	an Application Programming Interface is a piece of software that sends information back and forth between a website or application and a user.
“Avalanche”	is a cryptocurrency and heterogeneous network of blockchain platforms that aims to be fast, versatile, secure, affordable and accessible.
“Blockchain”	is a decentralized, distributed digital ledger that stores any type of data and is shared among the nodes of a computer network.
“Camino Consortium” or “Consortium”	is the Consortium of travel-related entities that participate in and technically operate the Camino Network, together with the Camino Network Foundation.
“Camino Messenger”	is a decentralized communication platform designed with the specific needs of travel companies in mind, providing them with a unified platform for seamless interactions.
“Camino Network”	is the first blockchain-based ecosystem connecting travel businesses and developers to create innovative solutions for the travel industry.
“CAM tokens”	is the native token of the Camino Network that facilitates transactions and incentivizes participation in the Camino Consortium.
“dApps” or “Decentralized Applications”	are blockchain-based smart contracts that run on a Peer-to-Peer (P2P) and act just like traditional apps, offering more in terms of functionality.
“DDoS (Distributed Denial-of-Service) attacks”	is a malicious attempt to disrupt the normal traffic of a targeted server, service, or network by overwhelming the target or its surrounding infrastructure with a flood of Internet traffic.
“ERC-20”	is a token used to create and issue smart contracts on the Ethereum blockchain.
“ERC-721”	is the standard to create Non-Fungible Tokens (NFTs).
“ERC-2771”	is the standard for specifying a protocol that allows a transaction signer to sign a message off-chain.
“GDP”	stands for Gross Domestic Product, which represents the total monetary or market value of all finished goods and services produced within a country's borders during a given period.
“GDPR”	is the European General Data Protection Regulation, which governs the processing and transfer of personal data of individuals in the EU.
“L1” or “Layer 1 blockchain”	is a base blockchain on which secondary blockchain networks and applications can be built. Bitcoin and Ethereum are the most common examples. Camino Network is an L1 specifically designed for the travel industry.
“MiCAR”	is the Regulation (EU) 2023/1114 on markets in crypto-assets.
“NFT” or “Non-Fungible Token”	is a cryptographic token that exist on a blockchain and cannot be replicated.
“OTA”	is an Online Travel Agency that allows users to book their vacations online (e.g. Booking).
“PoA” or “Proof-of-Authority”	is an algorithm that relies on the identity of trusted validators rather than digital assets, enabling faster transaction speeds with lower fees.
“PoS” or “Proof-of-Stake”	is an algorithm that randomly selects validators based on their stakes, rather than competing against each other.
“PoSA” or “Proof-of-Stake & Authority”	is a consensus mechanism used in blockchain networks that is designed to strike a balance between PoS and PoA, combining the best aspects of each consensus mechanism.
“Snowball Algorithm of Avalanche”	is a PoS blockchain consensus algorithm called Snowball which concept is that as soon as a node receives an incoming transaction, it checks if the transaction is valid, and, in addition, asks a small number of other random nodes for their opinion.
“Sybil attacks”	is a type of attack on a computer network service in which an entity has a large number of fake identities on a blockchain for malicious reasons.
“Travel Tech Companies”	are companies that provide digital booking services, online travel reviews, travel advice, and any other technology-enabled services.
“Travel Service Providers”	are providers who make travel services available, such as a scheduled airline, hotel and resort operator, lodging provider, vehicle rental or leasing agency, bus line, shipping line, or railroad.
"UNWTO"	refers to the World Tourism Organization, whose primary purpose is to promote responsible, sustainable and universally accessible tourism.
“Web3”	is the third generation of the World Wide Web, designed to be decentralized, open to everyone, and built on blockchain technologies and developments in the Semantic Web.
“World Economic Forum”	is an independent international organization founded in 1971 that works to improve the state of the world by engaging business, political, cultural and other community leaders to shape global, regional and industry agendas.



CHAPTER 1

Introducing Tomorrow's Travel

According to UNWTO, tourism is "a social, cultural and economic phenomenon which entails the movement of people to countries or places outside their usual environment for personal or business/ professional purposes." (UNWTO, n.d.) This industry is a global employer, with approximately 300 million jobs in 2022 and nearly 10% of global GDP in 2023, moving, serving, or accommodating billions of people annually. (Statista, 2023)

Digital technology like blockchain, which is built on social (community), cultural (shared infrastructure), and economic (decentralized digital ledger) pillars can empower the travel industry, smart destinations and the connected traveller with shared digital infrastructure, seamless connectivity, enhanced security, unified data standards, efficient transactions, and as a result, a transparent and collaborative environment on a global scale.

CHAPTER 1

The Current State of Travel

Centralized & fragmented supply chain

Today's travel industry is characterized by a centralized and fragmented supply chain (Dawes, 2022), where multiple bilateral written contracts and proprietary APIs govern the relationships within. (Waldron, n.d.) This significantly reduces efficiency, speed, and security, with technical and legal barriers separating end customers from service providers. This complicates the creation of innovative business models, technologies, and products, slowing the industry's pace of innovation and its ability to adapt to evolving customer needs.

Slow time-to-market

The highly complex process of going to market, which includes pricing, terms and conditions, liability, and compliance, traditionally takes a long time in the travel industry. It further involves evaluating potential business partners, negotiating terms, obtaining legal advice, drafting contracts, exchanging sizeable escrow deposits or surety bonds, and implementing the technical connection. Thus, streamlining the agreement phase is critical for the travel industry to increase efficiency, accelerate business growth, and respond quickly to market demands. (SaMa, 2021; Pajorska, 2022)

High transaction costs

High transaction costs, as imposed by gatekeeping aggregation platforms, are pressuring players in the travel industry, especially given its low-margin nature. In the hotel industry, for example, commissions charged to hotels range from 15% to 45% of the booking value. Credit card fees additionally take up to 3% of the booking margin (Mondoux, 2019; Iacurci, 2023). As a result, microtransactions and services become less distributable, and these high transaction costs hinder the industry's profitability (Jaehning, 2021).

Staff shortages

Workforce shortages have become a pressing challenge in the travel industry, especially in the post-Covid era. As one of the largest employers in the world, the industry is facing a shortage of skilled personnel across all verticals. In the European Union, 11 percent of tourism jobs are likely to go unfilled, with some verticals like travel agencies or hotels more severely hit than others. In order to efficiently address the workforce shortage, it is necessary to implement cutting-edge technologies such as smart contracts and Artificial Intelligence (AI) to enhance automation in serving the customer. (WTTC, 2022a)

Siloed, old tech systems

The travel industry today is organized into separate technology systems (Stoffelen, 2019). Different service providers operate independently, each speaking their own technical language. A travel distribution company, for example, must maintain a multitude of clients to different APIs, with a variety of message formats, different data fields, conflicting workflows, and repeated mapping of data for each provider. The result is the maintenance of hundreds of suppliers, information, services, and payment APIs. Currently, there is no common standard to improve the efficiency of integrated communication across or within travel verticals to reduce implementation and maintenance costs. To create seamless collaboration within the travel industry, all market participants will benefit from interoperable systems, using a mutually agreed and efficient data standards for each travel vertical in a single network structure. (Škorić, 2022; Balasubramanian et al., 2022)

Fraud and counterfeiting

Fraud and scams in the tourism industry have multiplied in recent years, largely due to the opening up of businesses via the Internet (TransUnion, 2021). For example, stolen credit cards are a serious problem, with online and chargeback cases exceeding $25 billion annually, accounting for 1-2% of total transaction volume (Juniper Research, 2020). Other types of scams, such as fake travel websites and account takeovers, are also on the rise. According to a report from the World Economic Forum in 2021, the direct influence of fake online reviews on global online spending is $152 billion (Marciano, 2021). Blockchain technology is emerging as a secure and reliable form of digital verification and authentication that increases the accuracy of identity verification processes by ensuring that all data is securely stored and up-to-date. As a result, blockchain technology reduces the risk of fraud and identity theft and increases overall cyber security.

Sustainability

Tourism contributed roughly 11 percent of global greenhouse gas emissions (WTTC, 2021). Consumers are also increasingly sensitive to environmental issues. Yet many travel companies are not transparent about their environmental impact or are not strengthening their sustainability efforts. While some are making individual efforts to create more sustainable travel, the industry as a whole needs to improve its sustainability record. Blockchain technology will help improve transparency, traceability, and confidence in data management (Webb, 2023).

CHAPTER 2

Introducing Tomorrow’s Travel

Today’s challenges can be solved with innovative new tech solutions that connect travel players in a better and more efficient way, and overall enforce digital innovation.

The vision

To address contemporary and future challenges of digitalization, the travel industry embraces the vision of an ecosystem and global shared infrastructure called Camino Network, designed to meet today's and tomorrow's challenges. This infrastructure – a global future-proof travel operating system owned by the travel industry - fosters collaboration among travel stakeholders and removes the barriers of disparate data standards and processes. This evolution towards a more unified and dynamic B2B ecosystem represents an immense progression of the entire travel industry and helps the companies meet new evolving market demands.

At the Camino Network Foundation, we aim to equip travel companies of all sizes worldwide, from industry giants to local tour guides, with equal access to advanced digital technologies like peer-to-peer messaging, seamless connectivity, data encryption, cross-border transactions, micropayments, and many others. We are committed to turning a highly fragmented travel industry into a united, community-driven ecosystem powered by a shared technological foundation of Camino Network.

