Overview Document

V1

Contents

Executive Summary

COTI is a payments transaction network supported by a native digital currency. Purpose-built to solve the payments challenges of today, COTI will set the standard for how payments should work in the digital currency era. By combining the best of blockchain technologies with the best of traditional payments, COTI provides buyers and sellers everywhere with the easiest, most cost-effective and most reliable way to pay.

As internet connectivity becomes increasingly pervasive, and as transportation and communication costs decline, buyers and sellers are demonstrating a greater propensity to trade across borders, through online marketplaces and on a peer-to-peer basis. Yet despite the ease with which information, goods and services now flow, payments are still characterized by high fees, low approval rates and high abandonment rates. As a result of the friction imposed by existing payments solutions, the amount of trade occurring in the world today falls far short of its potential – to the detriment of individuals, merchants and the global economy at large.

Bitcoin broke new ground by introducing the world's first *trust-less* payments system – a system in which transactions are guaranteed by cryptographic proof rather than by trusted third-party financial intermediaries. And with its greater security, faster settlements, lower fees and greater transparency, Bitcoin provides a glimpse of what the payments solutions of the future may look like.

However, for various reasons, neither Bitcoin nor any of its digital currency peers have garnered widespread adoption in the context of day-to-day payments. When Bitcoin's pseudonymous creator, Satoshi Nakamoto, intentionally optimized for security, immutability and 'trust-lessness' at the expense of usability and scalability, he opened the void for a payments transaction network and digital currency that would later optimize for the common payments needs of typical consumers and merchants.

The COTI team was formed to fill this void. COTI combines the best of traditional payments systems with the best of digital currencies – while working around their respective limitations – to provide a comprehensive payments solution that optimizes for the needs of typical consumers and merchants above all else. With its emphasis on scalability, instantaneity, buyer-seller protections and ease-of-use, and on building trust-based relationships that drive down transaction costs to reach as low as zero, COTI is the payments solution that will propel digital currencies from a place of relative obscurity to the forefront of mainstream adoption.

COTI's overarching goal is to enable the free-flow of value in the same way that the Internet enables the free-flow of information. To this end, COTI is developing a variety of technologies that will work in concert to provide consumers and merchants everywhere with a vastly improved payments experience. COTI's development efforts are best understood through three prisms: its network core, its native currency, and its applications and services.

- **Network core.** The key components underpinning COTI's network include:
  - The **Trust Scoring Engine**, which automatically assesses the interactions between buyers and sellers over time, assigning each network participant with a unique Trust Score. Trust Scores

provide a numerical representation of the relative value that each participant contributes to the COTI network, and are updated dynamically in response to newly-available information. In addition to signalling trustworthiness to prospective counterparties, thereby increasing the propensity for parties to transact, Trust Scores serve as a key driver of transaction fees: high scores are associated with low-to-zero fees, while low scores are associated with comparatively high fees.

- The **Mediation System**, which resolves disputes between transacting parties and maintains the integrity of the network. A first of its kind, the system leverages data science, game theory and an independent network of crowdsourced mediators to resolve disputes fairly and efficiently – without prompting a material increase in transaction costs.

- The **Currency Exchange**, which provides network participants with a means of moving seamlessly between currencies – both fiat and digital – by aggregating liquidity from internal and external liquidity pools. The exchange is complemented by an automated market-maker which maintains fair and orderly markets in a range of currencies.

- **Native currency.** The COTI network's native currency, abbreviated as XCT, is a digital currency that serves as a means of collecting network fees, as a means of compensating mediators, and as a means of exchange between buyers and sellers. XCT was designed to overcome the scalability challenges associated with incumbent digital currencies, and will excel in common payments scenarios by supporting instant, zero-fee transactions. After first achieving widespread usage in direct network use cases (i.e., fees and mediation), XCT will have a robust foundation on which to become more widely-used as a means of exchange – and to become known as the **C**urrency **O**f **T**he **I**nternet. XCT's value will be inextricably tied to the growth of the COTI network.

- **Applications & services.** COTI is developing a suite of applications and services that will provide individuals, merchants and crowdsourced mediators with seamless connectivity to the COTI network. For consumers, the COTI wallet and virtual debit cards will facilitate the secure storage, transmission, and exchange of digital and fiat funds. For merchants, the COTI processing solutions will facilitate the acceptance of payments in a variety of fiat and digital currencies at substantially lower processing fees. And for mediators, the COTI mediator client will enable mediators to contribute to, and be compensated for, the successful resolution of transaction disputes.

COTI is laying the licensing foundations that will enable it to comply with existing regulations, both as a payments network and as a currency exchange. With respect to XCT and the handling of digital currencies more generally, the COTI team welcomes greater regulatory clarity and believes digital currency-specific frameworks will serve as a catalyst for the mainstream adoption of digital currencies. For this reason, COTI has entered dialogues with regulators globally to help shape their respective frameworks. In the interim, COTI is adopting banking industry compliance standards to ensure that its digital currency-related activities do not serve as a conduit for money-laundering or other illicit activity.

The COTI team includes veterans of the payments, cryptography, asset management and banking domains – with experience ranging from Processing.com, Markets.com and PAY.COM, to Investec Bank, BlackRock and HSBC. The team has set ambitious development targets and is on track to launch the first phase of the COTI network in the first quarter of 2018. Thereafter, COTI will build on its robust technical foundations to continue making payments universally easier, more cost-effective and more trusted for the benefit of buyers and sellers everywhere. Ultimately, COTI will make more trade possible by enabling the free-flow of value in the same way that the Internet enables the free-flow of information.

1. Context

Worldwide consumer payments transactions exceed $50 trillion annually and are increasingly carried out using electronic payment methods. Yet despite the intense competition within the payments industry, consumers and merchants face high fees and low approval rates. Digital currencies could represent a compelling alternative but – in their current form – are not practical to use in common payments contexts.

The way we pay for goods and services has changed dramatically over recent decades. Cash and cheques have gradually given way to electronic payment methods: in 2016, for the first time in history, cards surpassed cash as the leading method of payment globally. Yet despite the intensely competitive nature of the payment industry – with card networks, banks, digital giants and start-ups all vying to build or retain market share – existing payments solutions have not adapted to handle new payments scenarios effectively.

- **Cross-border e-commerce.** Cross-border B2C e-commerce will reach $1 trillion in annual transaction volume by 2020[1], the clear majority of which will be paid for using cards. However, as a consequence of the four-party model adhered to by the major card networks, transactions involving card issuers and card acquirers located in different regions are inherently less reliable than equivalent domestic transactions. Cross-border card payments are encumbered by higher fees, higher abandonment rates, and lower approval rates relative to domestic transactions. For U.S.-based merchants, cross-border transactions are 2-3 times more likely to be declined relative to domestic transactions[2], and some 31% of declined transactions turn out to be false positives[3].

- **Online marketplaces.** Online marketplaces connecting buyers and sellers can work with existing payments solutions to an extent. However, key functions normally handled by the card networks – e.g., dispute resolution – need to be administered internally by the marketplace operators. The internalization of these functions adds considerable operational overhead to each marketplace, and raises the barriers-to-entry to would-be competitors. Moreover, marketplaces that lack the capital or appetite to manage the operational burden of internalizing these key functions are unable to offer payment capabilities to their marketplace participants.

- **Peer-to-peer commerce.** Numerous non-bank service providers offer solutions for peer-to-peer (P2P) transactions. These services handle the money transfer aspect of P2P transactions effectively, but their use is confined primarily to transactions that involve trusted parties. These services fail to account for the conformity and delivery of goods or services; rather, they focus solely on the authorization, clearing and settlement of money transfers. As such, they are not complete payments solutions, and are not suited to accommodate P2P commerce involving parties that do not know each another and may never transact again.

[1] Digital Globalization: The New Era of Global Flows, McKisnsey Global Institute, March 2016.
[2] https://www.ethoca.com/node/125
[3] True Cost of Fraud Study, LexisNexis, 2016.

The shortcomings faced by existing payment solutions when handling these new payments scenarios are attributable to one key factor: the lack of trust. In cross-border e-commerce, the lack of trust between issuers and acquirers located in different jurisdictions results in high fees and low approval rates. In online marketplaces, the long-tail distribution of merchants results in the need for marketplaces to internalize costly mediation functions normally administered by the card networks. And in P2P transactions, the lack of trust between parties that do not know one another inhibits the growth of P2P commerce. Universally, the lack of trust represents a major source of friction inhibiting buyers and sellers everywhere from transacting to their fullest potential.

The unfulfilled promise of digital currencies

Bitcoin inventor Satoshi Nakamoto released *Bitcoin: A Peer-To-Peer Electronic Cash System* in late 2008[4]. In the paper, Nakamoto was critical of the trust-based model upon which existing electronic payments systems relied, pointing out that the trust-based model requires a costly mediation layer that causes merchants to be wary of their customers. Nakamoto's solution was to propose a new electronic payment system, Bitcoin, that would enable two parties to transact directly based on cryptographic proofs alone – without the need for trusted third parties.

Blockchain-based payment systems – including Bitcoin and its peers – are often described as *trust-less* in acknowledgement of the fact that these systems can function without trusted third parties. Transactions in such networks are recorded cryptographically on distributed, secure, irrevocable ledgers, and ledger accuracy and consistency are ensured through the consensus process. Rather than placing their trust in third-party intermediaries, users of these transaction networks put their trust in cryptographic protocols and the plurality of network participants.

Some members of the blockchain community have rallied behind the notion that digital currencies will become widely used as currency in everyday payments scenarios. Blockchain-based currencies like Bitcoin, it has been argued, provide a low-friction alternative to the traditional payments system: they promise greater security, faster settlement times, lower transaction fees, and relief from the interference of central banks and intermediaries.

Rather than placing their trust in third-party intermediaries, users of these transaction networks put their trust in cryptographic protocols and the plurality of network participants.

In practice, however, the use of digital currencies in everyday payments scenarios has been limited. According to Morgan Stanley, merchant acceptance of Bitcoin, today's leading digital currency by market capitalization, will decline in 2017[5]. The limited adoption of Bitcoin in everyday payments scenarios is attributable to a variety of factors, as detailed below.

[4] Bitcoin: A peer-to-peer electronic cash system, Satoshi Nakamoto, 2008.
[5] https://www.bloomberg.com/news/articles/2017-07-12/bitcoin-acceptance-among-retailers-is-low-and-getting-lower

- **Scalability.** As the Bitcoin network has grown it has faced severe network congestion, giving rise to higher fees and slower settlement times. The network currently scales to handle in the order of 20 transactions per second relative to Visa's 65,000 transactions per second[6].

- **Speed.** Transaction confirmation speeds on the Bitcoin network are typically slow, often lasting longer than 15 minutes.

- **Legality.** Bitcoin has been accused of facilitating illicit transactions and large-scale money-laundering, and is at risk of being reigned in by new regulatory frameworks globally.

- **Third-party vulnerabilities.** Although the Bitcoin network itself has never been compromised, a number of Bitcoin exchanges, which enable individuals to exchange fiat currency for Bitcoin, have been hacked. These hacks have resulted in the loss of hundreds of millions of dollars' worth of Bitcoin.

- **Volatility.** Merchants that accept Bitcoin face a high degree of exposure to fluctuating exchange rates. Moreover, the appreciation in Bitcoin's value is prompting Bitcoin owners to retain their holdings rather than to use them for payments.

