



# Next Generation Financial Protocol

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# ABSTRACT

Velo's core mission is to build a decentralized settlement network that allows partners to safely and securely transfer value between each other in a timely and transparent way. The initial focus is to serve partners in the remittance and money transfer markets of Southeast Asia. The immediate effects of Vello's partners using Vello technology will be felt by the large population of underbanked and financially underserved in the region, as they enjoy lower fees, faster transactions, and wider coverage; all without having to directly interact with Vello technology or VELLO tokens.

As the use of digital assets increase, there is a need for tools designed to bridge the gap between the physical and digital world. The barriers between various forms of digital payments must be knocked down for competitiveness and productivity to increase for all financial institutions, both large and small.

Vello's objective is not to replace existing banking infrastructure or fiat money, but instead to complement and connect them to a wide array of partners through a blockchain payment system that also provides for trustless, guaranteed settlement. Vello's technology basically acts as a guarantor to all digital credit transfers in the network, fostering trust by providing a collateral layer backing all transactions. The collateral value is representative of the value of in the system. The Vello Network connects Trusted Partners, which are businesses that have been vetted and approved to join the network, to each other through the blockchain. This allows end users of each partner firm to access the benefits and services of other partner firms that are part of the Vello Network.

Digital credits are the medium of exchange, and their settlement is guaranteed by Vello. The VELLO token is issued on the Stellar blockchain network, an open-source distributed ledger used specifically for payments. As described on stellar.org, "Stellar has no owner; if anything it's owned by the public. The software runs across a decentralized, open network and handles millions of transactions each day. Like Bitcoin and Ethereum, Stellar relies on blockchain to keep the network in sync." The VELLO token is used by Trusted Partners as collateral for receiving digital credits and represents a value link between fiat deposits and digital credits.

The Vello Network is a permissioned settlement layer that avoids direct transfers of fiat money while still enabling participants to conduct efficient and secure cross-border transactions. As an optimized liquidity management layer, Vello aims to develop a collection of systems that will promote liquidity among partners and the ecosystem. One such system will take the form of a decentralized exchange and yet another will intelligently search for cross-country balances that offset the net payment flow, allowing expedient clearing, and minimizing risk. Trusted Partners can exchange fiat money of one origin country for credits backed by VELLO. Smart contracts will be employed to link VELLO collateral to digital credits and actual fiat deposits, allowing digital credits to be used securely for intraday transactions with other Trusted Partners.



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# 1 INTRODUCTION

## 1.1 Background

Velo intends to create a guaranteed decentralized settlement layer with a highly liquid value exchange on a federated permissioned blockchain technology between Trusted Partners. Initially, these partners may take the form of large remittance providers, banks, or e-wallets. Each partner, in turn, would be connected to thousands of end users that would be able to interact with any other partner in the network.

The remittance market is an exceptionally large addressable market that can immediately benefit from Velo. Despite the recent advancements in financial infrastructure, it remains difficult to do a cross-border money transfer between different types of institutions and service providers. Velo's technology allows trustless and secure digital credit transfers that will remove friction and barriers from the current value transfer process. Velo will enable any one Trusted Partner to transact with any other Trusted Partner at any time and any place once they become part of the Velo Ecosystem. This would allow businesses, migrant workers, and end-consumers to get better service at a lower cost than provided by current offerings.

In addition to remittance scenarios, the Velo Network will also include a wider range of financial services which will require the use of smart contracts. As Stellar is one of the best blockchain networks for digital asset transactions, the Velo Network will also expand blockchain adoption of Stellar and will include smart contract functions on EvryNet, which will also enable cross-chain solutions.