Thomas Stirnimann
Chairman of the Council

Challenges	Manifestation examples	Blockchain opportunities
Centralized and fragmented supply chain	Inefficiencies in coordination between providers leading to delays and increased costs.	Seamless, real-time coordination among different entities, improving efficiency and reducing costs.
Slow time-to-market	Delays in launching new travel packages or updating pricing due to cumbersome approval processes and data synchronization issues.	Streamlined processes through smart contracts, enabling quicker updates and responsiveness to market changes.
High transaction costs	Additional fees for currency exchange, banking services, and intermediaries in booking and payment processes.	Reduced intermediary costs and lower transaction fees through direct peer-to-peer transactions on the blockchain.
Siloed, old-tech systems	Incompatibility between different booking systems and databases, leading to data errors and operational inefficiencies.	Interoperable platforms that allow different systems to communicate seamlessly with common travel data standards.
Fraud and counterfeiting	Fake booking offers, identity theft, and counterfeit travel documents.	Enhanced security with Know Your Business (KYB) and Know Your Customer (KYC) procedures, tamper-proof records and identity verification, reduced fraud.
Staff shortages	A high volume of manual processes in check-ins, bookings, and customer service, leading to inefficiencies and increased workload.	More streamlined processes through automation and smart contracts, reducing the reliance on manual tasks and improving operational efficiency.
Sustainability	Challenges in tracking and verifying sustainable practices across the travel supply chain.	Transparent tracking of sustainability metrics and practices, enabling verifiable and accountable eco-friendly initiatives.

CHAPTER 2

Layer 1 Blockchain for the Travel Industry

Project background

Ralf Usbeck (CEO of Chain4Travel AG), Thomas Stirnimann (Council Chairman of the Camino Network Foundation), and Pablo Castillo (CTO of Chain4Travel AG) collectively have decades of experience as serial founders and high-level executives in the travel and tech sector.

They have identified key challenges facing the industry and the emergence of new technologies, such as Web3/blockchain, that have been transformative in other industries. Travel is a $9 trillion global industry (WTTC 2022b). This size led them to create a vision to build a collaborative network based on blockchain technology called Camino Network and enable digital innovation for the global travel industry. After eight months of operation, the network is already trusted by over 170 companies in the travel and Web3 industries, companies that are actively building or exploring use cases.

To carry out the development and implementation of Camino Network, Ralf Usbeck, Thomas Stirnimann, and Pablo Castillo decided to incorporate a Swiss company limited by shares in December 2021, called Chain4Travel AG.

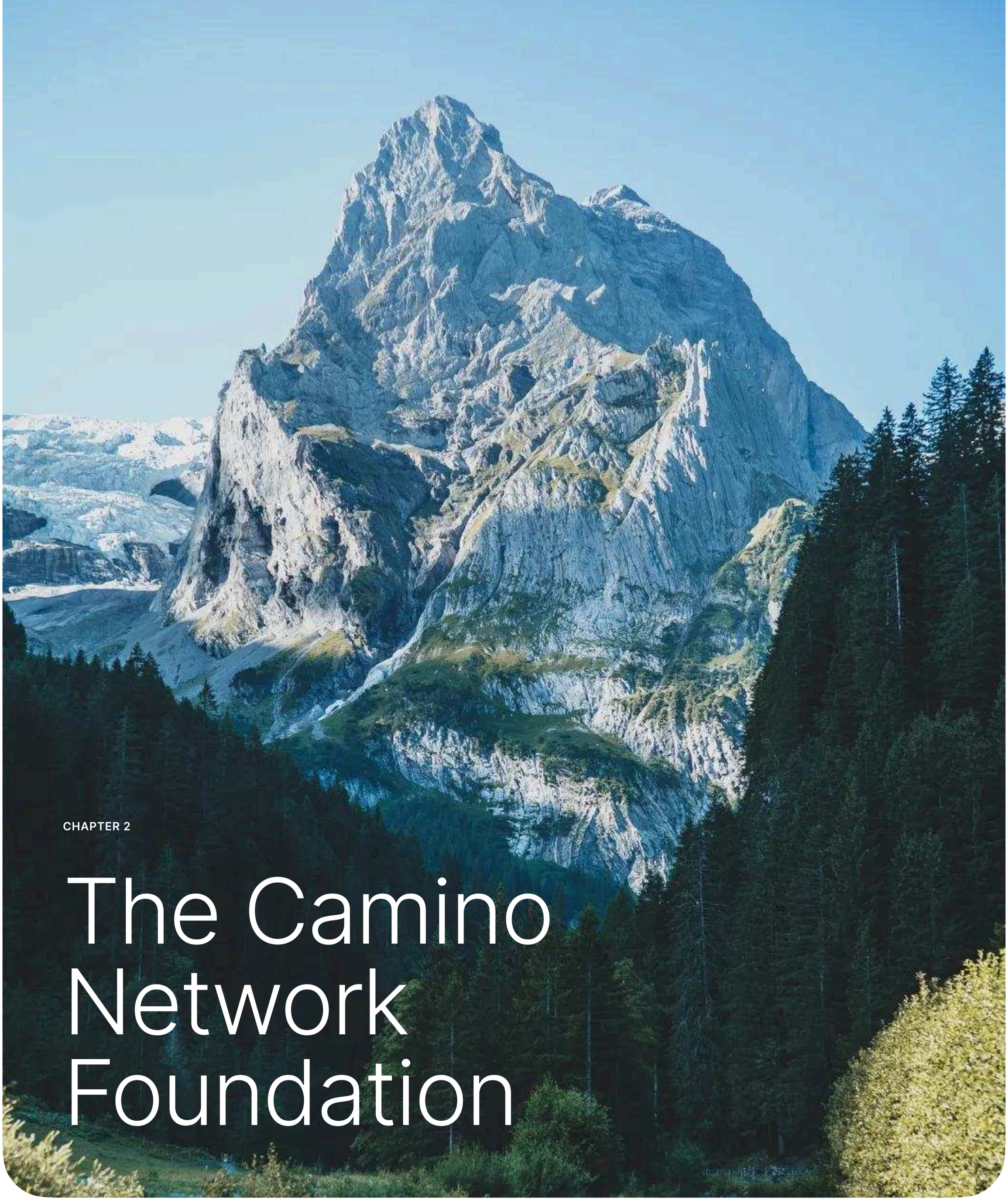
Chain4Travel AG was responsible for managing the development of Camino Network and raising the funds needed to carry it out. At the same time, and always with the vision of creating a network in which the participants, who are the network owners, will play an active role in the decision-making process, all the necessary steps were taken to create the Camino Network Foundation.

Today, the Camino Network Foundation works to develop and improve Camino Network with the support of the Camino Network community and, in particular, Chain4Travel AG.

Users of Camino Network

Camino Network is transforming into a multifaceted platform, attracting various participants from the travel and technology industries. It began by focusing on innovators in travel technology but has grown to include a broader range of professionals.

This expansion includes travel service providers like airlines and hotels, technology innovators creating novel solutions, analytics professionals utilizing data for better insights, financial and regulatory experts ensuring compliance, travelers, content creators, and brand advocates shaping the network's narrative and engagement. This diversification reflects Camino Network's evolving role in the travel industry.



CHAPTER 2

The Camino Network Foundation

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CHAPTER 2

The Camino Network Foundation

The Camino Network Foundation is an independent non-profit organization incorporated under Swiss law on May 15, 2023, with its registered office at Dammstrasse 16, 6300 Zug, Switzerland, and duly registered in the foundation register of Zug under number CHE- 376.609.933. The Camino Network Foundation is committed to bringing mainstream scalability and convenience to the development of Camino Network, which is operated by key market participants in the travel industry.

VISION

Enhancing travel technology for all

MISSION

Developing the web3 open source travel ecosystem

Scope

The main legal purpose of the Camino Network Foundation is to develop, promote, support, coordinate, educate, inform, and implement technological ecosystems using blockchain technology in the global tourism market. The Camino Network Foundation is primarily dedicated to supporting Camino Network, the first Layer 1 blockchain for the travel industry, built on a fork of the open-source Avalanche blockchain, as well as promoting a degree of decentralization within such a network.