- **Immutability.** Although a strength from a security standpoint, the finality and irreversibility of Bitcoin transactions limit the currency's utility in general payments contexts.

- **Complexity.** For typical consumers, the processes involved in acquiring and spending Bitcoin are too complicated; new users of the currency face a significant learning curve.

Perhaps the single biggest impediment to Bitcoin and its peers in becoming widely adopted in day-to-day payments is the fact that they solve only part of the payments challenge: While Bitcoin can successfully confirm that a payment has been made, it is unable to account for the conformity and delivery of the goods or services associated with the payment. The Bitcoin blockchain can rely only on data from within the Bitcoin ecosystem, without taking external data into account.

Bitcoin and its peers can, in their current form, serve as cryptographically-secure cash layers. But in order to cross the chasm and become widely used in day-to-day payments, digital currencies will need to be extended to offer the consumer and merchant protections that are now commonplace in the payments industry. For example, the major card networks allow for the correcting of billing errors, the reversal of unauthorized charges, and the issuance of refunds to purchasers who do not receive the goods or services that they pay for. Each of these provisions serve to instil greater peace-of-mind in consumers and merchants, driving their adoption of, or continued participation in, existing payments networks. Interestingly, in the Bitcoin whitepaper, Nakamoto foresaw the need for buyer protection mechanisms. Yet, in its current form, the Bitcoin network offers no such mechanisms.

•••

As transportation and communication costs decline, and as internet connectivity becomes increasingly pervasive, new forms of commerce are enabling buyers and sellers to exchange value with less friction than ever before. A great deal of potential trade is not being realized, however, due to the trust deficiencies which characterize existing payments solutions. While digital currencies have the potential to facilitate payments with greater security and lower transaction fees, a variety of factors inhibit their uptake in payments use cases – chief among which is the fact that they function as cash layers rather than as complete payments solutions.

[6] https://www.visaeurope.com/newsroom/global-news/detail?id=2288776

2. Objectives

The COTI team was formed around the shared goal of developing a next-generation payments network that would go on to become widely adopted by buyers and sellers, serving as a catalyst for the mainstream adoption of digital currencies in payments use cases.

COTI began by looking at the key factors affecting the pace and extent of payment system adoption, and concluded that the next-generation payments network would need to build on top of the foundations of traditional payments systems and digital currencies, incorporating their strengths while finding workarounds for their limitations.

Using the characteristics of traditional payments systems and pioneering digital currencies as benchmarks, the team defined the key objectives that its next-generation payments network would need to satisfy. The objectives are summarized in *Exhibit 1: Requirements for a next-generation payments network*, and discussed in detail in the pages that follow.

Throughout this section, references to 'digital currencies' are to be taken as references to Bitcoin. While COTI acknowledges that the characteristics of alternative digital currencies vary widely, Bitcoin's dominance in terms of its total coin capitalization makes it the natural reference point when evaluating digital currencies as a category.

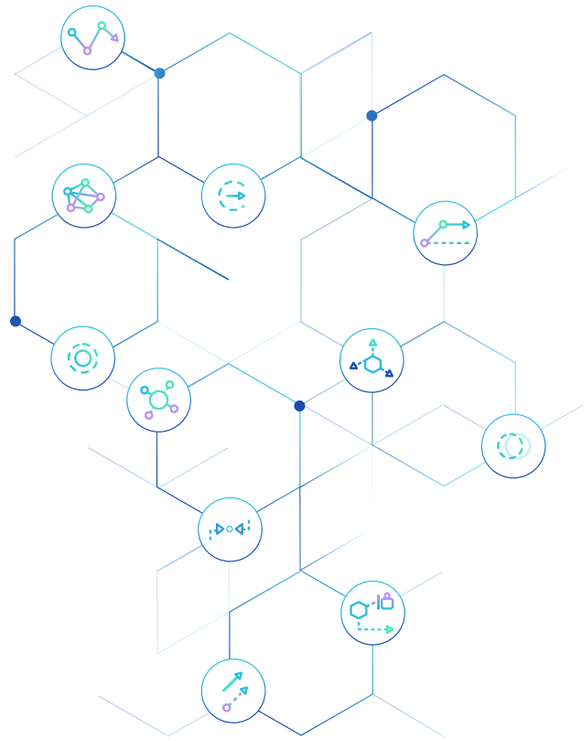


EXHIBIT 1

Requirements for a next-generation payments network

Factor	Status Quo		COTI's Objective	Further Reading
	Card Networks	Digital Currencies		
Trust model	• Trust-based (reliant on trusted 3rd parties)	• Trust-less (not reliant on trusted 3rd parties)	• Trust-generative	• 3: Network Core • 4: Native Currency (XCT)
Buyer-seller protections	• Centralized • Costly	• None	• Decentralized • Efficient	• 3: Network Core
Scalability	• ~65,000 TPS[7] • Instant confirmation	• ~20 TPS • ~15 min. confirmation	• 10,000+ TPS • Instant confirmation	• 3: Network Core • 4: Native Currency (XCT)
Transaction costs	• High-cost • Based on broad categories	• Typically low-cost	• Zero-to-low cost • Based on behaviour	• 3: Network Core • 4: Native Currency (XCT)
Approval rates	• Low, particularly in cross-border contexts	• High	• High, irrespective of industry or jurisdiction	• 3: Network Core
Ease-of-use	• Easy for buyers and sellers	• Complicated for most buyers and sellers	• Easy for buyers and sellers	• 5: Applications & Services
Universality	• Widely-accepted and held	• Narrowly-accepted and held	• Clear path to wide adoption	• 5: Applications & Services
Multi-currency support	• Fiat only	• No, limited to networks' native digital currencies	• Digital and fiat	• 3: Network Core • 5: Applications & Services
Compliance	• Fully-compliant	• Largely unregulated	• Fully-compliant • Welcoming of regulation	• 6: Regulatory Approach
Transparency	• None	• Transparent	• Transparent	• 4: Native Currency (XCT)
Governance	• Centralized	• Decentralized	• Semi-decentralized • Path to full decentralization	• 4: Native Currency (XCT)

[7] Transactions-per-second

Objective 1: Trust-generative

The next-generation payments network should build trust between transacting parties, giving buyers and sellers greater insight into their parties' intentions, and capacities, to fulfil their obligations.

- **Status quo.** Card networks transactions rely on trusted financial intermediaries to serve as a proxy for direct trust between transacting parties. Digital currencies are trust-less insofar as their cryptographic protocols provide surety with respect to the movement of funds, but they function merely as a cash layer rather than as a complete payments solution.

- **COTI's approach.** COTI will build trust between transacting parties. It will achieve this by automatically assessing the trustworthiness of all network participants, and by assigning each participant with a score that signals to potential parties the degree to which that party can be relied on to carry out transactions in accordance with the agreed terms.

Objective 2: Buyer and seller protections

The next-generation payments network should provide buyers and sellers with protections against errors or fraud.

- **Status quo.** Card networks make provisions for resolving disputes and handling complaints. But these mediation services are costly and result in higher transaction costs. Digital currencies consider only the funds transfer aspect of transactions; they do not take the conformity or delivery of goods and services into consideration.

- **COTI's approach.** COTI will resolve errors and fraud through an efficient, fair mediation system that accounts for the conformity and delivery of goods, in addition to the underlying transfer of funds. COTI's system will avoid driving up transaction costs by employing advanced data science and a distributed network of mediators.

Objective 3: High-scalability

The next-generation payments network should be capable of processing hundreds of millions of transactions per day, and should achieve this without compromising accuracy or security.

- **Status quo.** Card networks have the capacity to process in the order of 65,000 transactions-per-second (TPS) with all payments being confirmed instantly. Digital currencies can process in the order of 20 TPS and have variable confirmation times, often lasting ~15 minutes.

- **COTI's approach.** COTI will be able to handle a high throughput of transactions from the outset, initially in the order of 10,000 TPS, and its architecture will be able to scale to accommodate far higher throughputs. All transactions will be confirmed instantly.

Objective 4: Low-to-zero transaction costs

The next-generation payments network should ensure that transaction costs are kept to a bare minimum, and levied in accordance with each participant's individual contribution to the network.

- **Status quo.** Card networks typically levy various fixed and percentage-based fees to process a transaction, with additional fees being levied when cross-border and cross-currency transactions are involved. Moreover, merchants operating in high-risk industries or jurisdictions are subject to higher transaction fees, irrespective of their individual behaviours and risk profiles. Digital currency transaction fees are typically low yet vary widely depending on network congestion.

- **COTI's approach.** COTI will charge universally low fees and will levy no fees at all for transactions made using its native digital currency. Rather than having standardized fees for all network participants, COTI will ensure that the fees payable by each party are inversely proportional to their contribution to the network's fluidity: trustworthy, low-risk parties risk will always pay low-to-zero fees.

Objective 5: High approval rates

The next-generation payments network should enable sellers to achieve high approval rates. A buyer with the propensity and capacity to pay for an item should be able to complete the purchase without fail.

- **Status quo.** Card network transaction approval rates vary widely but are particularly low in cross-border contexts, where risk-averse fraud detection systems often reject worthy buyers. Digital currencies generally achieve high approval rates due to the lack of intermediaries.

- **COTI's approach.** COTI will enable sellers to achieve high approval rates by ensuring that every consumer with the capacity to pay is able to complete purchases. It will also support payment-on-delivery as a means of driving down cart abandonment rates.

Objective 6: Ease-of-use

The next-generation payments network should be easy-to-use for buyers and sellers – both during the transactional experience and when joining the network.

- **Status quo.** Card networks make the transaction process convenient for buyers and, for sellers, card acceptance is relatively forward. However, depending on the nature of the business involved, sellers may need to undergo lengthy onboarding procedures. In their current form, digital currencies are too complicated for the vast majority of buyers and sellers.

- **COTI's approach.** COTI will be easy-to-use for buyers and sellers alike. Buyers will be able to make payments intuitively, without first needing to traverse a steep learning curve. Sellers will be able to start accepting payments immediately after undergoing a streamlined integration process.

Objective 7: Universality

The next-generation payments network should have a clear pathway for generating strong network effects such that it can ultimately achieve widespread adoption among buyers and sellers. It should be able to co-exist with incumbent payments solutions, particularly in its early phases.

- **Status quo.** Card networks have extensive global reach, providing consumers with extensive access points, and providing merchants with a broad base of card-holding clients. Digital currencies are far from universal, both in terms of consumer adoption and merchant acceptance.

- **COTI's approach.** COTI will offer buyers and sellers compelling incentives to use COTI as a complement to, and ultimately a replacement for, existing payments systems. In the short-term, while COTI's reach is necessarily limited, COTI will leverage existing payments rails to kick-start network growth.

Objective 8: Transparency

The next-generation payments network should demonstrate network integrity by broadcasting anonymized transaction records into the public domain.

- **Status quo.** Card networks release high-level network activity data into the public domain. Digital currencies are fully-transparent: all transactions are stored on a public blockchain and network statistics readily available.

- **COTI's approach.** COTI will be open and transparent, making all ledger entries publicly accessible (without revealing the transacting parties' identities). External validators will be invited to run validation scripts to verify the ledger's integrity, and external developers will be invited to build on top of COTI's systems and data.

Objective 9: Multi-currency support

The next-generation payments network should enable network participants to transact using a variety fiat and digital currencies.

- **Status quo.** Card networks support virtually every fiat currency but are incompatible with digital currencies. Digital currency networks process payments only in their native digital currencies.