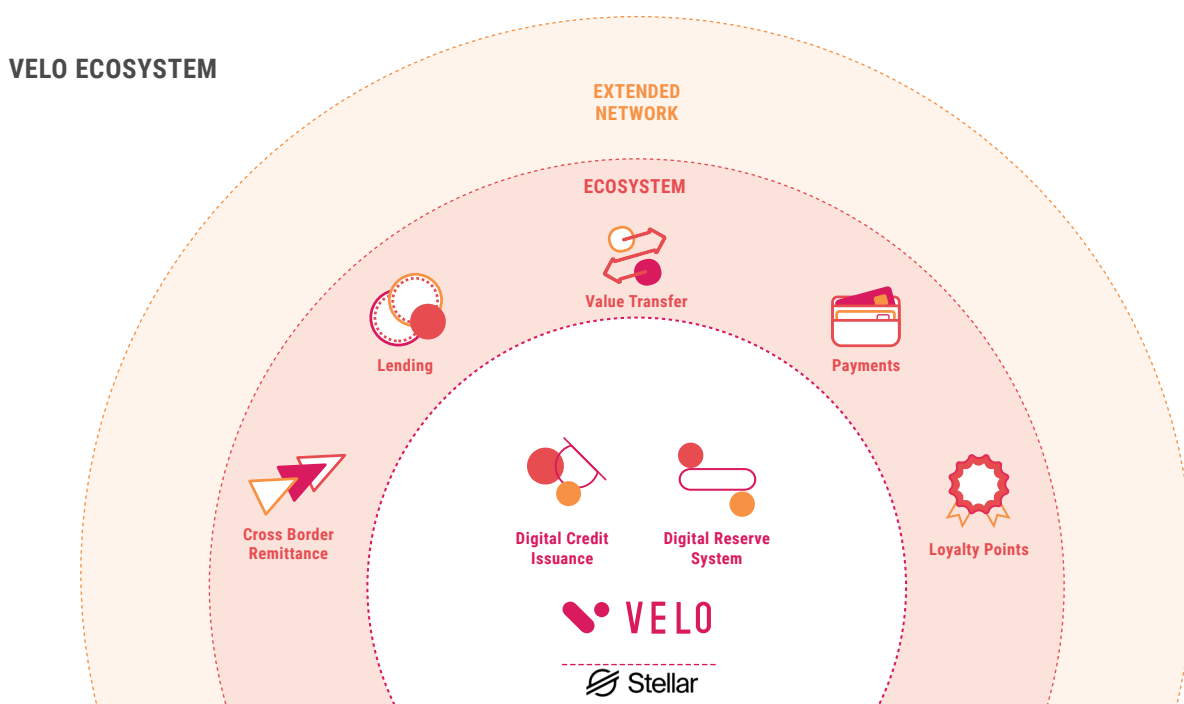


Exhibit 1: Velo Ecosystem



At a high level, Velo is an open protocol that enables Trusted Partners to receive digital credits on a distributed ledger. The digital credits are collateralized by VELO tokens that link the credits to fiat deposits. Trusted Partners can use the digital credits in their day to day operations through the blockchain. Currently, the primary components that form the Velo Protocol are the Digital Credit Issuance mechanism and the Digital Reserve System (DRS). The DRS ensures that digital credits will settle anywhere in the network and are always backed by right amount of VELO token collateral.

More technically, Velo is a set of smart contracts that are used to issue credit linked to fiat deposits and backed by VELO tokens on EvryNet, a protocol that supports many smart contract functionalities. The VELO token itself is issued on the Stellar blockchain network, which is used for the VELO token's transaction settlement and clearance.

Once Trusted Partners receive fiat deposits from business partners, they can instantly receive an equivalent amount of digital credits by posting VELO tokens through the Velo Protocol as collateral. The DRS is a key factor in keeping the digital credits backed by VELO fully collateralized and representative of the original value of deposited fiat while the price of VELO tokens fluctuate in the open market. The DRS is designed to ensure stability by managing the number of VELO tokens held as collateral. The aim is to maintain the relationship between token value and digital credit value as close to 1:1 as possible.

The quality of the business network and ecosystem will be the key and a primary focus of commercial and technology development. Trusted Partners will bring their business networks to the Velo Ecosystem and each of the networks will be able to connect to the other. We envision remittance service providers, e-wallets, and other financial services to be able to seamlessly utilize each other's functionality, and this will drive quick adoption of the Velo Protocol and distributed ledger technology in general.

## 1.2.1 Velo Tokens

VELO tokens are utility tokens designed to ensure the settlement of digital credits issued in the ecosystem by being used as smart contract locked collateral for value transfers. Value for VELO token holders will increase as demand for digital credits grow and transfer volumes increase with the addition of more business partners and end users.

The VELO token's utility lies in its double feature as both collateral and as an entrance requirement to the Velo Ecosystem. Each use of the Velo Ecosystem starts with the deposit of fiat and the issuance of a matching amount digital credits by engaging the Velo Protocol, which requires VELO tokens. As more Trusted Partners join the Velo Ecosystem and as each of their businesses grow, the demand for newly issued digital credits, and subsequently VELO tokens, will also grow. The expansion of the Velo Ecosystem will create demand for VELO tokens in the open market because Trusted Partners will need to purchase or borrow the tokens to receive digital credits to meet their operational demands. Digital credit flow and settlement will be managed by the Digital Reserve System whose operation will facilitate the growth of the network and the value of the VELO token in an orderly manner.



## 1.2.2 Built on Stellar

Many cryptocurrencies are limited for payments due to their latency and the time-consuming consensus process which prevents the currency from being able to process high transaction volumes. Due to these limitations, cryptocurrencies have yet to pose a real threat to the leading incumbents in the payment space. When compared to the performance of the SWIFT network, cryptocurrencies offer a viable means for much faster point-to-point transfer of money between entities, be it businesses or individuals. Transactions of these types can commonly take up to two to three business days to settle, whereas the leading blockchain technologies are able to do this instantly depending on the platform deployed.

The reason Stellar was chosen as the technology for issuance of the VELO token is because it is one of the fastest, cheapest, most efficient, and secure blockchains in the market. When looking at the major blockchains, Bitcoin is only able to process 3-4 transactions per second and Ethereum 20 transactions per second. From a transaction cost perspective, Ethereum and Bitcoin are cost prohibitive for small payments due to high network activity. The Stellar blockchain can complete 1000 transactions per second, which is especially suitable for financial scenarios such as remittances and payments.

When compared with Ripple, which has a few technical similarities to Stellar, there are several key differences worth highlighting. Stellar enjoys equally fast performance with a slightly cheaper transaction costs. Additionally, Stellar it is more easily scalable, and is a uniquely sustainable platform for decentralized financial products and services. Another major difference between Stellar and Ripple, however, is in the business ethos of the two companies: Ripple is focused on the improvement of traditional banking corridors with an aim to replace SWIFT, whereas Stellar is directly aligned with the provision of broader financial services to the unbanked/underbanked market segment. Stellar also has the lowest eco-footprint of any of the blockchain providers which keeps operating and environmental costs at a minimum.

As a result, Stellar was the best for VELO token issuance, as the digital credits issued through the Velo Protocol will be able to benefit from the high liquidity, high performance, minimal cost, and security offered by the Stellar Network.