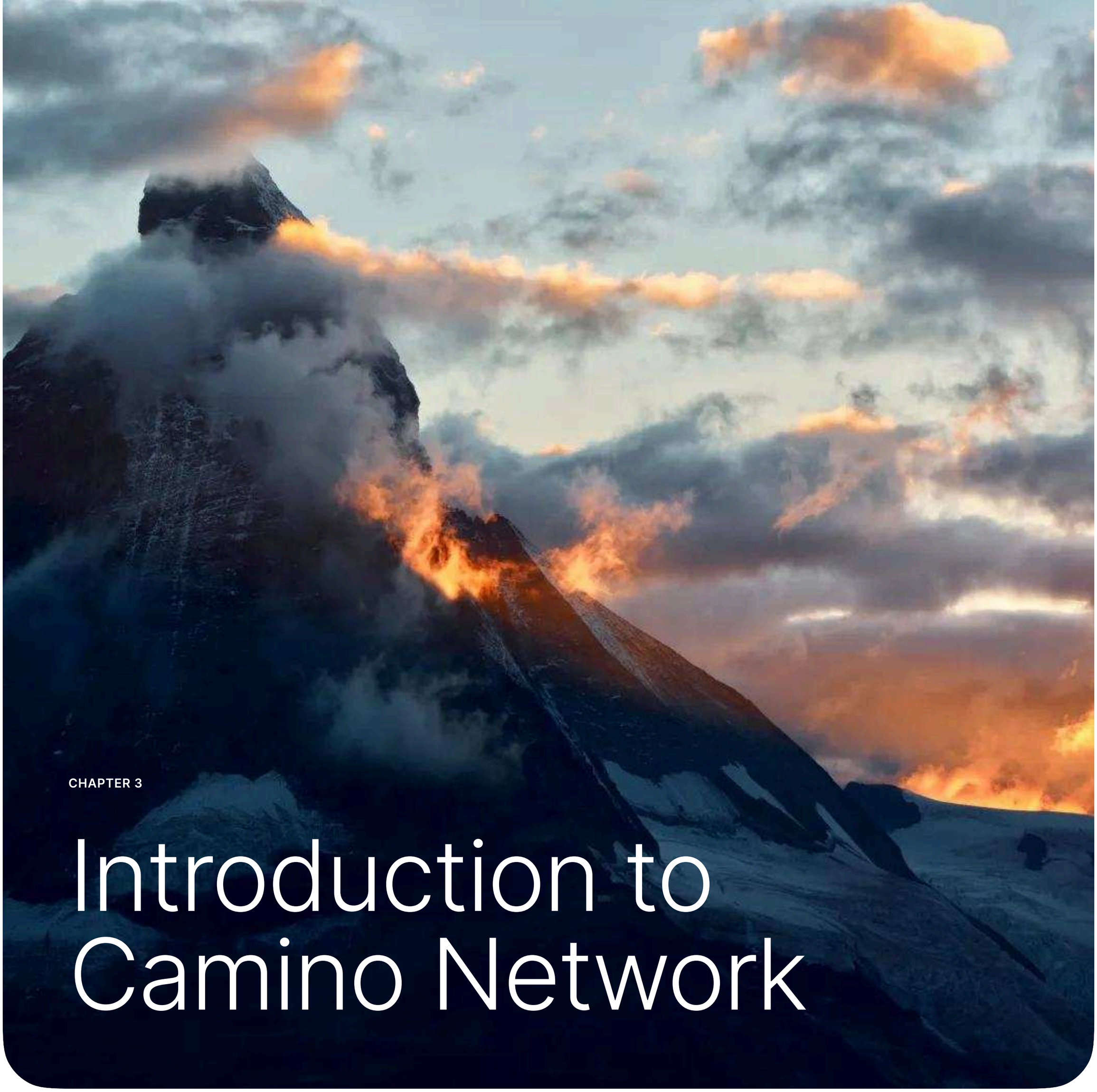
Governance

Following Article 5 of the Statutes of the Camino Network Foundation, the Council consists of a minimum of three members who act voluntarily. The current members of the Council of the Camino Network Foundation, acting jointly for a term of two (2) years, are (i) Mr Thomas Stirnimann – Chairman and member of the Council, (ii) Mr Piotr Wójtowicz – Secretary and member of the Council and (iii) Mr Benjamin Usinger – Member of the Council.

According to the Statutes, the Council of the Camino Network Foundation has the irrevocable functions to regulate the right of signature and representation of the Camino Network Foundation, to elect and appoint the Board of Directors, including the election of a Chairman and a Secretary; to elect the Auditor; and to approve the annual accounts.

In addition, the Camino Network Foundation is responsible for managing the development and growth of Camino Network by taking all necessary management decisions. The Camino Network Foundation Council also ensures that all funds are used correctly and follow the roadmap. The use of funds is always specified in the Camino Network Foundation's transparency report, which is published every six months and explains the technical, financial, business, and legal development of the project.

The Camino Network Foundation will rely on the Consortium of Network participants in the development of its activities, asking for their vote in some decisions (see p. 14), considering that Camino Network was created for these participants and that their interests and/or opinions are particularly relevant for the Camino Network Foundation.



CHAPTER 3

Introduction to Camino Network

1 PoSA consensus protocol

2 Security layer of KYC/KYB processes

3 Governance model

4 CAM token dynamics

5 Camino Suite of applications

6 Tech stack

7 Touristic capabilities enabled by Camino Messenger

8 Forking Avalanche

9 Quantum readiness

Camino Network is backed by an open-source, public, and permissioned blockchain-based framework developed to meet the unique needs and challenges of the travel industry.

Operated by a consortium of validators who are rewarded for jointly running it, this network implements a fast and efficient L1 blockchain capable of representing on-chain touristic assets, enabling business-to-business/consumer, consumer-to-business, and even consumer-to-consumer transactions and payments. Camino Network is augmented with search capabilities, making it capable of supporting the traffic generated by the travel industry, where major players collectively generate billions of searches per day.

Furthermore, it enables the porting or ex-novo building of dApps on this environment with minimal effort, thanks to its adherence to Ethereum Virtual Machine (EVM) standards and the composability of said dApps with other Web3 frameworks and artifacts generated on other blockchains.

CHAPTER 3

Consensus Protocol

Camino Network uses a customized consensus protocol known as Proof-of-Stake & Authority (PoSA). The PoSA consensus protocol is designed using distinct elements from both PoS and PoA:

- From PoS, emphasis is placed on the importance of validators having a substantial stake in the Camino Network ecosystem, ensuring their vested interest in the network's success.
- From PoA, the principle of having identifiable validators has been incorporated, ensuring transparency and trustworthiness.

The result is a consensus mechanism that provides rapid, secure transactions and efficient energy consumption that still does not centralize validation or consensus. It also implements public blockchain checks and practices of PoS to avoid abuse or malicious takeovers that can happen in a heterogeneous environment, such as the travel industry.

Key features of PoSA

Speed

Camino Network ensures sub-second immutable finality, enabling rapid and irreversible transaction confirmations.

Scalability

It supports a high network throughput with minimal latency, adapting efficiently to the network's needs.

Energy Efficiency

Camino Network's consensus is not computationally intensive, promoting a sustainable blockchain environment.

Adaptive Security

The protocol is resilient against a multitude of attacks, such as Sybil attacks, DDoS attacks, and collusion attacks, thanks to its probabilistic nature‡. Even under adversarial conditions, consensus leans towards the desired state.

‡: The term 'probabilistic nature' refers to a characteristic of the system in which decisions and outcomes are not determined by fixed rules or certainty but rather rely on probabilities or chances. In this context, the protocol assesses various possible outcomes and their likelihood when making decisions, allowing it to adapt to changing conditions and remain resilient, even in the presence of adversarial factors.

Proof of Stake & Authority

Camino Network's consensus is achieved through a system of repeated sub-sampled voting. When a node examines a transaction's legitimacy, it seeks the perspective of a randomly selected subset of validator nodes. The majority opinion sways the inquiring node's decision, which then continues this sampling process until consensus is reached over several rounds. This methodology echoes Avalanche's Snowball Algorithm, which is fundamental to the network's consensus process.

In the absence of conflicts, consensus is rapidly achieved. On encountering conflicts, however, honest validators swiftly pinpoint and rectify them, ensuring only legitimate transactions gain acceptance while conflicting ones are discarded.

Regardless of how many nodes are present, the algorithm remains scalable. The network always sends the same number of consensus messages, given that a node only consults a set number of other nodes in each query, irrespective of the network's size. Data integrity and structure are preserved using blocks, cryptographic entities that interlink transactions. A vote for a block implicitly supports its preceding blocks.

Camino Network's consensus leans towards probabilistic safety. Unlike some systems where block confirmation can be reversed (Walker, 2022), here, transactions are finalized within split seconds, providing both certainty and speed.

The PoSA consensus mechanism ensures the security and efficiency of Camino Network. The approach also supports the aim to establish a democratic ecosystem where every participant, through equal voting rights, collectively shapes the network's future, regardless of its size. This establishes the 'Authority' component in the Proof of Stake & Authority system, where each validator is both known and verified.

The democracy of the system is further amplified by the fact that participants are requested to be known entities and to bond an equal amount to validate and are thus rewarded equally, hence enforcing attribution of actions and avoiding the ecosystem leaning towards oligopoly or formation of sub-alliances among validators.

CHAPTER 3

KYC & KYB on Camino Network

Ensuring trust and security with a single verification

In the evolving landscape of digital transactions, ensuring user authenticity and security is paramount. Camino Network executes rigorous verification processes to uphold these standards. By implementing Know Your Customer (KYC) and Know Your Business (KYB) verifications, Camino Network aims to foster a secure, transparent, and trustworthy user environment. These processes are not just about compliance but are integral to the network's goal of becoming the environment of reference in which business transactions among travel players will happen.

What is KYC?

KYC, which stands for "Know Your Client/Customer," is an important process that verifies the identities of individuals or businesses engaged in financial or commercial activities. This regulatory mandate, prevalent in many countries, is designed to counteract illicit financial activities, including money laundering and the financing of illegal operations.

What is KYB?

KYB, which stands for "Know Your Business," is a term and concept related to compliance and due diligence in the financial industry. It parallels the established KYC process within Camino Network, which is used to verify the identity of customers, but for businesses. Also, it relates to ensuring that who transacts on Camino Network is who they claim to be, that no-one performs any phishing of known names in the industry, and that the paperwork related to establishing a contractual link in the network is reduced to a minimum.

Advantages of integrating KYC/KYB into Camino Network

Authenticity validation

KYB/KYC reinforces trust by authenticating participant identities, a cornerstone in trust-dependent sectors.

Augmented transaction reliability

Camino Network users can complete transactions such as hotel bookings with confidence, knowing that the recipient's wallet is KYB/KYC-verified.

Meeting regulatory norms

Some jurisdictions impose strict due diligence for transaction-involved businesses, making KYB/KYC indispensable on Camino Network.

Elevated B2B exchange efficiency

B2B interactions benefit from KYB/KYC as it simplifies the due diligence process. A single verification replaces repetitive checks with multiple partners.

CHAPTER 3

KYC & KYB on Camino Network

How it works

Camino Network has streamlined this process by offering a user-friendly interface via the Camino Wallet, allowing users to initiate and complete the verifications seamlessly. To simplify and optimize the KYC/KYB verification process, Camino Network collaborates with experienced third-party suppliers to handle the document verification process. These partners ensure that the document authentication process is swift, reliable, and secure. The partner platforms retain user document copies encrypted on GDPR-compliant servers, safeguarding against potential data breaches. On the Camino Network blockchain, only the wallet address verification status is recorded without storing any personal information.

KYC process

To achieve KYC verification, users are required to provide identification documents, such as passports or ID cards, and undergo a liveness check to confirm their physical presence.