- **COTI's approach.** To accommodate the needs of buyers and sellers globally, COTI will support transactions in a wide range of currencies. Both fiat and digital currencies – including COTI's native currency, XCT – will be supported.

Objective 10: Regulatory compliance

The next-generation payments network should comply with the regulatory frameworks of all jurisdictions in which its users reside; moreover, it should enter dialogues with regulators regarding the development and introduction of digital currency-specific frameworks.

- **Status quo.** Card networks interoperate seamlessly with the existing banking and legal systems, and make strict provisions for complying with anti-money-laundering (AML) regulations. Digital currencies are pseudo-anonymous, uncensorable and largely unregulated.

- **COTI's approach.** COTI will be non-anonymous and strict on money-laundering, while still protecting user privacy. Rather than shying away from regulation, COTI will work with regulators internationally to help shape the regulatory frameworks that will govern the digital currency-related aspects of its activity.

Objective 11: Decentralized governance

The next-generation payments network should adopt a decentralized governance model that puts the decision-making authority in the hands of its network participants.

- **Status quo.** Card networks and all other entities operating within the traditional payments system adopt fully centralized governance structures. Digital currencies are decentralized and governed by the network participants, though generally must be initiated under a centralized (or semi-decentralized) governance model.

- **COTI's approach.** During the establishment phases, COTI will operate under a semi-decentralized governance model. COTI will transition to a fully decentralized model once the COTI community is sufficiently robust to handle governance responsibilities.

•••

The COTI team characterized the COTI payments network in light of the aforementioned objectives. The resulting system is comprised of several components, all of which will work together to provide network participants – consumers, merchants and mediators – with an effective means of contributing to, and benefiting from, the network:

- The **Network Core**, consisting of a trust scoring engine, a mediation system and a currency exchange, provides the foundational layer of the network (3: Network Core);

- The **Native Currency** serves as the unit of account and as a medium of exchange within the network, and can also be used in broader transactional scenarios (4: Native Currency (XCT)); and,

- A suite of **Applications and Services** for consumers, merchants and mediators provides end-user connectivity to the network (5: Applications & Services).

A summary of the network components and network participants is provided in *Exhibit 2: Components and participants of the COTI network* and details of these components are addressed in the sections that follow.

EXHIBIT 2

Components and participants of the COTI network

Network Components

Network Core

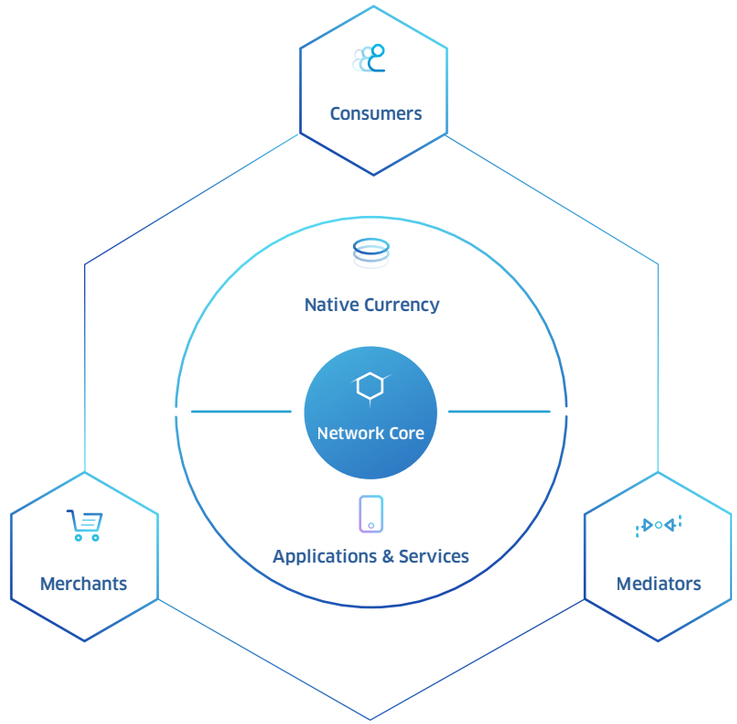
- Currency exchange, trust scoring engine and mediation system provide the foundations for the COTI payments network

Native Currency

- Digital currency purpose-built for the COTI ecosystem
- Serves as a unit of account and as a means of exchange

Applications & Services

- Cross-platform applications and services providing consumers, merchants and mediators with connectivity to the ecosystem



Network Participants

Consumers

- Engage in commerce with peers and merchants within the COTI ecosystem
- Acquire, exchange, and store digital and fiat currencies

Merchants

- Sell products and services to COTI wallet holders
- Accept payments in digital and fiat currencies while hedging against currency volatility

Mediators

- Contribute to dispute resolution and receive pay-outs when successful
- Help maintain the integrity of the COTI network

3. Network Core

The COTI network is underpinned by three core components: the Trust Scoring Engine, the Mediation System and the Currency Exchange. These components provide the base-layer scaffolding that COTI's applications and services are built upon.

3.1 Trust Scoring Engine

A key source of friction in commerce today is the lack of reliable metrics pertaining to the trustworthiness of a buyers and sellers. The difficulty in assessing the trustworthiness of prospective counterparties undermines confidence and reduces the likelihood of potential transactions being seen through to completion, particularly in cross-border scenarios.

While the reputation systems within online marketplaces address this problem in part, such systems tend to generate reputation scores based on user ratings alone, are subject to abuse by parties with vested interests, and are typically not transferrable to other marketplaces or contexts.

COTI takes a novel approach to building trust between transacting parties through its Trust Scoring Engine. The engine analyses network interactions over time to generate a unique Trust Score for each COTI network participant. The Trust Score metric embodies a participant's relative value to the COTI network, and serves as a proxy for how reliable a participant will be in fulfilling transactions in accordance with the associated terms.

Determining Trust Score values

Trust scoring is performed in a granular, dynamic way to provide high resolution insight into a party's behaviour. This granular approach runs contrary to conventional credit scoring systems, which use broad brush classification techniques to assign scores that commonly fall above or below the scores that would serve as true indications of creditworthiness.

Trust Scores are relative values plotted on a scale of 0 to 1 (0 to 100%), with 1 being the highest possible score. They provide an indication of how participants rank relative to one another within the COTI network, as measured by their contributions to the network's efficacy over time. Participants that engage in honest conduct, consistently honouring their obligations to other network participants, contribute to the healthy functioning of the network and are rewarded with high Trust Scores. Conversely, participants that engage in dishonest conduct, dishonouring obligations to other network participants, detract from the healthy functioning of the network and are assigned lower Trust Scores.

Using an approach broadly resembling how Google's search engine algorithms consider multiple parameters when determining the ranking of web pages for a specific search term, continuously adjusting the rankings as new information becomes available, the Trust Scoring Engine's algorithms consider multiple parameters when calculating Trust Scores:

- **Transaction value** refers to the value of transactions that the participant has engaged in over a recent period.
- **Dispute occurrence** refers to the number of transaction disputes that the participant has been involved in, if any.
- **Disputes won** refers to the number of transaction disputes that the participant has been involved in and that have been resolved in the participant's favour.
- **Disputes lost** refers to the number of transaction disputes that the participant has been involved in and that have been resolved in the other party's favour.
- **User ratings** refers to the ratings that other transacting parties have assigned to the participant, calibrated according to the Trust Scores of the parties providing the ratings.

The set of parameters outlined above is non-exhaustive. COTI's Technical Whitepaper provides further details of the mechanisms used to determine Trust Scores.

Equitable fee allocation

COTI leverages Trust Scores to determine the transaction fees that parties are required to pay when carrying out a transaction. This approach ensures that fees are calibrated according to the extent to which the transacting parties make a positive contribution to the COTI network: high-scoring parties pay lower fees relative to low-scoring parties.

Trust Scores pertaining to both the sender and the receiver of funds are taken into account when determining the total fees payable for a transaction. While sellers pay fees directly to the COTI network, buyers pay fees indirectly: buyer fees are added to the price of the product or service being purchased.

The aggregate transaction fees payable in any given transaction are comprised of four components, as detailed below. Although the COTI network's fee structure may appear complex, it is worth bearing in mind that traditional payments systems have similarly complex fee structures[8]. COTI will abstract this fee structure complexity from end-users during the payment process, while at the same time making precise breakdowns of transaction fees available to network users who are interested in understanding the details.

[8] Credit card fees can comprise of a plethora of transactional, flat and incidental fees.

- **Reserve credit fund fee.** As a substitute for the conventional rolling reserve model in which payments processors retain a percentage of a seller's inbound payments to compensate for the risk of refunds and chargebacks, COTI is establishing a network-wide reserve credit fund. The reserve credit fund is a pool of capital that the COTI network can draw upon if a transaction dispute goes through mediation and the seller is found to be at fault. A reserve credit fund fee is levied on all transactions in which the buyer and seller agree that the payment is to be settled at the time of purchase; this fee is calibrated according to the seller's Trust Score, to account for the likelihood that the transaction will result in a dispute that is ultimately resolved in favour of the buyer and will subsequently require a draw-down from the reserve credit fund.

- **Mediator fee.** Transacting parties pay mediator fees to cover the expected mediation cost that would be incurred by the COTI network in the event of a transaction dispute occurring. The mediator fee is determined based on the buyer and seller Trust Scores, while adjusting for the market dynamics of the mediator ecosystem at the time the purchase is made. In instances where there is short supply of mediators available to take on new caseloads, the mediator fee payable will be relatively higher that it would be in instances where there is an oversupply of mediators.

- **Market-maker fee.** Buyers and sellers are required to pay fees to compensate the market-maker for costs incurred in facilitating the transaction. Transactions involving straightforward currency exchange routing will incur lower market-maker fees relative to those involving more complex currency exchange routing. The market-maker fee is not levied on transactions that are sent and received using COTI's native currency.

- **Network fee.** In order to fund the network's administration costs, transacting parties are required to pay the COTI network a fixed percentage of the transaction's value. This fee is lower than the standard acquirer assessment domestic fees levied by the major card networks, and is not levied on transactions that are sent and received using COTI's native currency.

The Trust Scores of the buyer and seller, as well as their respective currency choices, have a significant bearing on the total costs incurred. As such, COTI network participants have strong economic incentives to maximize their Trust Scores by engaging in honest, trustworthy conduct.

COTI network participants have strong economic incentives to maximize their Trust Scores by engaging in honest, trustworthy conduct.

Payment-on-delivery as a fallback mechanism

Given the considerable influence that Trust Scores have on the transaction fees payable for any given transaction, there will be instances in which low Trust Scores drive up transaction costs to the point of exceeding the transaction fees that would be payable using traditional payments systems. Moreover, a seller may find that its low Trust Score results in it being unable to attract willing buyers.

To account for such scenarios, the COTI network offers a payment-on-delivery mechanism. Payment-on-delivery enables buyers to pay for goods only after receiving the goods to their full satisfaction. This mechanism eliminates the likelihood of the transaction requiring mediation or requiring the buyer to be compensated for a seller's failure to deliver the goods being purchased. From a fees perspective, payment-on-delivery enables buyers and sellers to do away with the reserve credit fund fee component entirely, prompting a decrease in the overall transaction fees payable.

The COTI network adapts to serve in the best interest of transacting parties by alternating between the standard and the payment-on-delivery modes depending on the transacting parties' Trust Scores and preferences. In instances where low Trust Scores prompt the aggregate network fees to exceed the fees that would be incurred using traditional payments systems – a threshold which varies according to the seller's industry and jurisdiction – COTI automatically switches to payment-on-delivery mode.