	BITCOIN	ETHEREUM	STELLAR	RIPPLE
Transaction Confirmation Time	Up to 1 hour	Up to 15 minutes	3 to 5 seconds	3 to 5 seconds
Average Transaction Fees	\$5.45 per transaction	\$0.30 per transaction	\$0.01 for 300,000 transactions	\$0.01 per 200,000 transactions
Transaction Per Second	3 transactions per second	7 transactions per second	3,000+ transactions per second	1,500 transactions per second
Consensus Mechanism	Proof of Work	Proof of Work	Stellar Consensus Protocol (SCP)	Proof of Correctness

Exhibit 2: Blockchain comparison table



## 1.2.3 Underlying Distributed Ledger Technology

The Velo Protocol is the financial infrastructure that issues digital credits based on distributed ledger technology (DLT). DLT creates a decentralized system for trust and transaction validation using consensus, whereby multiple nodes agree on a proposed transaction and then update the ledger held by each node. Transactions in the Velo Ecosystem will be validated by implementing the proven Stellar Consensus Protocol.

# ② COMPONENTS OF THE VELO PROTOCOL AND HOW IT WORKS

Development of the Velo Protocol will be rolled out in phases. Each phase will add critical functionality to meet the needs of the Velo Network and its partners as it grows. New features will focus on improving liquidity of digital credits and VELO tokens and adding structural flexibility to provide new types of services and improve the partner experience. We believe this phased approach allows Velo to conduct real world testing and improvement to the Velo Protocol while incorporating feedback from users in a transparent way. Over time, we will continually make the Velo Ecosystem more robust and the Velo Network more usable and secure.

In Phase 1, slated to be fully launched at the end of Q1 2021, the Velo Protocol will consist of two main components: a Digital Credit Issuance mechanism and the basic version of the Digital Reserve System. During Phase 1 operations, we envision having only a few Trusted Partners operating in the remittance and money transfer space. During this phase, VELO tokens will have already been listed on multiple exchanges and both the Digital Credit Issuance mechanism and DRS and its algorithmic rebalancing operations will be fully tested under active use. An independent foundation will be responsible for overseeing the Velo Protocol and they will hire a 3rd party to add another layer of oversight, so all participants are confident in the Velo Protocol's operation from the first day.

In Phase 2, the plans are to add a Decentralized Velo Crypto Exchange that will help facilitate deep cross asset liquidity for VELO tokens and digital credits. Eventually, the exchange may open to trading other digital assets. The OTC service will be operated through the Velo Crypto Exchange, helping to add critical liquidity in the first year of operations. Other partners may also be invited at this point to participate as liquidity providers on the exchange. Deep liquidity will promote higher transaction volumes, tight spreads, and massive user adoption. Phase 2 is planned to be completed and running by the end of Q3 2021, if not earlier.

In Phase 3, once the Velo Ecosystem is full of Trusted Partners, each with many actively engaged users, Velo will look to offer decentralized lending solutions for those who want to





borrow digital credit. The prevalence of high digital credit flow at this stage will allow Velo to build smart lending functionality that connects participants to each other in a reliable and safe way. Additionally, Phase 3 will also include the introduction of a mechanism to let the community vote on certain parameters of the Velo Protocol, that will include (but is not limited to) the addition of new functions, types of assets, and lending rates. The specific details of this mechanism are still being discussed. Phase 3 is planned to be completed by Q1 2022.

In Phase 4, Velo will add in a Reputation System for partners that will evaluate historical use of the Protocol and the Velo Ecosystem and allow favorable terms for digital credit issuance, lending, and access to certain features. Phase 4 will involve the building of a worldwide network of fiat, digital credit, and VELO token on and off ramps. This step will usher in real world liquidity and interoperability for all Trusted Partners and end users. Phase 4 should be complete by Q3 2022.

Together, all these components will allow Trusted Partners to tap into the reach, operational efficiency, and transparency of the Velo Protocol and its underlying distributed ledger technology. The Velo Protocol enables multiple business use cases that are all based on its core function: issuing digital credits that are tied to fiat deposits and backed by VELO token collateral and that can be used for frictionless value transfer with guaranteed settlement.

## **PHASE 1**

### **2.1 Digital Credit Issuance**

The Digital Credit Issuance mechanism allows any vetted business (i.e., Trusted Partner) on the network to receive digital credits by posting VELO tokens to the Velo Protocol. The Trusted Partner does this to enable trustless settlement of the digital credits in the system. The Velo Protocol locks the VELO tokens in a smart contract that is tied to a fiat deposit held by the Trusted Partner as well as the digital credits. This 3-leg contract ensures final settlement of digital credits throughout the Velo Network and ties the VELO collateral to both the fiat deposit and the digital credit.

The Velo Protocol diagram below show the way the Digital Credit Issuance will work. The Foundation is the independent entity that holds all non-circulating VELO tokens and oversees operation of the Velo Protocol. VELO tokens act as collateral to the digital credit and are managed by the Digital Reserve System (DRS). The Trusted Partner buys the VELO tokens from the market as needed or borrows the VELO tokens from the Foundation for a fee. These methods for obtaining VELO tokens are demonstrated in exhibit 3.