KYB process

The KYB verification process involves assessing a business's legal stance, evaluating its ownership dynamics, and ensuring it is not affiliated with prohibited entities or activities. This includes checking various credentials, such as registration details, tax identification, and essential business licenses.

Why is KYC/KYB essential on Camino Network?

The Camino Network is not immune to potential misuse by malicious entities. Therefore, KYC/KYB becomes important to fortify against fraudulent actions and maintain the integrity of the network for all travel experiences. In addition, opting for external validation allows travel companies to bypass lengthy contracting cycles and paperwork, making business interactions more efficient. The network provides trust, allowing everyone in the Camino community to work together seamlessly.

Who requires KYC verification on Camino Network?

Certain activities on Camino Network, like deploying smart contracts, require users to have a verified status through KYC procedures. Additionally, some dApps on Camino Network may exclusively serve verified users, a decision left to the discretion of the dApp developers. Any other activity, such as transferring funds or interacting with regular smart contracts, does not require verification.

Who requires KYB verification on Camino Network?

Certain activities on Camino Network, like joining the Consortium or providing certain types of travel products or services, require users to have a verified status through KYB procedures. Additionally, documents related to KYB can be rendered accessible to parties participating in a transaction, upon their acceptance.

CHAPTER 3

The Consortium: Validators & Governance

Camino Network is operated by a Consortium of travel industry-related entities (the "Camino Consortium"). This structure ensures that each member has a vested interest in the success and sustainability of Camino Network.

Consortium members contribute to the network by providing a validator node and securing and validating transactions. In return for their services, they receive an equal share (30%) of the transaction fees as a reward.

The principle of validator equality is central to the Camino Network's governance philosophy. Regardless of their size or influence in the broader travel industry, every validator must bond the amount of 100,000 CAM. This creates a level playing field and ensures that each validator has an equal vote, an equal bond, and an equal role in the network's decision-making.

Companies who want to join the Camino Consortium undergo an application process to become validators. Transparency is key: all applicants must fully disclose their identity via a KYC and KYB verification, plus a vote by the existing Consortium members who will judge whether a business is relevant to travel and can thus bring value to the industry at large, as members will, in turn, decide on industry-affecting matters, such as the shaping of standards.

Governance system

At the heart of the Camino Consortium's governance system is the principle of equal representation for all active members, specifically defined as those having a running validator. Each validator is granted a single vote. This structure ensures that voting power cannot be increased by holding more Camino tokens or by increasing one's bond. The resulting democratic framework ensures that all active members have an equal voice and that decisions are made by consensus and majority rule.

In the governance system, core decision-making is based on a simple majority rule: a proposal is ratified if it garners over 50% of the votes and if more than 50% of the total eligible voters participate in the voting process.

However, the nature and implications of these decisions will vary significantly. Proposals that necessitate immediate changes to the network, such as modifications to the base fee or the induction of new Consortium members, will be executed directly on the blockchain once a majority vote is achieved. These are explicitly categorized as "Executive Votes" in the table below. On the other hand, some decisions, although still formalized through on-chain voting, do not directly alter the blockchain's state. Instead, these votes result in mandates or directives for subsequent off-chain actions. For example, decisions on the roadmap or grant programs are collective expressions of intent, which entrust specific follow-up tasks to the Camino Network Foundation for implementation.

Voting Type	Create Proposal	Vote on Proposal	See proposal and results	Majority / Quorum	Executive vote
Base Fee	Camino Network Foundation	Consortium members with active validator nodes	Everyone	50% + 1 / 50% + 1	✓
Transaction fee distribution	Camino Network Foundation	Consortium members with active validator nodes	Everyone	50% + 1 / 50% + 1	✓
Consortium member admittance*	Consortium Applicant	Consortium members with active validator nodes	Everyone	50% + 1 / 50% + 1	✓
Consortium member removal*	Any Consortium member	Consortium members with active validator nodes	Everyone	50% + 1 / 50% + 1	✓
General consortium vote*	Any Consortium member	Consortium members with active validator nodes	Everyone	Configurable case by case	✗
Camino Messenger formats vote*	Camino Network Foundation	Consortium members with active validator nodes	Everyone	Configurable case by case	✗
Grant program*	Camino Network Foundation	Consortium members with active validator nodes	Everyone	Configurable case by case	✗

*The necessary technological functionalities for immediate on-chain effects and off-chain follow-up actions have been established and will be gradually transferred to the oversight of the Camino Consortium as it expands, and its governance capabilities mature. Also, depending on the voting type, some votes will be initiated by the Camino Network Foundation which has a moderation function.

CHAPTER 3

Camino Token Utility

Camino token (CAM)

The Camino token (also referred to as "CAM") is the native token of Camino Network, facilitating transactions and incentivizing participation in the Consortium.

The CAM total supply is 1 billion tokens, of which 900 million were pre-minted at the time of origin, and 100 million were left unminted and are currently used to issue rewards for deposits that accrue them; see the Token Economy for details.

As an essential component of Camino Network, the CAM token serves several fundamental functions and roles within the ecosystem:

Transaction utility

CAM tokens are used to pay various transaction fees within the network.

Validators

A validator is a participant who operates a node on Camino Network and, as such, validates new transactions. To act as a validator, a participant in the ecosystem must "bond" a fixed amount of 100,000 CAM tokens to secure the network and validate transactions. Unlike some other blockchain networks, such as Avalanche, Camino Network does not use slashing and delegation mechanisms. Instead, the bonding mechanism enhances the security of the network and ensures the commitment of the validators. The validator independently defines the period of his validator activity, and consequently, during this period, his CAM tokens are non-transferable and cannot be "unbonded". Neither the validator nor the Camino Network Foundation has the authority to unbond the corresponding CAM tokens before the expiration of the bonding period. After the bonding period expires, the tokens become freely transferable again.

Proposal creation

To initiate proposals for voting, it is mandatory to bond 2,000 CAM tokens.

Payment

CAM tokens can be used as currency to conduct purchases in Camino Network, in addition to other payment options such as stable coins or Central Bank Digital Currency (CBDC).

§ Legal classification

Given the functions of the CAM token described above, the Camino Network Foundation has requested legal opinions to qualify its legal nature by Swiss law and European regulations, in particular, Regulation (EU) 2023/1114 on markets in crypto-assets ("MiCAR").

1. Per Swiss legislation, the CAM tokens fall under the legal qualification of a hybrid token, considering they may be deemed a payment token (means of payment) and a utility token (access to a specific product or service).

2. Per EU legislation, under MiCAR, the CAM token is neither considered an e-money nor an asset-referenced token due to the lack of backing with FIAT money or a combination of different assets; it is a utility token that serves as a protocol-specific transaction fee vessel and key to network validation.

Both legal qualifications are paramount, ensuring that the CAM token is not classified as a security by legal standards (i.e., CAM tokens do not represent assets such as debts or capital requirements of Camino Network, nor do they guarantee a share in the Camino Network Foundation or the Camino Network's future income or future capital flows. CAM tokens cannot be regarded as analogous to stocks, bonds, or any derivative financial instruments. Therefore, CAM tokens cannot be considered a financial instrument).

This multi-dimensional utility ensures that the CAM token is integral to the entire ecosystem's operation and growth while strictly adhering to legal classifications. Additionally, the Camino Network Foundation is constantly adapting to regulations according to a risk-based approach.
Finite supply and granularity: The native asset on Camino Network is nCAM (abbreviated as "nano CAM") and aCAM, short for "atto CAM," on the EVM chain. These assets provide fundamental utility within the ecosystem. The CAM token, representing larger value aggregates, maintains a hard cap to ensure scarcity and mitigate inflation risks.

For more granular transactions and precise value representation, nCAM and aCAM are used as smaller units of account. While 1 CAM is equivalent to 1,000,000,000 nCAM, it is also equal to 1,000,000,000,000,000,000 aCAM (10^18 aCAM). This system of nCAM and aCAM enables the network to handle a wide range of transaction sizes, from microtransactions to larger transfers, with high accuracy and efficiency.

CHAPTER 3

Transaction Fee Mechanics

Transaction fees

Transaction fees on Camino Network are primarily determined using a consistent base fee. However, this is not a static design. The Consortium has the authority to adjust the base fee through a collective vote.

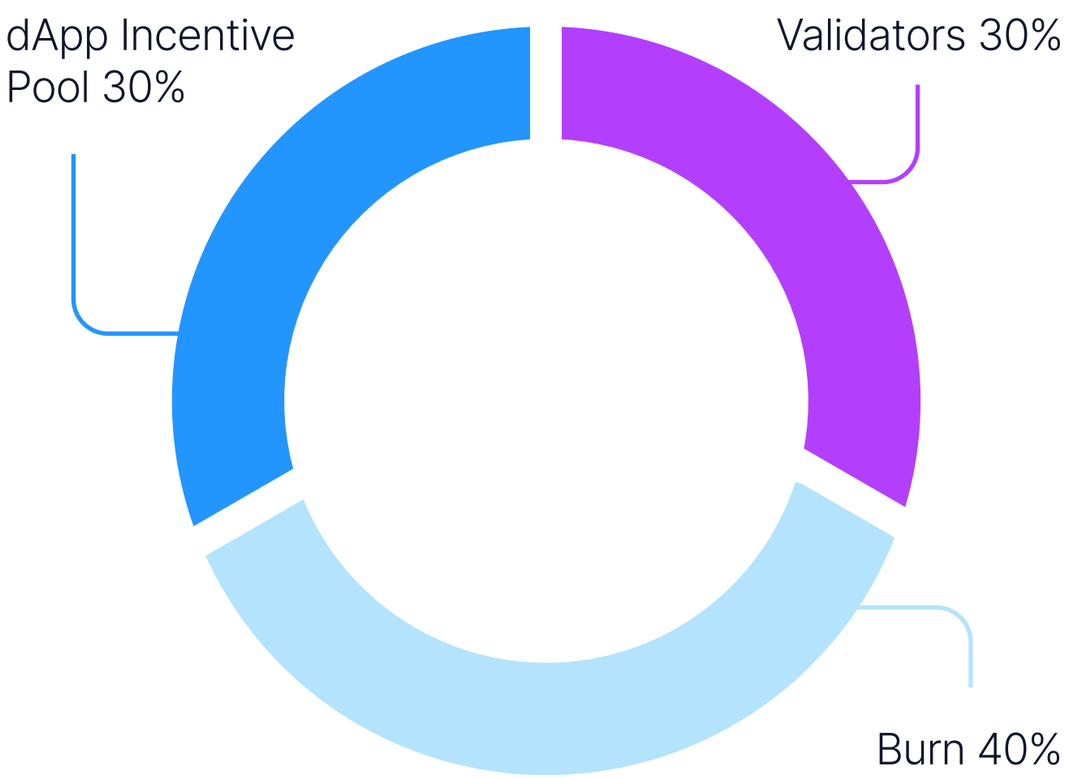
This mechanism empowers the Consortium to promptly respond to any fluctuations in the CAM token market price, as maintaining low base fees is paramount in a low-margin industry such as travel. The viability of many use cases is directly derived by low fees that enable transacting entities to maintain their margin percentage on transactions. This makes Camino Network adaptable while prioritizing cost-effectiveness in transactions.