By instilling buyers with a greater sense of confidence, payment-on-delivery provides sellers that have low Trust Scores a means for achieving a lower abandonment rates than would otherwise be possible.

Measures against Trust Score manipulation

Given the high degree to which network participants are incentivized to maximize their Trust Scores, it is incumbent upon COTI to take proactive measures to combat Trust Score manipulation and abuse. The Trust Scoring Engine has provisions in place for detecting anomalies which signal that a party has attempted to manipulate its Trust Score or the Trust Score pertaining to another party (e.g., a competitor). In the event of a party being found to have attempted to manipulate a Trust Score, that party will be subject to severe penalties, including a substantial lowering of the offending party's Trust Score.

In addition to taking measures to counter Trust Score manipulation, COTI ensures that parties with low Trust Scores have a clear path to achieving higher Trust Scores. COTI has no intention of enforcing low Trust Scores on any one party in perpetuity, and actively encourages network participants to engage in organic, good-faith efforts to increase their scores. If a low-scoring party can demonstrate its value to the network by engaging in honest, trustworthy conduct, over time this value will be reflected in the party's Trust Score.

•••

The Trust Scoring Engine adds a crucial layer of trust to all transactions within the COTI network. As explained in 7. Roadmap, COTI will open its Trust Scoring Engine to third-party developers that are interested in leveraging COTI's trust layer across alternative applications. For example, a loans provider may wish to leverage COTI's Trust Scores as a form of credit verification to provide better, more accurate lending terms to individuals and merchants. As the COTI network grows, the Trust Scoring Engine will bring to transactions an important layer of trust that will facilitate lower-friction commerce and lower, more equitable transaction fee allocations.

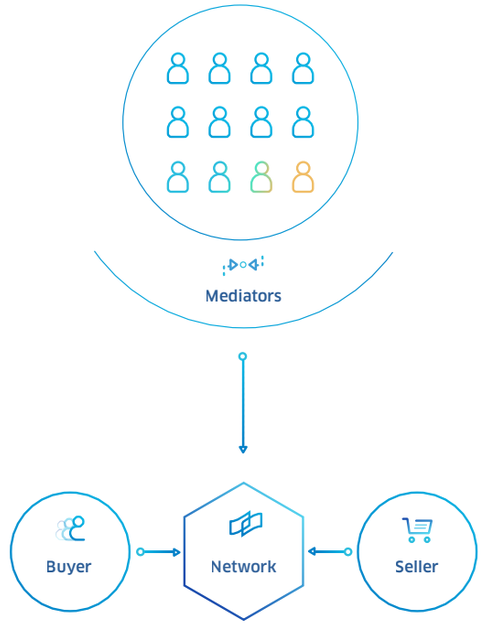
3.2 Mediation System

COTI's Mediation System serves to protect buyers and sellers in the event of transactional disputes arising within the network. While the Trust Scoring Engine adds a layer of trust to all COTI network transactions, and imposes disincentives on behaviour that is dishonest or unfair, the Mediation System provides a backup mechanism that facilitates dispute resolution in an effective and cost-efficient manner whenever such disputes occur.

Typical scenarios requiring mediation include the following:

- **Billing errors.** The buyer completes a purchase but later realises that the amount paid for the goods or services was incorrect.
- **Inadvertent transfers.** The user inadvertently sends funds to the wrong party.
- **Unauthorized charges.** The user is charged an amount without having authorized the transaction.
- **Undelivered goods or services.** The buyer pays a merchant for goods or services but the delivery of those goods or services is not fulfilled.
- **Non-conforming goods or services.** The buyer pays for and receives the goods or services, but the goods or services do not conform with the description or standards that the seller had conveyed at the time of the purchase.

In each of the above scenarios, if the sender and receiver of funds are unable to resolve the dispute directly, the unsatisfied party can initiate mediation.



The role of mediators

As Bitcoin's inventor Satoshi Nakamoto observed, one of the shortcomings of traditional payments systems is that, in providing mediation services, payments providers necessarily incur significant costs which in result in higher transaction fees. A key challenge for the COTI team was to determine how to provide buyers and sellers with robust safeguards in a streamlined, cost-efficient way.

COTI's approach to mediation involves harnessing a decentralized, distributed group of independent mediators to resolve disputes. Mediators work independently to validate real world information pertaining to transaction disputes, and then cast votes on a mediated outcome. Mediators receive caseloads and cast their votes using the mediator client (presented in 5. Applications & Services). They are not able to communicate with one another and are unaware of how many other mediators are involved in resolving a dispute.

The method for determining consensus is underpinned by the game theoretic notion of Schelling points (i.e., focal points). The rationale here is that mediators are encouraged to reach similar conclusions on a dispute and, in the absence of being able to co-ordinate, they look for focal points that provide the truest proof of the events that occurred between the buyer and the seller. The system relies on appealing to the intuition of each mediator.

After mediators' votes have been cast, the votes are assessed in a vote matrix using systems which determine consensus automatically. Once a mediated outcome has been determined by a quorum of mediators, the system compensates the winning party and returns that party's balance to its rightful state, sourcing capital from the reserve credit fund.

The mediator incentive structure

COTI needs to ensure that there are enough mediators available to satisfy the network's dispute resolution needs at any given time. As such, COTI is introducing a market mechanism to continuously calibrate the supply of mediators relative to the number of disputes in queue.

Mediators are paid an amount of COTI's native currency, XCT, for each instance in which they contribute successfully to reaching consensus. Mediators help the network to reach mediated outcomes by issuing blind bets in XCT that align with their own estimates of their ability to be part of a successful quorum for the dispute in question. Mediators who fail to reach consensus in a particular dispute relinquish their stakes, while the aggregate pool of XCT that was wagered for that dispute is subsequently distributed among the mediators who did contribute successfully to reaching consensus. Successful mediators receive payouts proportional to the amount that they wagered individually. A high-level depiction of the mediation process is provided in *Exhibit 3: Simplified example of the dispute resolution process*.

There are some functional similarities between the mediators in COTI's network and the miners in Bitcoin's network: miners, in the case of Bitcoin, and mediators, in the case of COTI, both contribute to the healthy functioning of their respective networks; miners and mediators are both subject to market mechanisms that determine the value of their efforts at any given time; and, miners and mediators both receive remuneration denominated in the native currencies pertaining to their respective networks. Mediators create network stability as a by-product of their incentivized mediation efforts; the greater their contribution to network's integrity, the greater the incentives.

EXHIBIT 3

Simplified example of the dispute resolution process

1. Non-delivery of goods

- The buyer pays for goods but the goods are not delivered as originally agreed.
- The buyer and seller cannot resolve this dispute directly, so the buyer decides to trigger mediation.

2. Distribution of caseloads

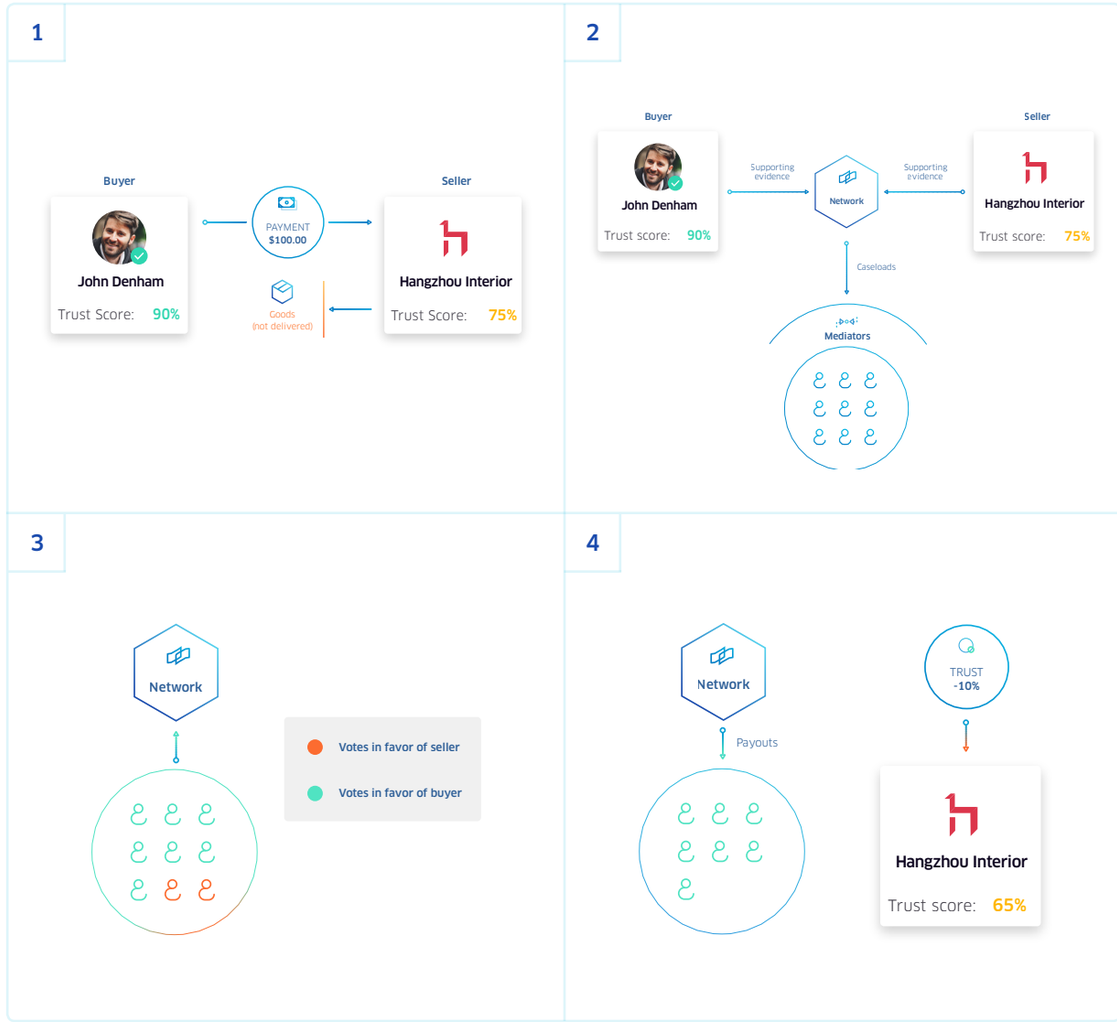
- The seller is notified that the dispute is in mediation. The buyer and seller submit supporting evidence to the COTI network.
- Details of the dispute are distributed to mediators who are deemed suitable for resolving the dispute, taking into account each mediator's availability, geographic location and past performance, among other factors.

3. Vote casting

- After reviewing the evidence, the mediators cast votes in favour of the buyer, merchant or neither – each mediator seeks to form part of the consensus, and needs to cast a vote without being able to communicate with other mediators.

4. Dispute resolution

- Given a quorum of mediators voting in favor of the buyer, the mediation consensus triggers a return of the funds to the buyer's wallet.
- Mediators that formed part of the consensus receive payouts proportional to their wagers.



Other mediation provisions

To ensure that the Mediation System is cost-effective and consistently achieves dispute resolution in a manner that benefits the network overall, COTI is taking several additional factors into consideration.