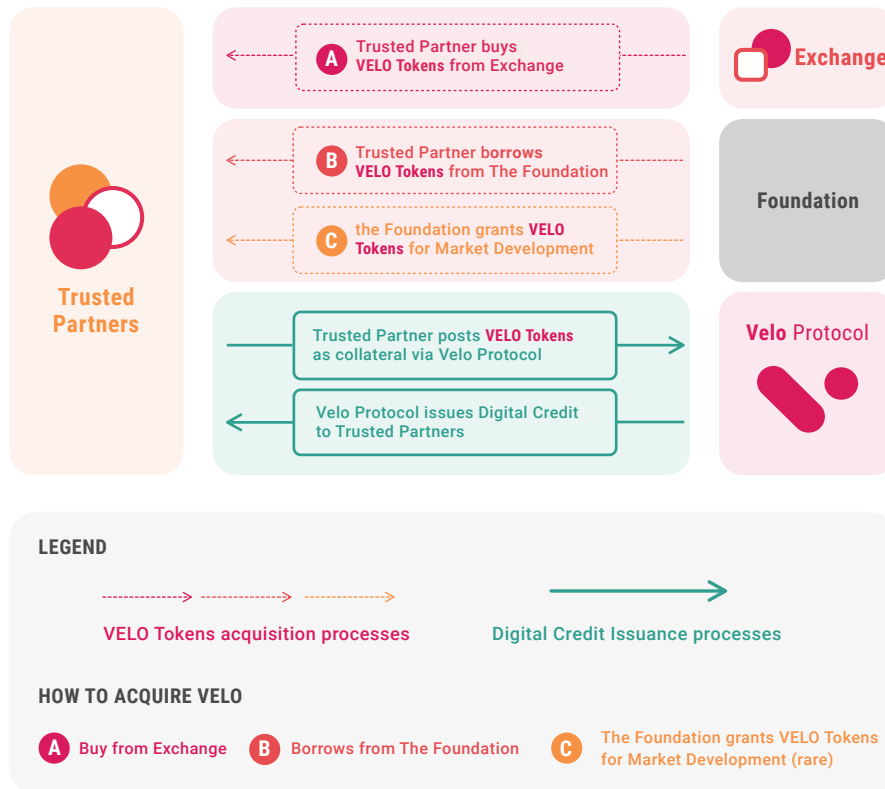


Exhibit 3 : Velo Protocol

## 2.2 Digital Reserve System

The other key component of the first version of the Velo Protocol is the Digital Reserve System, which is an algorithmic rule set applied via smart contract that manages the Reserve Pool and the individual Collateral Pools backing each issuance of digital credit. In later development, the DRS will also manage the lending of VELO tokens to Trusted Partners.

The goal of the DRS is to achieve efficient token supply management while ensuring digital credits are backed by the proper amount of collateral and are tied to the value on initial fiat deposits. The DRS is comprised of a rebalance mechanism that works between the Reserve Pool and Collateral Pools backing digital credit and fiat deposits by adjusting VELO token numbers based on VELO token price so at any given time the locked VELO collateral is of equivalent value to the digital credits.



## 2.2.1 Reserve Pool

Within the Digital Reserve System construct is a Reserve Pool of VELO tokens held by the Foundation. The DRS can use the VELO tokens held in the Reserve Pool to manage the value of the collateral backing digital credits and fiat deposits. This management will ensure that settlement of credits in the Velo Network is guaranteed. The DRS will also track the Reserve Pool to Collateral Pool ratio to ensure that the rebalancing mechanism operates in the most efficient manner within prescribed risk limits. Initial stress testing of the system identified the highest stress scenario as one where digital credit issuance increases greatly while VELO price sharply declines. As the system is currently designed, this combination is highly unlikely as a large spike in digital credit issuance should create market demand for the VELO token and increase its price. In any event, the DRS will include risk parameters and limits around a minimum Reserve Pool to Collateral Pool ratio coupled with actionable contingency plans that secure the system's operation.

## 2.2.2 Maintaining Velo Collateral Pools' Value Link with Digital Credit and Fiat Deposits

The Digital Reserve System will algorithmically rebalance the VELO token Collateral Pools backing the issued digital credit to maintain a 1:1 value link between the digital credit and the VELO token and the original fiat deposit. When a Trusted Partner received a fiat deposit from an end user, they then engage the Velo Protocol to generate a digital credit by posting and locking an equivalent value of VELO tokens via the Velo Protocol. The DRS then tracks these pooled tokens by assigning them to a collateral pool that is linked with the digital credit issued and adjusting the amount of tokens in the pool at any given time to maintain the value at initial issuance.

At the time of creation, the value of the digital credit equals the value of VELO tokens deposited as well as the fiat original deposited with the Trusted Partner. After this period, however, the price of VELO tokens will naturally fluctuate on the open market as a function of supply and demand. In response, the DRS will automatically rebalance the amount of VELO tokens in the Collateral Pool to maintain the 1:1 value link with the value of digital credits created. If the price of VELO tokens goes up, then VELO tokens will be removed from the Collateral Pool and returned to the Reserve Pool. This action reduces the number of tokens in the Collateral Pool to maintain 1:1 link between collateral value and digital credit value. If the price of Velo Token goes down relative to the digital credit, then the DRS will add VELO tokens to the Collateral Pool from the Reserve Pool, to maintain the value link of collateral value and digital credit value.

An Oracle system that intelligently filters specific pricing sources will determine Velo price for rebalancing and its methodology will be published to the community prior to use to maintain transparency. Contingency plans will be in place to account for severe market dislocations and trading halts where a price is not available.