Distribution of transaction fees

The distribution of transaction fees is essential for the smooth operation of Camino Network. These fees remunerate validators for their services and feed into the dApp incentive pool, which will be allocated by the Camino Foundation to encourage development and participation in the ecosystem, such as assigning grants to relevant projects. In addition, to strengthen the intrinsic value of the CAM token by increasing its scarcity, a certain segment of transaction fees will be routinely "burned". At launch, the specific distribution of how transaction fees will be allocated is presented as follows:

Distribution detail

Validators continuously accrue their rewarded share of transaction fees according to these percentages while they are active. The system is more tolerant than others who require validators to be online at all times because there are several measures at the consortium's disposal in order to deal with validators not keeping their nodes online for a significant amount of time, with the ultimate option of an exclusion vote. Accrued rewards are claimable at any time.



CHAPTER 3

Camino Application Suite

Camino Network introduced an Application Suite designed to strengthen its ecosystem by providing essential tools such as a Wallet, Explorer, and Partner Showroom. This Suite is a web-based front-end that allows non-technical users to interact with the chain for mostly business- and financial-related operations without the need for direct smart contract calling. It also serves as a reference implementation, encouraging and guiding partners in the development of their dApps tailored to Camino Network.

Camino Wallet

The Camino Wallet, designed with an intuitive user interface, offers the foundational features users anticipate from a cryptocurrency wallet:

- Transactions: send and receive CAM, do cross-chain transfers, support for ERC20, ERC721 and ERC1155 tokens, sign multi-sig transactions.
- Enhanced security: Safeguard assets using mnemonic phrases, keystore files, and integrations with reputable hardware wallets.
- Validator management: Register nodes, affiliate with validators, monitor uptime, and claim due rewards.
- Deposits: Engage in CAM deposits to capitalize on rewards from savings pools.
- Asset oversight: Manage an array of digital assets, from NFTs to custom tokens.

Additionally, Camino Network supports multisig management: Create and delete multisig wallets. Add or remove members, and update the threshold of multisig wallets.

Sustainability Tracker

With environmental responsibility in mind, the Camino Explorer provides critical carbon dioxide emission statistics:

- Emission insights: View daily emission rates, emissions per transaction, and the carbon intensity factor.
- Eco-awareness: Empower users to gauge and understand their individual and collective impact on the global climate.

Partner Showroom

The Camino Suite includes a Partner Showroom, a section where Consortium members can showcase their products by uploading images and text descriptions, and where anyone can see the status of their KYB validation and Validator node, if they have one, as well as which message types they support for interacting with other members via the Messenger.

Camino Explorer

The Camino Explorer equips users with the capabilities of a standard crypto block explorer:

- Transparency: Access detailed information on blocks and transaction specifics.
- Validator overview: Visualize all network validators, with geolocation features displaying their global positions and uptimes.
- Analytics: Study detailed graphs that show historical transaction trends and statistics.

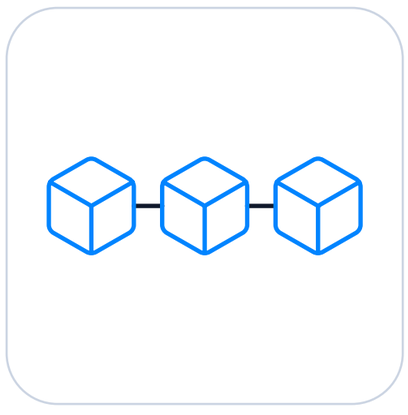
Consortium Voting

In the Consortium section of the Suite, users have visibility of all upcoming, voted for with relevant outcome, and the complete archive of Voting proposals. Consortium members are also able to vote here on current proposals.

CHAPTER 3

Technology Stack

Leveraging the robust framework of Avalanche technology, Camino Network's design emphasizes efficiency and versatility with an architecture that features three distinct chains, each tailored to its unique operational domain. To further customize the behavior of the Avalanche chains to be more applicable to a consortium environment, Camino Network also adds a fourth chain dedicated to touristic transactions and off-chain search capabilities at scale implemented by Camino Messenger.This section describes each of the chains in detail.

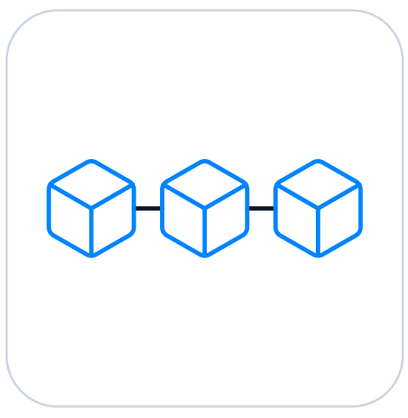


The Platform Chain (P-Chain)

As in Avalanche, the P-Chain operates as the network's metadata blockchain, primarily managing validators, staking, and tracking active subnets. It also enables the creation of new subnets within the Camino ecosystem. This chain is an instance of the Platform Virtual Machine tailored for platform-level operations. It ensures a linear progression of transactions and states on the P-Chain, providing consistency and reliability essential for the network's governance and operational processes, so it is where administrative and coordinated transactions run. Its primary functions include:

- Managing validator activity, ensuring network integrity.
- Facilitating bonding processes, giving participants the tools to lock and bond their tokens securely.
- Supporting Consortium’s voting proposals, driving consensus and operational harmony across Camino Network.

In addition, the P-Chain in Camino has been customized to support multi-sig Unspent Transaction Output (UTXO). This feature enables signatures to be collected to confirm transactions, such as sending tokens, voting on proposals, or starting a bond to activate a Validator or a Deposit KYB certification. In most cases, a business requires its multiple approval steps to be mapped on-chain to correctly port their corporate processes for important decisions or high-value transactions on Camino Network.



The Contract Chain (C-Chain)

The C-Chain, as an implementation of the Ethereum Virtual Machine (EVM), is key to Camino's compatibility with Ethereum's ecosystem. It allows developers to deploy smart contracts and decentralized applications using Solidity, Ethereum's programming language. The C-Chain's API, supporting Geth's API, facilitates a seamless transition for developers from Ethereum or other EVM-compatible chains, such as Polygon, to Camino Network. This chain is an instance of the Coreth Virtual Machine, focusing on smart contract operations and dApp functionalities. As in Avalanche, it is integral in fostering interoperability and developer engagement within the Camino Network.

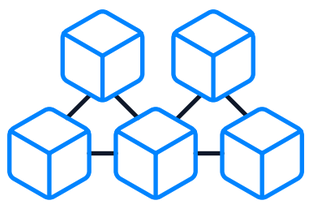
It is characterized by its:

- Support for widely recognized standards, including ERC-20 (fungible token), ERC-721 (non-fungible token), and ERC-2771 (meta transactions).
- Well-known addresses that can be called on-chain to receive information about Consortium functionality, including KYC and KYB address certification status.
- Seamless transition and integration capabilities, allowing dApps and Solidity smart contracts from other EVM-compatible chains to be effortlessly onboarded.

Developers will find a familiar environment here, with Camino Network's comprehensive support for established development tools like Remix IDE, Solidity, Vyper, Truffle, and Hardhat. The only difference is that addresses interacting with the chain for deployment need to be KYC-verified prior.

CHAPTER 3

Technology Stack



The Exchange Chain (X-Chain)

As in Avalanche, the X-Chain uses a Directed Acyclic Graph (DAG) structure, enabling efficient transaction processing. A DAG allows transactions to flow in one direction without cycles, making it suitable for handling complex transactional data and facilitating concurrent processing of non-conflicting transactions and high throughput. However, the partial ordering of the DAG complicates integration with complex functionalities, so its primary utilization is the transfer of tokens among Camino users. The X-Chain's unique architecture represents a blend of innovation and complexity, marking its distinct role in the Camino ecosystem.

In a nutshell, it offers:

- Swift transaction processing: The acyclic nature of DAG enables parallel transaction confirmations, boosting the speed of asset creation, management, and exchange.
- Enhanced security: By design, DAGs deter double-spending attacks, as transactions are affirmed by their subsequent ones, fortifying the chain's integrity.
- Efficiency: The X-Chain’s DAG structure reduces redundancies, ensuring smoother and faster transaction pathways.

CHAPTER 3

The Camino Messenger

Decentralized foundation

Prioritizing security and efficiency, Camino Messenger operates on a decentralized communication system. It utilizes the Conduit Matrix Server as a compact and efficient chat server component.