- **Mediator recruitment and training.** Individuals who wish to register as mediators must satisfy certain requirements before being admitted to the mediator platform. Among other requirements, mediators need to demonstrate relevant language proficiency and to undergo an online assessment to determine that they have the aptitude to perform the mediation tasks at a high standard. COTI will endeavour to make mediation open to a broad group of people and will make available online training programs that can assist candidates in acquiring the requisite knowledge for contributing to the dispute resolution process effectively.

- **Collusion prevention.** Due to its distributed nature, the Mediation System needs to account for the prospect of mediators engaging in collusion – either with one another, or with one of the parties to a disputed transaction. This risk of collusion is mitigated primarily through the algorithms that determine which mediators are assigned to a specific dispute, whereby caseloads are routed intelligently to mediators who have the least scope to collude with one another. If mediators are found to have engaged in any form of collusion, they will be severely penalized.

- **Privacy concerns.** Prior to distributing caseloads, COTI takes measures to ensure that only the data which aids directly in dispute resolution is disclosed. By default, COTI removes personal identifying information from all data submissions. If the parties to a dispute so choose, they can elect to forgo privacy for the sake of providing richer data. During the mediator registration process, all mediators are required to read and accept a mediator privacy policy, any violation of which will result in expulsion from the COTI network.

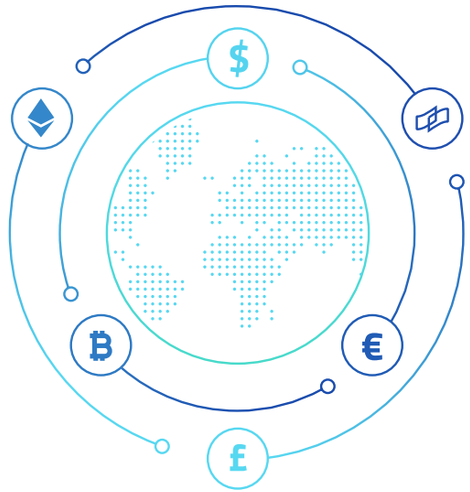
•••

Buyer and seller protections are a vital component of any widely-used payments network, and consumers and merchants alike have grown accustomed to being able to access mediation in the event of billing errors, unauthorized charges, and non-delivery of goods and services, among other sources of disputes. COTI's approach of solving the mediation challenge through a combination of data science and a decentralized workforce will achieve card network-like mediation standards at a fraction of the cost traditionally associated with such mediation functions. Moreover, to the extent that the incentives paid to mediators impose a cost burden on the network, the burden is borne by transacting parties in proportion to their Trust Scores: low-scoring network participants incur higher mediation fees than their high-scoring counterparts.

3.3 Currency Exchange

COTI aims for its payments network to be versatile with respect to currencies. To this end, COTI is developing a currency exchange that provides network participants with continuous access to liquid markets in a range of digital and fiat currency pairs.

The main functions of the exchange are threefold. First, it serves as an enabler of cross-currency payments by providing network participants a straightforward mechanism for paying or receiving funds in whichever currencies they choose, regardless of their counterparties' preferred currencies. Second, it provides end-users with a direct mechanism for transferring their holdings from one currency into another, if for whatever reason end-users wish to increase or reduce their exposure to a specific currency. And third, as discussed in 4. Native Currency (XCT), it is an enabler of the market-making activity in which COTI's native currency serves as the common denominator among all other currencies.



Seamless interoperability

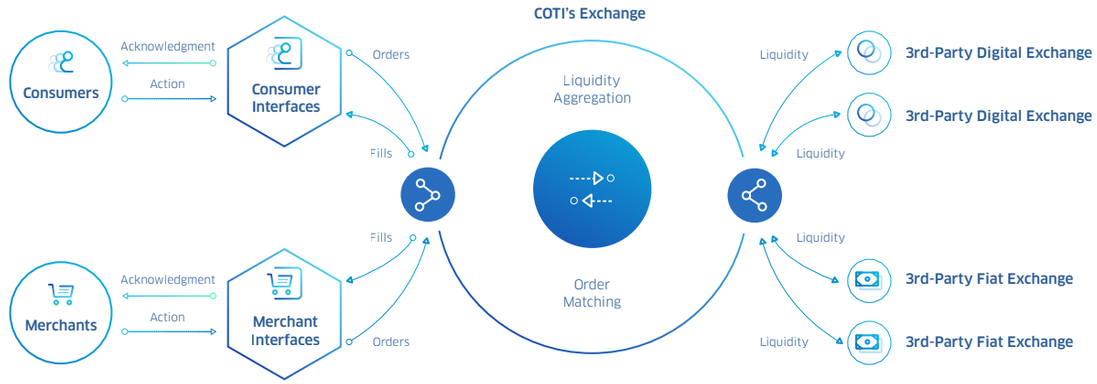
COTI abstracts the complexity of currency exchange from end-users. The exchange functions as a foundational layer of COTI's applications and services, operating in the background to ensure that participants' currency exchange requests are fulfilled automatically in response to the actions taken through the consumer, merchant and mediator interfaces. For each order, rather than presenting an orderbook and bid/ask prices, the user is presented with a single fixed rate, inclusive of any fees.

Global order book

Behind the scenes, the exchange works for the end-users to provide the best fulfilment and execution possible while guaranteeing that the originally-quoted rates are adhered to. COTI achieves this by amalgamating multiple liquidity sources to create a global order book. For a visual representation of the exchange's liquidity flows, refer to, refer to *Exhibit 4: Simplified depiction of the COTI network's liquidity flows.*

EXHIBIT 4

Simplified depiction of the COTI network's liquidity flows



When generating quotes based on the order books of multiple exchanges, COTI uses 'look ahead' algorithms to predict probabilistically the rates that it can honour. Upon receiving an order, the exchange works through its global order book, allocating quantities that need to be reserved across COTI's exchange and third-party exchanges to ensure that the order is filled successfully.

Security and fault tolerance

COTI's exchange is designed to be highly secure and fault-tolerant. The exchange implements a multi-tiered security architecture which limits attack vectors and attack ingresses. All traffic in COTI's exchange is encrypted end-to-end using Transport Layer Security (TLS) 1.2 (utilizing SHA256 keys) and all data-at-rest is secured with AES-256 encryption. Each step in the currency exchange process is transactional, such that if any part of any step in the exchange process fails, the entire step fails.

•••

COTI's exchange is first and foremost a component for facilitating cross-currency payments in a way that is maximally beneficial for network participants. It serves the secondary function of providing users with a means of adjusting their exposure to different fiat and digital currencies, and connects seamlessly to all of COTI's applications. Over time, additional exchange functionality will be added to accommodate more elaborate use cases – for example, by adding support for a wider array of order types.

4. Native Currency (XCT)

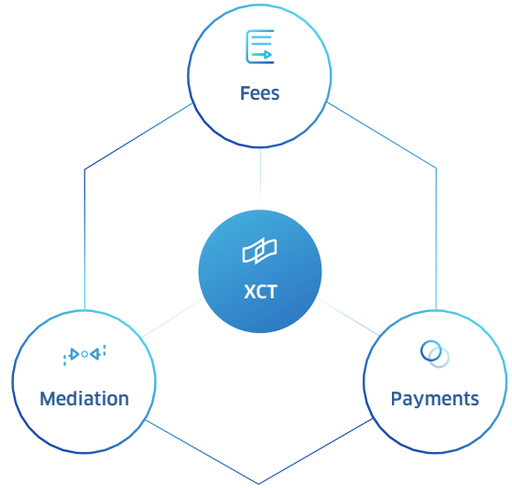
COTI's native digital currency, abbreviated as XCT, sits at the centre of the COTI network and fuels the interactions between consumers, merchants and mediators. XCT was purpose-built to overcome the barriers that have limited the widespread adoption of digital currencies in day-to-day payments.

XCT's primary function is to serve as the common denominator of fees, mediator incentives and payments within the COTI network.

- **Fees.** All fees incurred in the course of using the COTI network are payable in XCT. The levying of fees denominated in XCT applies to all transactions, irrespective of the currency being used to affect the underlying payment. When a user seeks to make a payment in a currency other than XCT (e.g., USD), the fees presented to the user will be quoted in that other currency and, upon affecting the transaction, the system automatically initiates an order on the user's behalf to purchase the equivalent quantity of XCT units. The newly-purchased XCT units are subsequently paid-through to the COTI network.

- **Mediation.** Mediator stakes and pay-outs are always denominated in XCT. As such, mediators will be required to hold XCT units whenever they wish to engage in mediation.

- **Payments.** XCT functions as a medium of exchange that can be used when making and receiving payments for goods or services. While the COTI network supports multiple fiat and digital currencies, transactions made in XCT benefit from lower (typically zero) transaction fees.



The road to becoming widely adopted

The COTI team anticipates that, in the near-term, the majority of payments made using the COTI network's rails will be denominated in existing, established currencies (e.g., USD). Such currencies naturally have strong existing network effects, and buyers and sellers are more inclined to pay with and accept them.

Beyond the immediate term, however, the COTI team's aspiration is for XCT to become widely adopted for general payments purposes – to become the **C**urrency **O**f **T**he **I**nternet. While XCT was architected to handle transactional volumes in the order of tens-of-thousands of transactions per second, scalability will not serve as a sole catalyst of adoption. As Austrian School economist Ludwig von Mises posited in his regression theorem[9], in order for a currency to reach the point of being widely-accepted as money – as a general medium of exchange – it first needs to have an objective framework for determining its price.

XCT's primary functions within the COTI network, both as a means of paying for fees and of incentivizing mediators, provide an objective framework that will determine XCT's price in relation to other currencies. The direct use of XCT within the COTI network will create network effects that over time will lead to its adoption in transactional scenarios that are not related directly to the internal mechanisms of COTI's network. After first being used primarily in the contexts of fees and mediation, XCT over time will become widely used as a medium of exchange.

Migration to a public blockchain

Members of the COTI team are strong proponents of blockchain technologies and intend for XCT's transaction ledger to be tied to a public blockchain standard. At present, however, the Bitcoin and Ethereum blockchains are neither sufficiently stable nor sufficiently scalable to accommodate XCT's use cases – at present, they do not provide sufficiently mature foundations upon which to establish a currency that is aimed squarely at addressing general payments use cases.

The COTI team is closely monitoring drivechain, a developer initiative that may result in the Bitcoin blockchain being upgraded to support links to other blockchains. The intention is for XCT to migrate to drivechain or an alternative, similar sidechain solution as soon as such solutions are sufficiently mature to accommodate COTI's use case. While drivechain is currently a front-runner among solutions for migrating XCT to a public blockchain, the COTI team will opt for whichever on-chain solution serves in the best interest of the COTI network's community of consumers, merchants and mediators.

The XCT transaction ledger

During the COTI network's formative stages, and until such time that a suitable on-chain solution is available, XCT transactions are cryptographically signed and stored on COTI's geographically-distributed, secure transaction ledger. All transactions posted to the ledger are broadcast anonymously into the public domain, and external validators are invited to run validator scripts to verify the integrity of the ledger.

In the COTI team's view, this semi-decentralized approach strikes the balance between being open, transparent and secure, while at the same timing affording the scalability and instantaneity benefits that are essential for accommodating general payments use cases. Such benefits would not be realized if, given the state of the art, COTI opted for a fully-decentralized approach.