## DRS REBALANCE MECHANISM

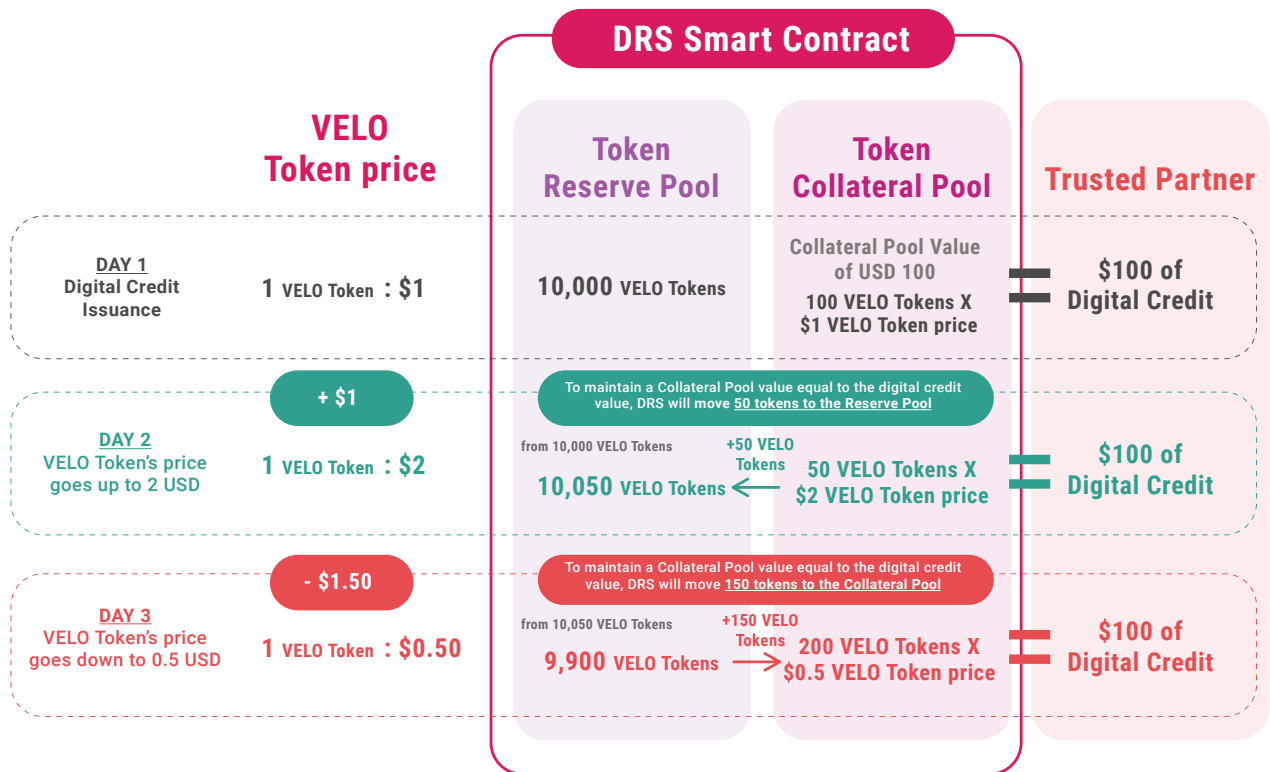


Exhibit 4 : DRS Rebalance Mechanism

### 2.2.3 The Foundation and Third-Party Oversight of the Velo Protocol

Once Velo Labs generates VELO tokens they will be transferred to an independent Foundation to ensure transparency and proper governance. The Foundation will be responsible for monitoring the function of the Velo Protocol. This will include the Digital Credit Issuance mechanism, the Digital Reserve System, and the balances and flows of the Reserve Pool, Collateral Pools, and other VELO token pools that relate to Community and Strategic Development. In addition, the Foundation will hire a 3rd party to audit all aspects of the Velo Protocol, from code function, token balances, and general operations. The Velo Team hopes this level of disclosure will give confidence to market participants and Trusted Partners as well. Details on the Foundation will be forthcoming later.



## **PHASE 2**

### **2.3 Velo Decentralized Crypto Exchange and OTC**

To promote liquidity in VELO and involve more participation in the Velo Ecosystem from both new and existing partners, Velo plans to build its own decentralized exchange (DEX) for the exchange of Velo trading pairs only. The exchange will display an order book for VELO tokens and digital credit pairs stacked with liquidity from a collection of participants. All members will require being vetted by Velo to be reliable liquidity providers before being allowed to join. Participants will be dedicated market making firms, Trusted Partners that want to optimize the use of their digital credits and VELO holdings, digital asset management firms, digital banks, and other exchanges that meet the requirements of Velo. Velo will operate an OTC service through the Velo Crypto Exchange, helping to add critical liquidity in the first year of operations. The purpose of the DEX will be to provide a robust marketplace to exchange VELO for digital credits and other digital assets. With more liquidity and trading volume, spreads between digital credit pairs will narrow and the entire value transfer system will become more efficient. Velo is currently exploring with its legal advisors the licences and regulatory approvals required for it to conduct such services in different jurisdictions.

## **PHASE 3 and 4**

### **2.4 Decentralized Lending of Digital Credits**

The holy grail of traditional banking disintermediation is decentralized peer to peer lending. Although this brings a host of regulatory challenges, Velo feels that creating a decentralized lending operation between businesses is a more immediately viable goal. The very same mechanisms used in money transfer can be adjusted to allow digital credits to be lent between Trusted Partners. Again, digital credits would represent real world fiat deposits in the network and also be backed by VELO token collateral.