Conduit is an open-source server built on the Matrix Specification and is known for its easy setup and minimal system requirements. The Matrix Specification, in turn, describes the protocol of an open network for secure and decentralized communication. Developed in Rust, Conduit is notable for having a light footprint due to its single-binary design with an embedded database, offering faster performance compared to other server implementations. It enables secure, decentralized communication across different home servers, with the capability to bridge with external platforms. Conduit is ideal for quick deployment in diverse environments, particularly where simplicity, speed, and low resource utilization are key requirements.

Bot as the on/off-chain glue

The Camino Messenger Bot handles the smart contract calls and the Matrix client, extending the latter by:

1. Enabling login by wallet addresses associated with distributors and providers.
2. Associating micropayments to calls based on a cheque/cash-out logic, taking into account SLA enforcement on message exchanges.
3. Providing high availability and redundancy across servers deployed alongside blockchain nodes.
4. Minting NFTs for bookings.

While being currently implemented on the Matrix communication protocol and Conduit server, Camino Messenger's design embraces adaptability, allowing for potential transitions based on future technological advancements. Such transitions will happen at no further integration cost for the surrounding distributor and supplier's systems: the Bot is designed to hide the Messenger internal structure and even any smart contract calls from calling systems that should not concern themselves with internals but only with translating their message into the Camino Messenger protocol.

Camino Messenger protocol

Messages are exchanged between distributors and providers of touristic inventory with the "Camino Messenger Protocol," a pioneering standard in travel communication developed using the robust and efficient Protobuf (Protocol Buffers) system.

Protobuf, a cutting-edge technology created by Google for structuring and serializing data, ensures that messages sent between travel businesses are lightweight, fast, and accurately structured and interpreted, resulting in more reliable and efficient communication compatible with the traffic volumes generated by the major travel industry players.

Whether it's regarding sharing availability, rates, or specific travel package details, this protocol ensures that all necessary information is communicated rapidly in a clear, consistent, and reliable format. This is opposed to messages in the travel industry currently exchanged using verbose APIs and loosely enforced standards, often customized on a one-to-one basis.

Capabilities discovery

Message standards are established and voted on by the Consortium members. Bound to the Partner Showroom, a configurator enables partners to describe which message standards it implements and relevant meta-information such as credentials to access legacy APIs, cost of calls, etc.

CHAPTER 3

Redefining Touristic Interactions and Standards with Camino Messenger

Connect to one, connect to all

Specifically engineered for the travel industry's unique demands, the Camino Messenger offers a streamlined approach to travel-related transactions and communications and implements a decentralized communication platform providing travel companies with:

- **Search**: OTAs can effortlessly discover diverse touristic products, simplifying their sourcing process.
- **Book**: Experience frictionless booking, reducing administrative burdens and ensuring immediate confirmations.
- **Setup**: Camino Messenger simplifies integration through a one-time protocol implementation, connecting businesses to multiple providers. It streamlines the setup process with an intuitive interface, eliminating the need for complex API customizations and enabling a smooth, unified entry into the global travel network.
- **Decentralized foundation**: Prioritizing security and efficiency, Camino Messenger operates on a decentralized communication system.
- **Protobuf-powered messaging**: Camino Messenger utilizes Protobuf, a structured and universally recognized protocol, to considerably reduce message size — up to five times smaller compared to gzipped XML messages. This reduction leads to significant bandwidth savings for both providers and distributors, enhancing the efficiency and cost-effectiveness of transactions within the travel network.
- **Streamlining operations and reducing cost**: With a standardized way of exchanging information, companies can spend less time on clarifying details and more on developing their products and services. Moreover, the efficiency brought by this protocol translates into reduced operational costs, benefiting businesses of all sizes.

Global travel standard

The Camino Foundation is engaging Consortium members to collectively define standards for the payload of message types coded in Protobuf and transiting on the Camino Messenger. Standards are proposed by groups of members, expert in specific areas, and then approved by the Consortium with a public on-chain vote.

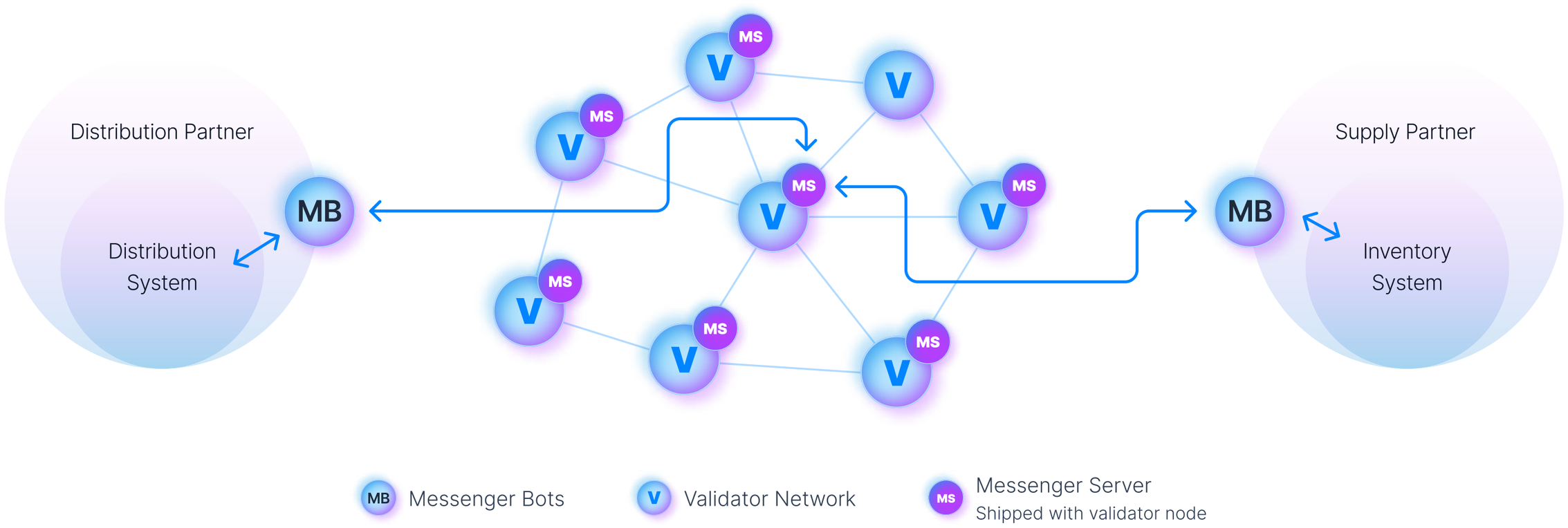
At time of writing, the following message types have been defined:

- `Partnership`
- `Hotel only`
- `Flight only`
- `Flight status information`
- `Entry requirements & destination information`
- `Tickets & excursions`
- `Vacation rentals`
- `Product descriptions`

The message types that will follow are:

- `Packages`
- `Rail`
- `Cruise`
- `Car rental`
- `Transfer`
- `Insurances`
- `… and others`

By integrating with the C-Chain, Camino Messenger not only leverages the chain's inherent strengths but also positions itself as the go-to platform for OTAs and travel businesses seeking to thrive in the digital age.



CHAPTER 3

Forking Avalanche and Creating a L1 Specialized for the Travel Industry

Detailed technical analysis resulted in the selection of Avalanche as the base blockchain for Camino Network. Avalanche was chosen for its scalability and adaptability, features necessary for coping with the changing requirements of travel businesses. Additionally, its strong security protocols are critical in the travel sector, where safeguarding data and transactions is essential. Finally, code structure and documentation quality were also considered prerequisites for a smooth evaluation and incorporation of subsequent Avalanche evolutions.

The subsequent step involved adapting Avalanche's technology in order to meet the specific needs of travel and travel tech companies within Camino Network. The following table recaps in brief what sets Camino Network apart from "vanilla" Avalanche, as presented in the rest of this chapter (Ava Labs, n.d.):

Camino Network's specifications to Avalanche's code

	Avalanche	Camino Network
Consensus	Proof of Stake (PoS)	Proof of Stake and Authority (PoSA), with required KYB for validators
Compatibility	EVM compatible, supports Ethereum-based smart contracts	EVM compatible, supports Ethereum-based smart contracts, access to off-chain functionality via well-known contracts
KYC	Not mandatory	Mandatory KYC process for developers deploying smart contracts
Transaction fee	Variable transaction fees	Fixed transaction fees (with option for validators to vote on base fee alteration proposals)
Industry focus	Broad applicability across industries	Specialized for travel industry with tailored features
Data standards	General blockchain standards	Travel data standards for unified communication in travel via Camino Messenger

CHAPTER 3

Quantum Readiness of Camino Network

As the travel industry evolves with the tide of technological advancements, so does the infrastructure that supports it. Camino Network, rooted in the adaptable Avalanche architecture, recognizes the looming quantum computing horizon and its implications for cryptographic security. With this foresight, Camino Network ensures it is modern and future-resistant. Here is how Camino Network is positioning itself to be "Quantum ready":

Modular and adaptive foundation

Forked from Avalanche, Camino Network retains its inherent modular structure. The platform is designed to support custom subnets, offering the freedom to incorporate quantum-resistant cryptographic solutions once they are mature and industry-tested. This modularity means that as the quantum landscape evolves, so can the cryptographic methods within our subnets.

Customizable VM deployments

One of the cornerstones of our adaptability is the capability to deploy custom Virtual Machines (VMs). These VMs can be crafted to utilize post-quantum cryptographic algorithms. Any applications or platforms under the Camino umbrella using these VMs would be fortified against quantum threats, keeping travel industry data secure and robust.

Commitment to future-proofing

In an industry as dynamic as travel, being prepared for the future is not just a perk but a necessity. Camino Network's foundational principle aligns with this. We emphasize constant evolution, ensuring we are not only in tune with current technological advancements but are also poised to integrate emergent cryptographic standards, including those offering quantum resistance.