Value drivers and execution venues

As the COTI network grows, and as more individuals and merchants choose to transact on COTI's rails, the demand for XCT will appreciate. Greater volumes of transactions will result in more fees being paid in XCT and more XCT-denominated incentives being paid to mediators. As soon as practicable following the XCT crowdsale, details of which will be released shortly, XCT will trade openly on COTI's native exchange and on third-party exchanges.

[9] The Theory of Money and Credit, Ludwig von Mises, 1912.

Market-maker

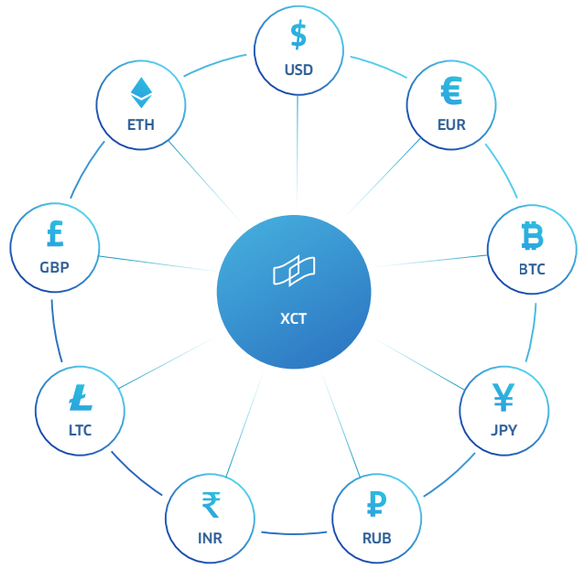
In order to provide the network with cross-currency capabilities that are characterized by deep liquidity, narrow spreads and minimal potential slippage, COTI will make markets in a variety of currencies using XCT as the common denominator.

COTI's zero-profit Bayesian market-maker has been designed to connect to a variety of liquidity sources with the goal of executing trading opportunities that help seed the order books for XCT in relation to other currencies. Given that the Bayesian approach favours scalability at the expense of being maximum loss-bound, the market-maker is being supported by risk management measures that curtail the risk of incurring untenable losses.

By making markets in XCT relative to a range of other currencies, the COTI network's automated market-maker will cement XCT's role as an important means of exchange.

•••

XCT is the COTI network's native currency. Although during the formative stages of the COTI network XCT will be used primarily for the payment of network fees and mediator incentives, as the scale of COTI's network grows, XCT will become increasingly used in payments contexts unrelated to the internal network mechanisms. Ultimately, XCT's adoption as a medium of exchange will be fuelled by the vital role that it plays within the COTI network, and by the core attributes that set it apart from other digital currencies – namely, its cost-effectiveness, scalability and instantaneity.

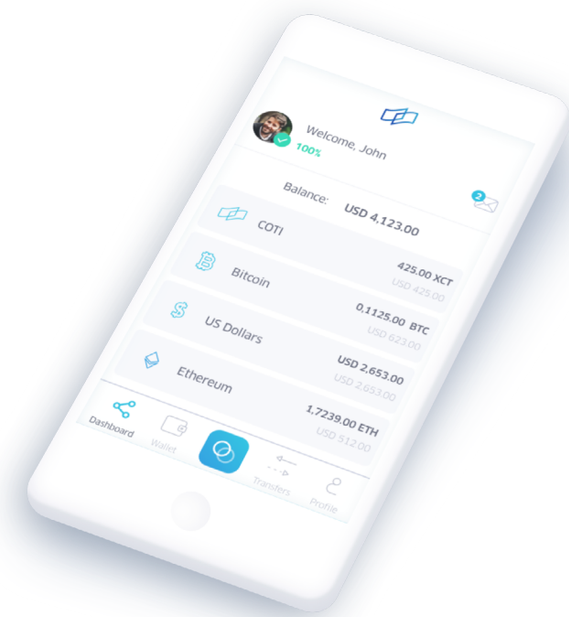


5. Applications & Services

COTI is developing a suite of applications and service offerings that provide consumers, merchants and mediators with connectivity to the COTI network.

5.1 For Consumers

The first pillar of the COTI network's success is the extent to which it establishes a critical mass of consumers that are equipped to use its payments solutions – for peer-to-peer payments and merchant payments alike. To this end, COTI is developing consumer offerings that will provide user-friendly gateways to a range of payments-related services, encompassing both fiat and digital currencies. Because the relative complexity of digital currencies has inhibited their widespread adoptions in payments use cases thus far, a primary focus of COTI's application design efforts has been on making digital currencies as easy to acquire and use as their fiat equivalents.



Wallets

COTI's main consumer offering is a multi-currency wallet that provides instant, easy access to the COTI payments network and supports a variety of consumer payments use cases.

- **Peer to peer transactions.** COTI users will be able to make instant, secure transfers to their peers who hold COTI wallets. Transfers will be instant and low-to-zero fee (depending on the users' Trust Scores and currency selections).

- **Payments to merchants.** COTI users will be able to pay for the goods and services sold by COTI-powered merchants, and will receive discounts from such merchants (subject to having high Trust Scores).

- **Storing digital and fiat currencies securely.** COTI users will be able to use their COTI wallets as de facto bank accounts for the purpose of holding funds in both digital and fiat currencies. In the first instance, funds can be deposited into COTI wallets using card, bank wire, Bitcoin and Ethereum.

- **Exchanging digital and fiat currencies.** COTI users will be able to use their wallets to move funds from one currency to another by posting market or limit orders to COTI's exchange. The currencies supported at the outset will include USD, EUR, GBP, BTC, ETH and XCT.

The COTI wallet is being developed as a native mobile application (for iOS and Android) and as a web application accessible via COTI's website. Users will be able to open wallets via the COTI website and applications, as well as during the checkout procedure on COTI-powered merchants' websites.

Virtual Debit Cards

To connect the COTI network with other payments rails, COTI is offering users access to virtual debit cards that link directly to COTI wallets. These virtual debit cards will be one-time cards that are used for one payment before being discarded. The rationale for offering these cards is that they will enable users to effect payments from their COTI wallets when dealing with merchants that have not yet integrated with COTI.

COTI users will be able to specify their preferred currency each time they create a virtual debit card. When a purchase is made using a card linked to a currency that does not match the payment currency, COTI's exchange will automatically convert the required amount of the card-linked currency to the purchase currency, thereby mitigating third-party currency exchange fees.

•••

The relative complexity of digital currencies continues to undermine their adoption by mainstream consumers. The COTI team aims for its consumer offerings to abstract this complexity from end-users, with a view to increasing digital currencies' mainstream adoption. In addition to supporting a variety of payment, storage and exchange use cases, COTI's wallet will provide an ideal entry point for mainstream consumers looking to venture into the digital currency domain for the first time.

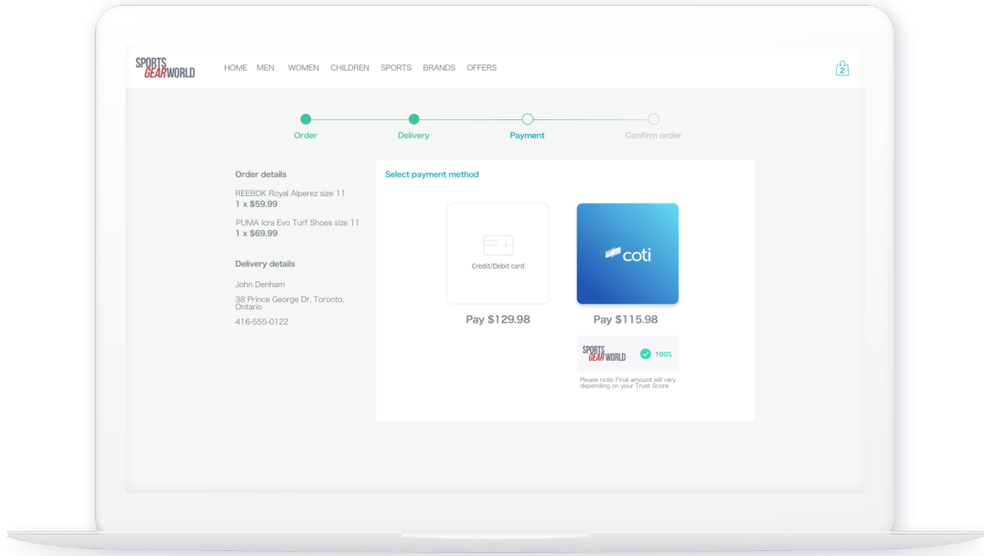
5.2 For Merchants

The second pillar of the COTI network's success is the extent to which it can attract and retain a large base of merchants that accept payments using COTI's rails. To this end, COTI is developing a suite of merchant tools and services that make COTI a compelling proposition for merchants, where as an addition to, or a replacement for, their existing payment systems.

Processing Tools

COTI is developing processing tools that will enable merchants to start accepting payments from COTI wallet-holders. Consumers that visit COTI-powered merchants' websites but do not hold COTI wallets will be invited to open wallets instantly as part of the check-out process. Merchants will be able to choose whether they wish to connect to COTI's payments rails via API or by embedding an iFrame into their websites. The merchant on-boarding process will be streamlined to the point that integration can be completed within a few hours. The integration process will be made simpler by the fact that COTI's processing solutions will be compatible with several widely adopted e-commerce platforms (including Shopify and Magento).

COTI-powered merchants will have access to a dashboard that provides detailed data and reporting functionality relating to their COTI network transactions. Within this dashboard, merchants will choose which COTI-supported currencies they wish to accept, as well as their preferred settlement currencies. Moreover, the dashboard will provide merchants with wallet-like functionality that enables them to make payments to COTI wallet-holders and other COTI-powered merchants, as well as to use COTI's currency exchange facility.



Hedging Services

COTI recognizes that one of the barriers preventing merchant acceptance of digital currencies is the volatility that they may be exposed to between the time a payment is received and the time of settlement. COTI will remove this barrier by, in addition to supporting instant settlements, providing COTI-powered merchants with access to hedging services that enable them to reduce, or eliminate, their exposure to near-term currency fluctuations. These hedging services will initially be limited to a 30-day period and will cover only payments made in COTI's native currency, XCT.

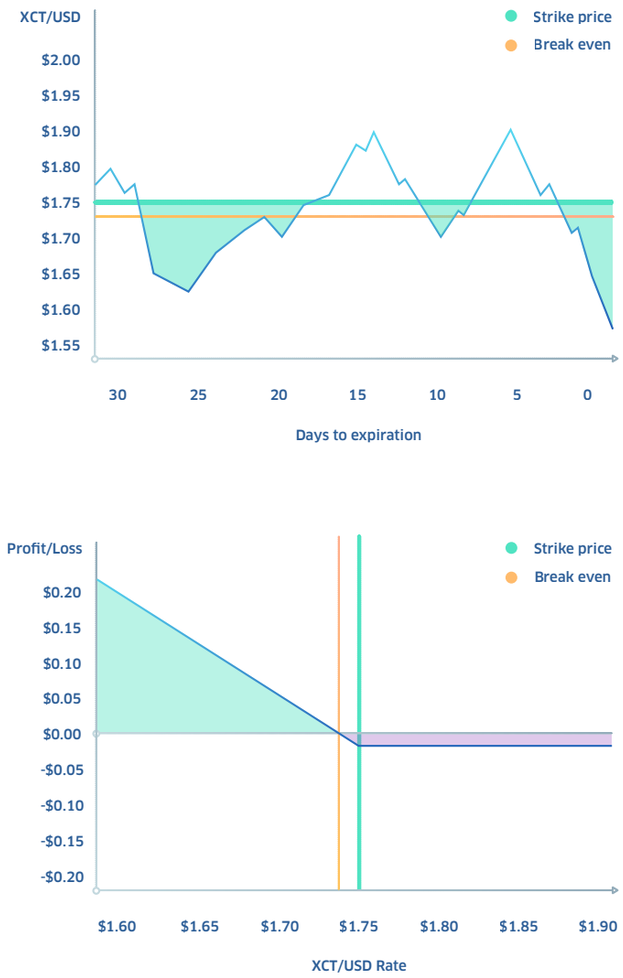
COTI intends for these hedging services to encompass a range of put options, for enabling merchants to limit their downside XCT exposure while retaining upside exposure, and forward contracts, for enabling merchants to lock in future exchanges at predetermined rates. A simplified example of a 30-day option contract that would enable a merchant to hedge its downside exposure to XCT relative to the USD, together with a simplified depiction of the option's hypothetical payoffs, is provided in *Exhibit 5: Simplified example of a 30-day put option*.