The benefit of using Velo Network would be in receiving dynamic lending rates that adjust to supply and demand for digital credit loans. Pricing would be transparent and representative of real-world demand from business partners. In Phase 3, once the Velo Network has proven itself as a safe, fast, and cheap method of value transfer, development will move to create a democratic and fair decentralized business to business lending network as well.

### **2.5 Voting on Changes to the Velo Protocol**

Initially, the rules of the DRS will be set by Velo Lab's developers to ensure smooth operation of the nascent Velo Protocol as the network gathers users and liquidity. As the Velo Ecosystem grows and the distribution of Velo Token holders becomes more decentralized, a



voting mechanism run by an independent Foundation, will be responsible for adjusting the rules implemented by the DRS. Perhaps all Velo Token holders, who will be impacted under any applied changes to the DRS, will be asked to vote on rules and policies. The policy changes could include caps on digital credit issuance, setting of lending rates, setting of borrowing rates, adding functionality to the DRS, and the specifics of Velo collateral pool rebalance operations. The specific voting mechanism for the governing council has yet to be determined.

## **2.6 Reputation System**

Leveraging proprietary data gathered over time, the Velo Protocol aims to provide data analytics in real time, and to tailor its operations to deliver credit scoring tools to rate Trusted Partners. After an extensive history of being a “good actor” and a valued part of the Velo Ecosystem, a Trusted Partner would obtain a High Reputation Score. Obtaining this status would unlock the ability to borrow VELO tokens from Velo Labs as part of the process to obtain digital credits. Negative effects associated with defaulting on payment of fees on borrowed tokens would be reflected in a Low Reputation Score, resulting in limited access to the Velo Ecosystem. Penalties and fines could also apply.

## **2.7 A Network of Fiat to Digital Asset On/Off Ramps**

In order to fully realize the vision of Velo as a decentralized settlement network that allows partners to safely and securely transfer value between each other in a timely and transparent way, Velo will seek out partners that allow for exchange between fiat and digital assets, including the VELO token. By building an extensive global network of digital banks and regulated cryptocurrency brokers and exchanges, the Velo Network can ensure that the VELO token is collateral that has real world value and guarantees cash settlement, should the need arise. The Velo team is in the process of actively engaging with potential partners to make the goal of decentralized settlement network with fiat off ramp capability a reality.



# 3 ARCHITECTURE

Velo consists of a collection of protocols and software objects that make up the components described so far in this paper. It pulls inspiration from various blockchains and software systems to achieve its goals.

## 3.1 Overview

Velo is a set of smart contracts which are used to issue digital credit on an extension of the Stellar network called EvryNet that supports smart contract functionality. The VELO token is issued on the Stellar blockchain network, which is used for VELO token's transaction settlement and clearance.

VELO tokens and the digital credits are ordinary Stellar assets, subjected to all the rules and semantics of all Stellar assets. Stellar provides a solid foundation for maintaining a robust ledger of account balances. However, Stellar does not support the complex smart contract semantics necessary to build the entire Velo Protocol on top of it, hence, the smart contracts can be built using any smart contract platform such as Ethereum, Tendermint, or Evrynet - an intelligent financial service platform.

Velo Protocol will utilize a cross-chain protocol called 'Warp', co-developed with Evrynet, to provide a bridge between two different blockchains, Stellar Blockchain, designed for real-time, reliable digital assets movement and a Smart Contract Chain, which provides the ability to deploy and execute smart contracts in order to build the Digital Reserve System.

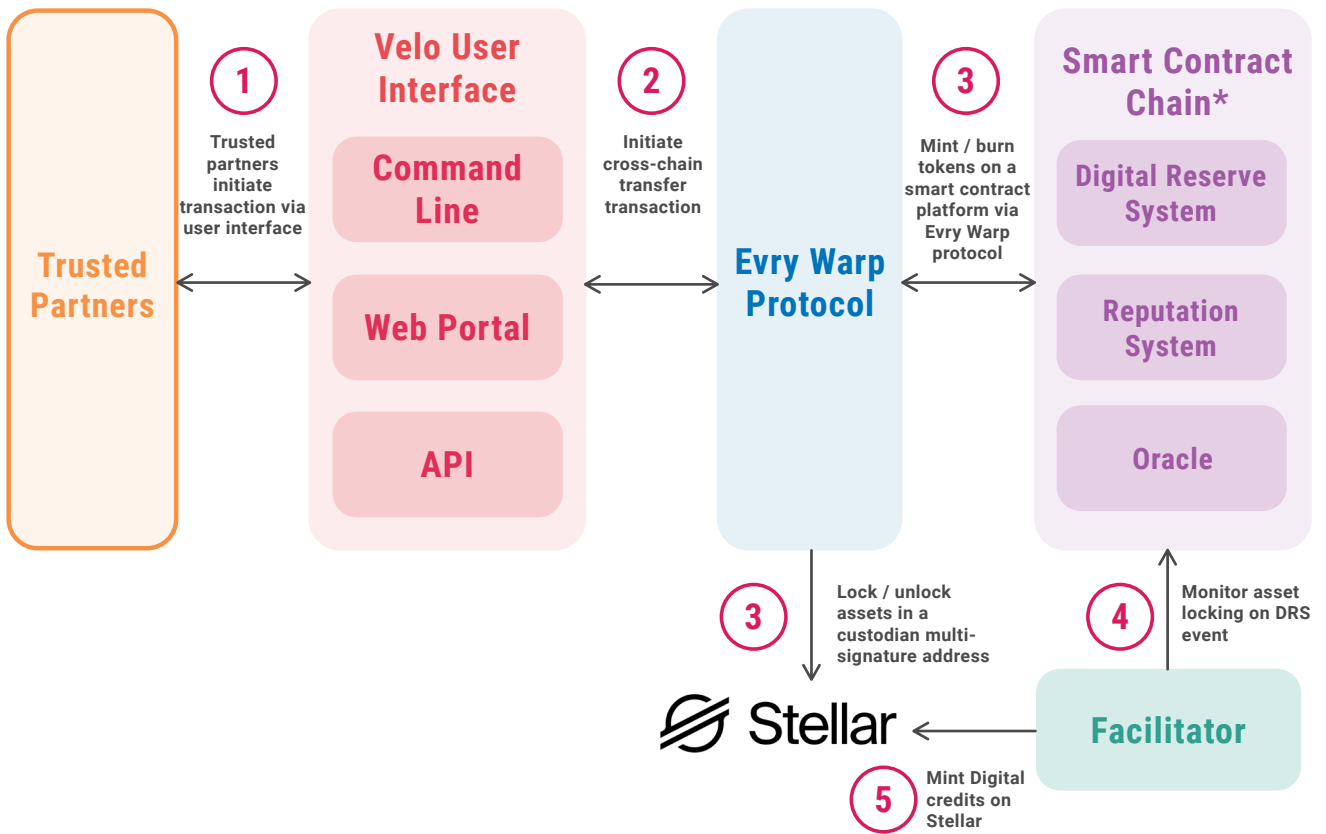
Exhibit 5 shows the overall process flow for the Warp Protocol