Collaborative research and development

Camino Network is more than just a technological entity; it is a Consortium of industry stalwarts and visionaries. We actively engage with both the crypto-community and the quantum computing field. This collaboration ensures we stay abreast of developments and are primed to integrate quantum-resistant measures proactively.

In conclusion, while "Quantum ready" and "Quantum-resistant" might seem interchangeable, they carry distinct meanings. Being "Quantum ready" is our pledge to the travel industry that Camino Network is equipped and eager to adapt to quantum challenges as they arise. The network is not just reactive but proactive, ensuring that the travel industry's blockchain infrastructure remains secure, resilient, and ahead of the curve.

CHAPTER 4

Tokenomics

CHAPTER 4

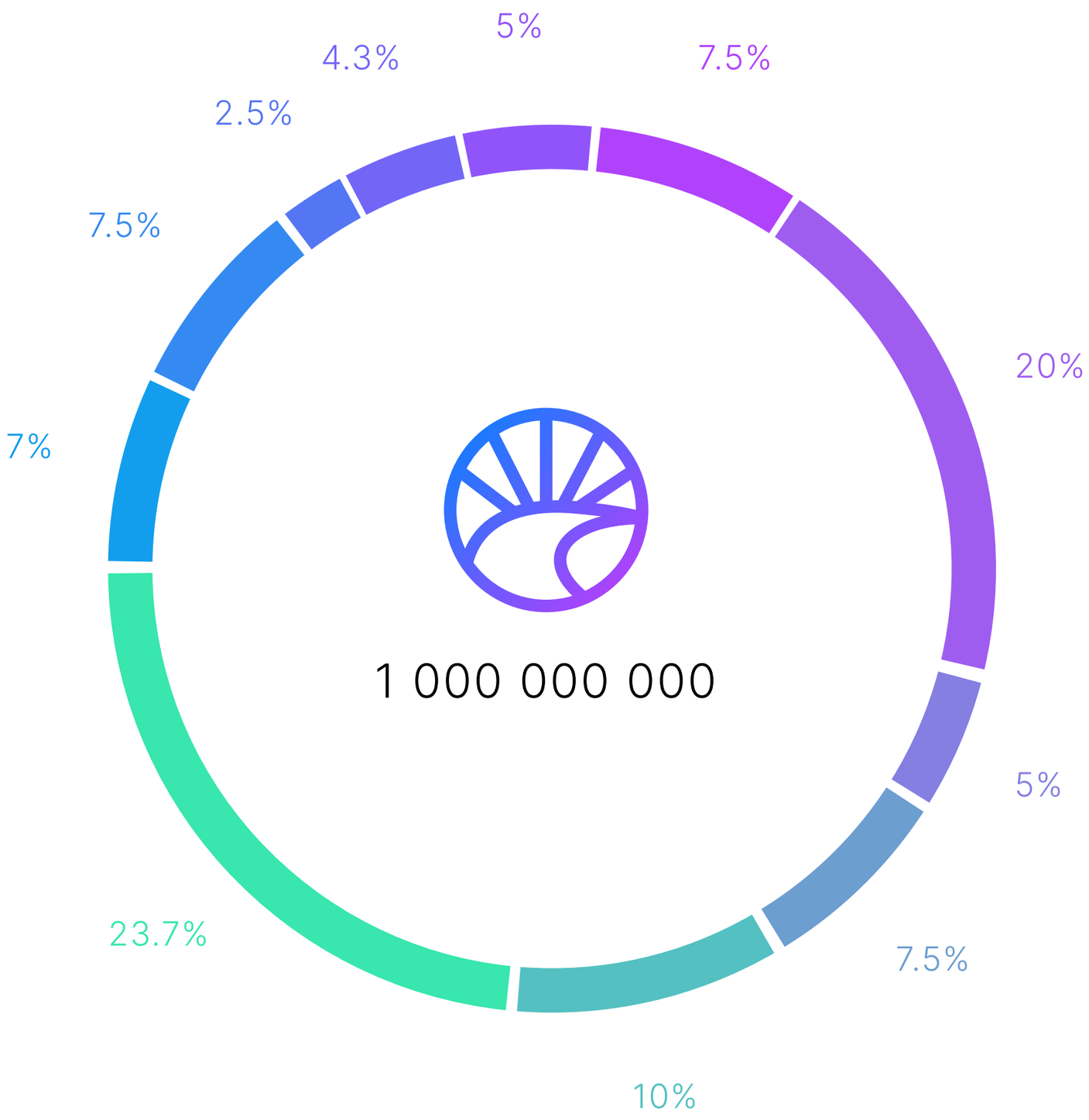
Token Economy

Structured with the dual goals of fostering development and incentivizing active participation, Camino Tokenomics aim to finance the network's continued development.

The CAM total supply is 1 billion tokens, of which 900 million were minted and allocated in batches from Genesis time (October 31, 2022, 12:00:00 UTC) until the Camino mainnet go-live, which happened on April 26, 2023. At go-live, the first Validator nodes were spun up by Chain4Travel AG on behalf of the Camino Network Foundation. The first Validator nodes run by the travel industry promptly aggregated, to ensure from the onset that no single entity has the power to steer consensus or otherwise single-handedly influence the network.

Some CAM tokens have associated rights for holders who have decided to proceed with their deposit/lock/bond. Camino Network has outlined rewards to incentivize long-term commitment, recognizing the importance of active and trusted members.

The remaining 100 million CAM tokens were left unminted and are destined to fund such rewards: these tokens are newly minted upon reward claiming.



23.7%	Reserve	237 000 000 CAM
20%	dApp Incentive Pool	200 000 000 CAM
10%	Reward Pool	100 000 000 CAM
7.5%	Second Sale	75 000 000 CAM
7.5%	IEO	75 000 000 CAM
7.5%	Team	75 000 000 CAM
7%	Founders	70 000 000 CAM
5%	Marketing	50 000 000 CAM
5%	Pre-Sale	50 000 000 CAM
4.3%	Seed Investment	43 000 000 CAM
2.5%	Advisors	25 000 000 CAM

CHAPTER 5

The Vision Becomes Reality

Use cases for Camino Network span multiple travel verticals and directions and provide the foundation for future user experience developments. Camino Network enables travel companies to streamline operations, make use of emerging technologies like AI, innovate business models, and forge valuable partnerships.

The agnostic nature of blockchain is suitable for all kinds of use cases which many companies are currently exploring with high impact on the end customer and contribute to an enhanced and personalized customer experience equipped to cater for the new generation of travelers.

CHAPTER 5

Web3 Use Cases for Travel

Distribution

Today

The travel industry is facing a long-standing problem, namely the issue of technology fragmentation. The industry currently operates with a multitude of different and complex connections to business partners across the industry, reaching from airlines and car rentals to hotels. This makes processes complex and costly. Today’s travel industry functions via multiple distribution channels and API connections which create frictions, incur higher costs for connection, demand the integration of many different systems across the industry and thus require many “handshakes” to be made. The systems of today neither offer flexibility in terms of integration of new distribution channels nor information of changes to trading information.

Tomorrow

The introduction of Camino Messenger marks a groundbreaking shift in the travel industry's approach to direct distribution. With leading international hotels, flights and tour operators expressing a strong interest in this innovative solution, Camino Messenger is set to redefine the way information is exchanged in the travel ecosystem. Camino Messenger enables seamless, end-to-end encrypted messaging between partners without the need for prior contracts, complex IT projects or extensive due diligence. Camino Messenger's versatility also extends beyond pricing and availability data. For instance, it is able to perform tasks ranging from decoding hotel codes to providing comprehensive flight information being agnostic to the sent message. Camino Network offers a new way of peer-to-peer connectivity with a single API and global standard of travel data. This reduces the cost of travel distribution with blockchain technology. Smart contracts merge the reservation and payment into the same transaction and automate the process. This streamlines distribution processes and enables completely new trading models like C2B or even C2C.

Ultimately, the multitude of possible applications and opportunities differentiates Camino Messenger from current processes as Camino Messenger paves the way for a true "connect to one, connect to all" solution.

- reduce APIs
- connect seamlessly
- increase automation

Payment and settlement

Today

Consider the complexity of selling a single travel package. It requires navigating multiple systems, managing contracts, and coordinating with partners. Manual adjustments for cancellations result in additional losses, further squeezing already thin margins.

Tomorrow

Web3 technology provides a solution through smart contracts that automate these manual processes. Smart contracts ensure seamless payments, handle service confirmations, and can efficiently manage changes or cancellations. What's more, when a transaction closes, smart contracts automatically distribute commissions to third parties, simplifying the settlement process.
It is easy to imagine the complexity of billing for a package tour operator selling through traditional travel agents or online affiliates. A travel agent or affiliate must pay the tour operator for the bookings made in advance of the travel dates, for the correct amount of bookings, including all changes and updates.

Once each booking and change is an on-chain transaction, this process is fully automated according to the smart contract. The blockchain stores the transaction details as a ledger, accessible to authorized parties as encrypted metadata or in a private store such as IPFS or Swarm.

This process becomes even more complex when you consider that travel agents and affiliates also settle their commissions in the same month, but for the bookings that were traveled in the previous month. Again, the fully automated and transparent process is a huge efficiency improvement for both parties and eliminates delays in the transfer of substantial amounts due to disputes.

And of course, the tour operator needs to pay for the flight, accommodation, transfer or car rental, and possibly ancillary services or excursions to various providers, which can again be fully automated in partnership smart contracts, eliminating (virtual) credit card fees, bank transfer fees, disputes, reconciliations, delays and manual work

- streamline payment processes
- reduce manual effort
- minimize financial risk

CHAPTER 5

The Traveler's Journey of Tomorrow

Loyalty

Today

Loyalty programs play a critical role in the travel industry, offering companies the opportunity to attract and retain customers (Murali et al., 2020). However, current loyalty programs involve a variety of time-consuming and ineffective approaches. For example, the process of adding partners to a loyalty program requires complex credibility checks and time-consuming due diligence. Airlines often distribute in-flight vouchers to a defined set of customers, incurring fees for each voucher regardless of whether it is redeemed.