•••

Merchants that choose to accept payments using COTI's rails will realize significant cost savings, higher approval rates and higher customer satisfaction. The cost advantages will be most pronounced for merchants that engage in honest, trustworthy conduct and retain high Trust Scores. As COTI's network grows, COTI will introduce additional solutions for merchants, including supplier and employee payments, thereby enabling merchants to carry out a greater variety of payment functions from within the COTI network.

EXHIBIT 5

Simplified example of a 30-day XCT put option



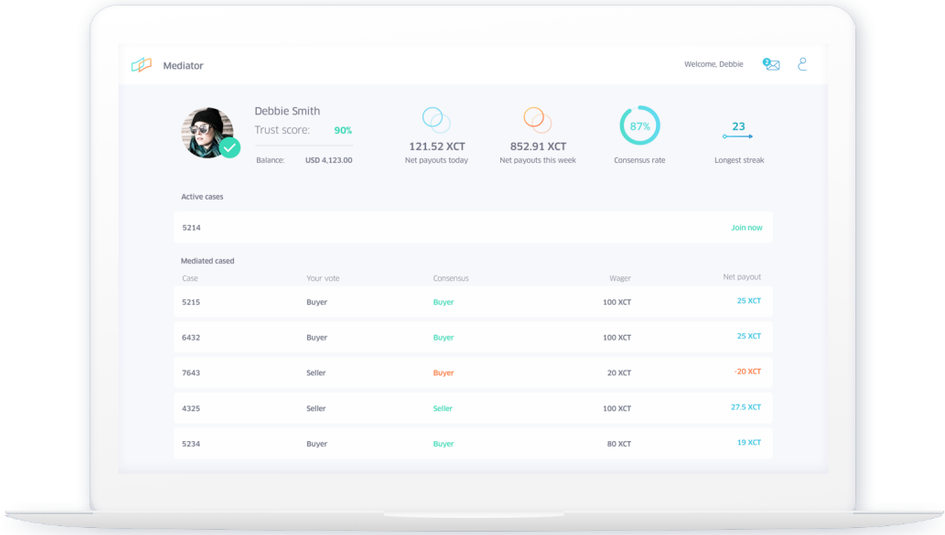
5.3 For Mediators

The third and final pillar of the COTI network's success is the extent to which it can attract and retain a sufficient volume of capable mediators to address the volume of disputes occurring in the network at any given time. In addition to having sufficient economic incentives, as described in 3. Network Core, mediators require tools to facilitate their contributions to the dispute resolution process.

COTI is developing a separate application to accommodate mediator use cases. The mediator client will largely resemble the consumer wallet, but will offer enhanced functionality that enables mediators to serve their roles effectively. Among other functions, the application will enable mediators to receive invitations to receive and review caseload data, to place wagers and, in the event of successfully contributing to a mediated outcome, to receive pay-outs in XCT.

•••

COTI's mediator application will provide mediators with seamless connectivity to the COTI network. The application will ensure that mediators can perform their roles effectively and receive pay-outs for their efforts. All XCT pay-outs will be convertible into other currencies via COTI's exchange.



6. Regulatory Approach

COTI's legal advisors are laying the licensing and regulatory foundations that will enable the COTI network – and its native currency, XCT – to achieve global scale and reach. While the digital currency landscape is currently characterised by a high degree of regulatory uncertainty, the COTI network stands to benefit from the onset of new, digital currency-specific regulations.

Early adopters of digital currencies have long held the view that digital currencies will continue to thrive outside the strictures of governments. The COTI team's somewhat contrarian view is that, like the Internet before it, digital currencies will only come of age – and yield the greatest benefits to consumers and businesses – by operating within the bounds of the laws and regulations of sovereign states.

In order for digital currencies to achieve widespread adoption in payments, digital currency-related organisations – whether decentralized or not – will need to adhere to the laws and regulations of the jurisdictions in which their end-users reside. And in the absence of digital currency-specific regulations, organisations should take a proactive approach by adhering to the know-your-customer (KYC) and anti-money-laundering (AML) standards which are now commonplace in the provision of money services.

Although digital currencies are largely unregulated, regulatory authorities in several jurisdictions have grown increasingly outspoken about their intentions to implement digital currency-specific regulatory regimes. Some jurisdictions – including Ecuador and Bangladesh – have altogether banned the use of Bitcoin and other digital currencies, yet much of the recent regulatory attention has centred on initial coin offerings.

To promote the onset of suitable digital currency-specific legislation, the COTI team and its legal advisors are working with regulators globally to help shape the relevant regulatory frameworks, and to share COTI's experiences as a global digital currency initiative.

Licensable activity

Certain aspects of the COTI network's activity relate to the provision of wallet and exchange services, both of which are licensable activities in the jurisdictions examined. As such, COTI is pursuing license authorisations globally in respect of the following:

- **Payments and money services.** Such licenses cover the provision of merchant processing solutions, enabling COTI-powered merchants to accept payments in digital and fiat currencies.

- **Exchange and e-wallet services.** Such licenses cover the provision of exchange and wallet functionality, enabling COTI to provide individuals and merchants with the ability to hold, and exchange, digital and fiat currencies.

Pursuant to advice from its legal advisors, the COTI network will expand its license portfolio to ensure maximum geographic coverage.

AML and KYC procedures

The COTI network is adopting appropriate AML and KYC procedures to ensure that its network cannot be used to facilitate money-laundering or other illicit activity. COTI is inherently not conducive to money-laundering, as any user of COTI's wallet, exchange or processing solutions must go through strict onboarding procedures. Notwithstanding its commitment to AML and KYC, COTI is similarly committed to protecting user privacy, and has appropriate consumer data protection mechanisms in place.

XCT is not a security

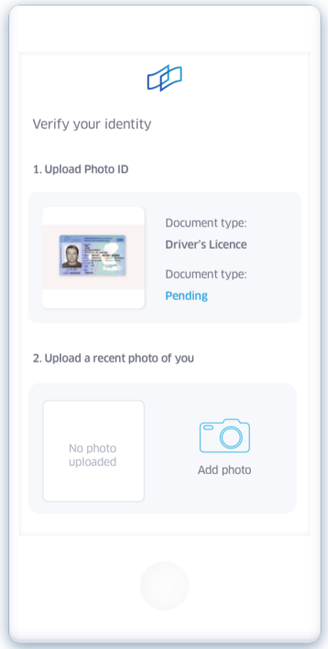
According to advice received, the offering of digital currencies may also involve the offer and sale of securities, depending on the facts and the circumsntances. And the offer and sale of securities is likely to face financial and securities regulation worldwide.

With respect to COTI's native currency, XCT, COTI's legal advisors have examined the currency's unique features in consultation with additional legal experts from reputable law firms in several key jurisdictions. According to the legal opinions received, XCT does not classify as a security, and the sale of XCT units to members of the public does not constitute a breach to the relevant regulations.

•••

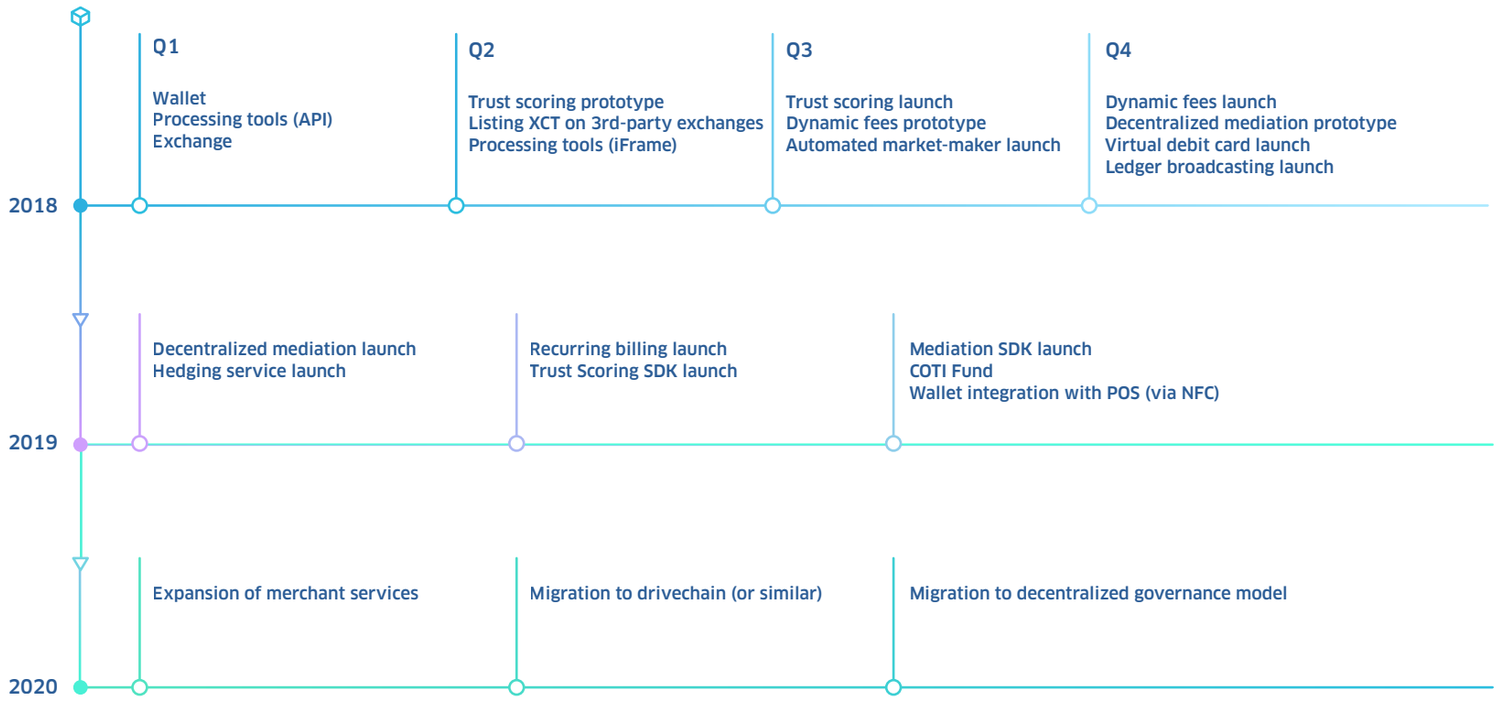
COTI is laying a global licensing footprint for its licensable activity, and is adhering to strict AML and KYC standards in all aspects of its activity – even those which are not currently subject to formal regulatory oversight.