## 3.2 Moving the Stellar Asset to a Smart Contract Chain

To mint digital credits through the Velo Protocol, Velo Token as an ordinary Stellar asset must first be transferred to a smart contract chain in order to lock VELO tokens on DRS as collateral for the digital credit.

Velo uses 'Warp' protocol to move VELO tokens from the Stellar chain to a smart contract chain. Trusted Partners will interact with 'Warp' through a command line-tool, API, or web portal. While frontends will be connected to the 'Warp' protocol, they are also connected to a smart contract chain to facilitate Trusted Partner interaction with the DRS smart contract.





\*Velo Protocol is designed to support various smart contract platform including Evrynet smart contract platform

Exhibit 5: Process Flow for Warp Protocol





The 'Warp' protocol uses Stellar's Hash Timelock Contract (HTLC) to implement cross chain swaps between Stellar and a smart contract chain. On a smart contract chain, a smart contract for managing the cross chain asset needs to be deployed in order to support moving the Stellar asset to a smart contract chain. The smart contract for managing the cross chain asset needs to implement the following interface:

```
Interface{  
  
    Mint(amount, hash(secret), timeout, targetAddr)  
  
    Claim(secret)  
  
    BalanceOf(addr)  
  
    Transfer(amount, destAddr)  
  
    Burn(secret)  
  
}
```

After the 'Warp' protocol has locked VELO tokens on the Stellar chain, the 'Warp' protocol will then mint VELO tokens on the smart contract chain and lock it with the hash(secret) given by a Trusted Partner.

Later on, the Trusted Partner must call the 'Claim' method with the secret in order to claim VELO tokens on a smart contract chain. Subsequently, the Trusted Partner can lock their VELO tokens in the smart contract chain with the DRS contract in order to mint

### 3.3 Minting Digital Credits

The Digital Reserve System provides the following interface:

```
Interface{  
  
    Mint(peggedValue, peggedCurrency, amount, abv)  
  
    Redeem(amount, abv)  
  
}
```

Once a Trusted Partner has deposited VELO tokens to a smart contract chain, a Trusted Partner can "lock" its VELO tokens up in exchange for digital credits by calling 'Mint' method on the Digital Reserve System Smart Contract (DRSSC). The Digital Reserve System uses the digital credit/fiat conversion rates in a smart contract in order to stabilize the price as a parameter. Later on the DRSSC will log the event into a smart contract chain.



Trusted Partners with a longer transaction history and better reputation within the system can have a larger credit line to mint a digital credit. The specific credit line computation is left for future work.

Trusted Partners can also redeem their digital asset for VELO tokens using the 'Redeem' method. This method causes the Trusted Partner's digital credit balance to decrease, and release VELO tokens.

Finally, the Trusted Partners can move VELO tokens from a smart contract chain to Stellar chain through the 'Warp' protocol.

## Summary of operations

Method	Effects
Mint	Digital Credit is minted, the Velo Tokens holds by Trusted Partner on a smart contract chain decreased.
Redeem	Digital Credit is decreased, the Velo Tokens holds by Trusted Partner on a smart contract chain increased.

### 3.4 Getting Velo Token-Fiat Exchange Rates

In order to accept credit creation and redemption, the DRSSC must track an accurate estimate of the Velo Token-fiat exchange rates. The DRSSC will utilize the oracle protocol, such as [Provable](#), [Chainlink](#), etc, on a smart contract chain to get Velo Token-fiat exchange rates once there are credit creation, redemption, and rebalancing events.



# 4 USE CASES

Trusted Partners can use a digital credit issued via the Velo Protocol in many ways, including remittance, payments, lending, and loyalty points, or other forms of value transfer. The following use cases present examples of the value transfer pathways digital credits will enable. Cross border remittance will be the focus of the Velo Network in Phase 1 of development. The other use cases will come into play later in the Velo story.