Tomorrow

Blockchain technology offers solutions for voucher and loyalty management in the travel industry. The solutions cover a variety of current issues and help make future processes more effective and efficient. On Camino Network, dApps and platforms are being developed where travel agencies can integrate customizable web widgets into their booking engines to include vouchers. These vouchers can then be sourced either through traditional Web2 APIs or directly as NFTs. Partners can be easily added and onboarded in a single transaction, providing a more efficient and secure process. In addition, the use of Non-Fungible Tokens (NFTs) can increase end-customer loyalty.

- seamless integration and interoperability
- automate loyalty program terms and conditions
- reduced cost of setting up and maintaining a loyalty program

Personalization

Today

The travel industry is undergoing a seismic shift toward personalization, a trend driven by rising customer expectations. Until now, the maze of APIs and manual processes, compounded by the complexity and cost of data coordination, has hindered the industry's ability to deliver true personalization.

Tomorrow

Through Camino Network's peer-to-peer connectivity, however, travel companies can now create customized products based on travelers' digital footprints derived from transaction histories securely stored in customers' crypto wallets. This innovative approach finally bridges the gap between supply and individual interests, search preferences and desires at scale.

By combining the end user's transaction history and collected assets in their wallet with anonymous, AI-supported profiling, a new era of personalization is about to halt the exponential deterioration of look-to-book ratios and eliminate the need to search through thousands of irrelevant travel results to find those few interesting offers.

- analyze travelers' digital footprints
- offer real personalization to customers
- streamline revenue management with wallet rates

Identity

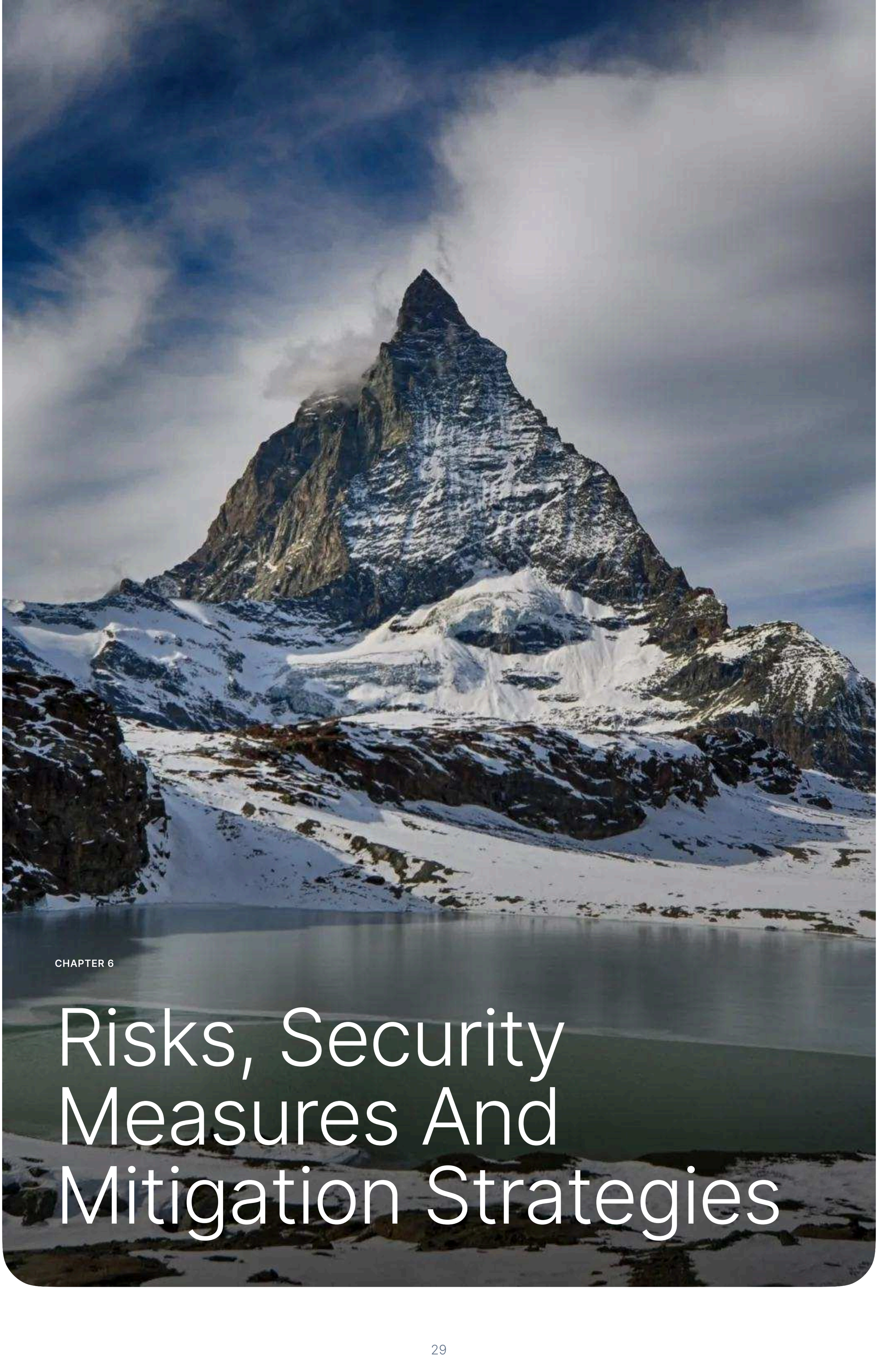
Today

Along the entire travel supply chain, the industry relies on identity verification to ensure travelers safety and security and comply with regulatory requirements. Besides the need for travelers to provide a vast amount of personal information to various parties throughout the travel process, the current process can be slow, inefficient, and vulnerable to fraud.

Tomorrow

Self-Sovereign Identity (SSI) enables individuals to create a digital identity, ushering in a new era of data management. It gives travelers more control over their personal information. They can choose what information they want to share with which organizations, from the bare minimum to their entire digital footprint, for the highest level of personalized experience. This reduces the need for companies to store sensitive records and reduces the risk of data leakage. In addition, the digital identity can be used to quickly and easily verify a traveler's identity with various players and services throughout the travel process, such as airlines, airports and hotels.

- streamlines the identity verification process
- enhances the overall travel experience by reducing wait times
- shifts the control of personal data back to travelers



CHAPTER 6

Risks, Security Measures And Mitigation Strategies

CHAPTER 6

Risks, Security Measures and Mitigation Strategies

Camino Network, a specialized L1 blockchain dedicated to the travel industry, operates with the backing of the travel industry and the Camino Network Foundation. It underscores the importance of Know Your Customer (KYC) for all smart contract deployments and Know Your Business (KYB) for every validator. In doing so, the network seeks to forge a secure and compliant environment tailored for travel sector stakeholders.

Risks associated with crypto-assets and technology

Like any groundbreaking technology, Camino Network and its associated crypto-assets are not entirely devoid of risks. These include potential technological vulnerabilities, fluctuations in crypto-asset values, and the evolving nature of regulatory landscapes. However, through our extensive security measures and vigilant risk mitigation strategies, we aim to address these concerns head-on, always safeguarding all stakeholders' interests.

Security measures

Camino Network recognizes the criticality of robust security measures to safeguard its infrastructure and user assets. The following security measures have been implemented:

1. Consensus protocol: Employing a potent Proof of Stake & Authority (PoSA), Camino Network ensures blockchain integrity and immutability while negating the risks of undue centralization or malicious intrusion.
2. Network security: Best-in-class network security tools, like firewalls and intrusion detection systems, are in place. Regular security audits, combined with advanced monitoring tools such as Grafana, aid in repelling potential network threats, thus securing nodes and data transmission.
3. Secure smart contract deployment: Enforcing KYC and KYB verifications for smart contract deployments reduces the probability of malicious intentions. This protocol fosters a sense of accountability and curtails the possibility of unauthorized actions.

Risk mitigation strategies

In addition to the implemented security measures, Camino Network employs a range of risk mitigation strategies to address potential vulnerabilities and challenges:

1. Comprehensive auditing: Routine audits are conducted not just for smart contract codes but also for integral components of the infrastructure including 'caminogo', 'camino-node', and 'camino-wallet'. These evaluations are performed by third-party security experts proficient in blockchain technology, guaranteeing a comprehensive review of Camino's security ecosystem. For an in-depth insight into our most recent audit across these components, click here to access the complete audit report, illustrating our technological soundness and risk precautions.

2. Bug Bounty program: Championing a proactive security stance, Camino Network's bug bounty program incentivizes experts and community members to uncover and report system vulnerabilities, fostering ongoing platform refinement.

3. Compliance and regulatory frameworks: Camino Network adheres to established compliance and regulatory frameworks applicable to the travel industry. By integrating relevant regulatory requirements, such as anti-money laundering (AML) and counter-terrorism financing (CTF) measures, the platform aims to foster trust and ensure adherence to legal obligations. Camino Network complies with the regulations that apply to blockchain and crypto assets that are not directly related to the travel industry, but to the technology of Camino Network and the Camino Token (e.g. MiCA, FCA, US and UK regulations, etc.). Further, the Foundation ensures that all applications of the participating companies in Camino Network do not violate any regulations applicable to them and potentially have a negative effect on the reputation of the network.

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  d. units in a collective investment scheme;
  e. units in a business trust;
  f. derivatives of units in a business trust;
  g. any other security or class of securities; or
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Camino Network Foundation

Dammstrasse 16

CH-6300 Zug

Switzerland

hello@camino.network