The COTI network will benefit from greater regulatory clarity in respect of digital currencies. If properly designed, regulations will not constrain innovation; rather, they will serve as enablers of mainstream digital currency adoption. The COTI team and its legal advisors aim to serve as catalysts for positive regulatory change, and are working with regulators globally to make a meaningful contribution to the dialogue.



7. Roadmap

COTI's roadmap sets out the key launch milestones that will shape development priorities between now and the end of 2020. The visual roadmap representation provided below is accompanied by detailed milestone explanations on the pages that follow.



Development progress-to-date

Since its formation in early 2017, the COTI team has focused primarily on developing its exchange infrastructure and consumer wallet offering, and on defining the mechanics of its Trust Scoring Engine and Mediation System. The exchange and consumer wallet are approaching completion and will be put to work during the forthcoming XCT crowdsale, details of which will be released in Q4 2017.

Phase 1 Milestones – Q1 2018

The initial release of COTI's services will offer a baseline feature-set that enables the network uptake to be initiated among consumers and merchants.

- **Consumer wallet.** COTI's release of the consumer wallet will kick-start the COTI ecosystem, providing consumers the ability to send, receive, exchange and pay with multiple fiat and digital currencies, including XCT. The iOS, Android and web application will initially support USD, EUR, GBP, BTC, ETH and XCT, with additional supporting being rolled-out on an ongoing basis subject to network demand.

- **Payments processing tools (API).** COTI's initial release of its payment processing tools will provide merchants the ability to accept payments from consumers holding COTI wallets, and to access rich reporting and analytics. Merchants will be able to integrate COTI's processing solution via API, and will be able to accept payments and receive pay-outs in various fiat and digital currencies, including XCT.

- **Exchange.** In order to support the consumer and merchant activity, COTI will simultaneously roll-out its exchange solution, allowing the wallet and processing services outlined above to connect seamlessly to sources of liquidity when exchanging funds between different currencies.

Phase 2 Milestones – Q2 2018

COTI aims to achieve the following milestones in Q2 2018.

- **Trust scoring prototype.** This will encompass a machine learning model for integrating network data and conducting analytics on the network to determine the rank (and Trust Score) of network participants.

- **Listing XCT on third party exchanges.** COTI's native currency, XCT, will be listed on third party exchanges, so as to fuel the currency's liquidity and provide people outside the COTI ecosystem access to XCT units.

- **Payments processing tools (iFrame).** COTI will release an iFrame that merchants can embed in their websites, thereby streamlining the technical integration process. The iFrame will enable COTI wallet registration to occur as part of the checkout process within COTI-powered merchants' websites.

Phase 3 Milestones – Q3 2018

COTI aims to achieve the following milestones in Q3 2018.

- **Trust Scoring launch.** The Trust Scoring mechanism will be rolled out and applied to all network participants, enabling buyers and sellers to assess the trustworthiness of the parties they are considering transacting with.

- **Dynamic fees prototype.** The launch of Trust Scoring will coincide with the release of a prototype of the dynamic fee mechanism, providing a test case for how Trust Scores will later be used to determine the fees payable by transacting parties.

- **Automated market-maker.** COTI's automated market maker will be implemented to create liquidity in XCT and in other currencies within the COTI ecosystem, thereby providing a more fluid transactional experience for all ecosystem participants.

Phase 4 Milestones – Q4 2018

COTI aims to achieve the following milestones in Q4 2018:

- **Dynamic fees launch.** COTI will launch dynamic fees network-wide, enabling all transacting parties to pay fees in accordance with their Trust Scores.
- **Decentralized mediation prototype.** COTI will release a prototype of its decentralized mediation system, and will begin optimizing the system with a select group of mediators and test users.
- **Virtual debit card launch.** COTI will launch virtual debit cards (Visa or Mastercard) that enable COTI wallet holders to spend from their wallets using the payments rails of the major card networks. COTI users will be able to obtain these cards for a nominal issuance fee, and will not be required to pay any ongoing maintenance fees.
- **Ledger broadcasting.** In line with COTI's commitment to transparency and external validation, from early 2019 all ledger transactions will be broadcast into the public domain (anonymously) and will be available to external validators seeking to verify the network's integrity.

Phase 5 Milestones – 2019

COTI aims to achieve the following milestones in the course of 2019:

- **Decentralized mediation launch.** Following extensive testing, COTI will implement its decentralized Mediation System, enabling mediators to contribute to case resolution and to be compensated in XCT units. To coincide with the launch of the decentralized Mediation System, COTI will launch a dedicated application that will enable mediators to receive caseloads and contribute to the consensus-building process.
- **Hedging service launch.** COTI will launch a hedging service that enables merchants to limit or eliminate their exposures to fluctuations in XCT's market price.
- **Recurring billing.** COTI will enable merchants to use COTI's payment rails for recurring billing (e.g., subscription services).
- **Trust Scoring SDK launch.** COTI will accelerate platform adoption by providing authorized third-party developers with access to a Trust Scoring software development kit (SDK). This will allow developers to build other applications that leverage the Trust Scoring Engine and willing participants' Trust Scores. For example, a loans provider may wish to leverage COTI's Trust Scores as a form of credit verification to provide better, more accurate lending terms to individuals and merchants.
- **Mediation SDK launch.** COTI will expand the reach of its network of mediators, and corresponding systems, by allowing authorized third-party developers to connect to the network and leverage the decentralized mediation capabilities. For example, a third-party payments network may wish to adopt COTI's decentralized mediation system as an alternative to its existing, centralized system. The SDK will make such integrations possible will enable COTI to improve the system, both in terms of efficacy and cost-effectiveness.
- **COTI Fund.** The launch of COTI's Trust Scoring and Mediation SDKs will coincide with the launch of COTI's Fund, a pool of capital that will inject funds into third-party development projects that are building on top of COTI's infrastructure. The Fund's principals, who will be responsible for the allocations, will be determined in part by the COTI community's preferences.

- **Wallet integration with point-of-sale terminals (via NFC).** In the course of 2019, the scale of COTI's network will likely justify the roll-out of support for COTI wallets at point-of-sale (POS) terminals in offline retail contexts. These integrations will be performed using near-field-communication technology (NFC), enabling COTI wallet-holders to pay from their COTI wallets in offline transactions.

Phase 6 Milestones – 2020

COTI aims to achieve the following milestones in the course of 2020 and beyond:

- **Expansion of merchant services.** COTI will launch additional merchant services, with a view to playing an increasingly central role in merchants' payments affairs. These additional services will enable merchants to conduct an increasing array of operational functions – including payroll and supplier payments – through the COTI network.

- **Migration to Bitcoin drivechain (or similar).** Subject to the availability of all necessary features, COTI will migrate its transaction ledger to a public blockchain. The COTI team currently anticipates that drivechain (a Bitcoin sidechain initiative) will be a likely contender. However, the availability and maturity of drivechain, as well as alternative solutions, will be evaluated on an ongoing basis. The timing of this migration may be brought forward, or delayed, depending on the availability of necessary features.

- **Adoption of fully-decentralized governance model.** Given sufficient network maturity, to coincide with COTI's migration to a Bitcoin sidechain (or alternative), COTI will undergo a transition to a fully decentralized governance model. The migration will ensure that the continued growth of the COTI ecosystem is in the hands of the COTI community.

•••

COTI has set out an ambitious, yet achievable, development roadmap. This roadmap represents the COTI team's current understanding of the launch sequence that will ensure the COTI network delivers the maximum achievable benefits to all network participants within the shortest amount of time possible. Notwithstanding the aforesaid, the COTI team is committed to working with the COTI community to expand or otherwise adjust the characterization and prioritization of the key milestones where necessary.

8. Risk Factors and Legal Disclaimers

You should carefully consider the risks involved in purchasing and holding digital currencies and the risks described below, as well as the other information included in this Overview Document, before you decide to buy COTI's digital currency.

The risks and uncertainties described below are not the only risks associated with COTI's digital currency. You may face additional risks and uncertainties that are not currently known to us or that we currently deem immaterial. The risks described below, and any such additional risks, could potentially have an adverse impact on the value of COTI's digital currency. In such a case, you may lose all or part of your funds in connection with your participation in the transactions envisioned herein.

- The terms "**us**", "**our**", and "**we**" refer to COTI Limited, and the terms "**you**" and "**your**" refer to you as a contributor and/or a purchaser of COTI's digital currency according to this Overview Document.

- The material in this Overview Document has been prepared by COTI Limited and is general background information about its activities current as of the date of this presentation. This information is given in summary form and does not purport to be complete.

- The information contained in this Overview Document is provided by COTI for general information only. Accordingly, the information provided is not intended to replace or serve as substitute for any investment, consulting, legal or other professional advice or service. Before making any decision or taking any action which might affect your personal finances or business, you should consult a qualified professional advisor.

- It is your sole responsibility to comply with the relevant legal framework in your jurisdiction with regard of transactions in digital currencies.

- From time to time, legislation may be drafted and introduced in respect of the digital currencies that could significantly change the statutory provisions governing the COTI tokens and/or our business conduct. These regulations and guidelines may often be revised or reinterpreted by the regulatory authorities in ways that may significantly affect our business and our products. It is impossible to predict whether legislative changes will be enacted or interpretations changed, and what the impact of such changes, if any, may be.

- Hackers or other groups or organizations may attempt to manipulate the ownership of digital currency, thus potentially impacting the conduct of transaction and storing of COTI. In this regard, advances in code cracking, or technical advances such as the development of quantum computers, could present risks to digital currencies, which could result in the theft or loss of the digital currency.

- As with other digital currency, the blockchain used for COTI is susceptible to attacks, including but not limited to double-spend attacks. Any successful attacks present a risk to COTI and expected proper payment operations.

- Purchases of digital currencies should be undertaken only by persons who have clear understanding of the usage and intricacies of digital currency tokens. Purchasers should have a functional understanding of storage and transmission mechanisms associated with other digital currencies tokens as well with the market and credit risks associated with transacting in digital currencies. COTI will not be responsible for losses resulting from actions taken by, or omitted by purchasers. Digital currencies can, in theory, become worthless and the interest in them could wane. The overall effects of world economies could become so severe as to affect digital currencies' value – even with safeguards in place, extreme factors could have an effect. In any event, purchasers cannot suffer a loss that is greater than the value of the purchase being made.

Special Note Regarding Forward-Looking Statements

- In this Overview Document we make forward-looking statements about our assumptions regarding the COTI token ecosystem that are subject to risks and uncertainties. These forward-looking statements include information about possible or assumed future results of our ecosystem, financial standing of the legal persons involved, liquidity, plans and objectives. In some cases, you can identify forward-looking statements by terminology such as "believe," "may," "estimate," "continue," "anticipate," "intend," "should," "plan," "expect," "predict," "potential," or the negative of these terms or other similar expressions. Forward-looking statements are based on information we have when those statements are made or our management's good faith belief as of that time with respect to future events, and are subject to risks and uncertainties that could cause actual performance or results to differ materially from those expressed in or suggested by the forward-looking statements.

- By participating in our digital currency business, making donations, receiving and holding tokens, or using our Website, you acknowledge and agree that you fully understand and accept the risks mentioned above, and to the extent permitted by applicable law, you agree that no other party (including, without limitation any of us and our affiliates) will be held liable for any loss arising out of, or in any way connected with your participation in the activity described in this Overview Document.