## 4.1 Cross Border Remittance

Global remittance flow is enormous. In 2018, global remittance flow was estimated at \$700B<sup>1</sup> ([The World Bank, 2019](https://www.worldbank.org/en/news/press-release/2019/04/08/record-high-remittances-sent-globally-in-2018)). Remittance in Southeast Asia (SEA) amounted to \$63.9 billion in 2016, while transfer fees grew from 3% to 7.1% over the six years prior. The high transfer fees are partly due to legacy technology in the formal remittance sector as well as limited access to formal currency exchange markets.

Traditionally, a Money Transfer Operator (MTO) conducts cross-border transactions using a single server to record transactions among its international subsidiaries, going through traditional financial institutions or entering into a bilateral agreement with an MTO in another country. This limits the number of partners MTOs have, creating a fragmented and uncompetitive market, resulting in high transaction costs. The Velo Network allows Trusted Partners to transact without intermediaries since Velo's non-profit entity and the Velo Network's Digital Reserve System (DRS) operates under pre-set committed rules that ensures VELO token collateral back every fiat deposit and digital credit. Velo, thus, creates more efficient financial infrastructure that will help our partners and consumers send money using digital assets cheaper and faster.

There are two ways MTOs can use the Velo Protocol to participate in the Velo Ecosystem to conduct their business: either by being a Trusted Partner, or else by working through a Trusted Partner. Initially, smaller MTOs can sign up with an existing Trusted Partner who is already in the Velo Ecosystem. Using this gateway allows the MTO to enjoy the benefits of the Velo Ecosystem, namely the expansion of their remittance corridor possibilities without the corresponding increase of working capital that would be required in order to deposit fiat in every country they want to transfer money.

Alternatively, an MTO applies to become a Trusted Partner by subjecting itself to a thorough vetting process. Once approved, the MTO, now a Trusted Partner, then can accept smaller MTOs fiat deposits and use VELO tokens through the Velo Protocol to get issued digital credits in the form of their local fiat currency. The Trusted Partner MTO will then be issued an equivalent value of digital credit that they can send to other Trusted Partners or other MTOs that are also linked to the Velo Ecosystem.

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<sup>1</sup> "Record High Remittances Sent Globally in 2018 - World Bank ..."  
<https://www.worldbank.org/en/news/press-release/2019/04/08/record-high-remittances-sent-globally-in-2018>  
Accessed 12 Jul. 2019.



In all cases, the MTO improves speed and transparency for all their transactions because the digital credits are sent using distributed ledger technology and validated using the Stellar Consensus Protocol.

Velo Protocol allows Agents and partners to connect directly and digitally instead of through the multiple layers of the current financial system, saving costs and creating massive efficiencies, speeding up the entire process.

## **MTO Onboarding And Guaranteed Cross Border Settlement Walkthrough:**

An MTO in Thailand has decided to sign up with a Trusted Partner already connected to the Velo Network because they want to enjoy the speed, security, and low cost of blockchain based value transfers. They deposit a small amount of fiat in the Trusted Partners trust bank account. The deposit amount is usually a few days' worth of their average money transfer volume. The Trusted Partner instantly engages the Velo Protocol by posting VELO tokens of the equivalent value as MTO's fiat deposit. In return, the Trusted Partner receives the same value of digital credits that will be assigned on the blockchain to the MTO's sub account.

The VELO tokens are now locked in a smart contract that links to the settlement of the digital credit in the system. As a result:

1. The MTO is credited a digital representation of their fiat deposit that they can use to facilitate transactions in the network
2. The MTO can now send and receive money to and from any other MTOs in the Velo Network regardless of location
3. VELO tokens now guarantee the MTO settlement of funds, via smart contract, should the Trusted Partner fail to meet their obligation for end of period settlement
4. The fiat deposit now guarantees the Trusted Partner settlement of funds, via smart contract, should the MTO fail to meet their obligation for end of period settlement

An end user of the MTO will not see the VELO tokens, the smart contract, the blockchain, or even the digital credit. For example, if a migrant worker employed in Thailand wants to send money home to Cambodia, he or she will approach an MTO, hand over the fiat, put in the destination details and pay the fees. Whether the MTO is connected to the Velo Network or not, the migrant worker goes through the same steps. For the migrant worker, the only difference they will experience by using a MTO connected to the Velo Network is less fees, faster transaction times, and broader coverage for send and receive destinations.



## MTO ONBOARDING PROCESS

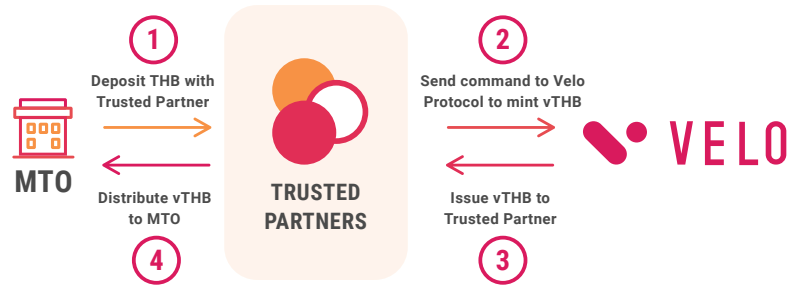


Exhibit 6: MTO onboarding process

## NEW CROSS-BORDER TRANSFER PROCESS

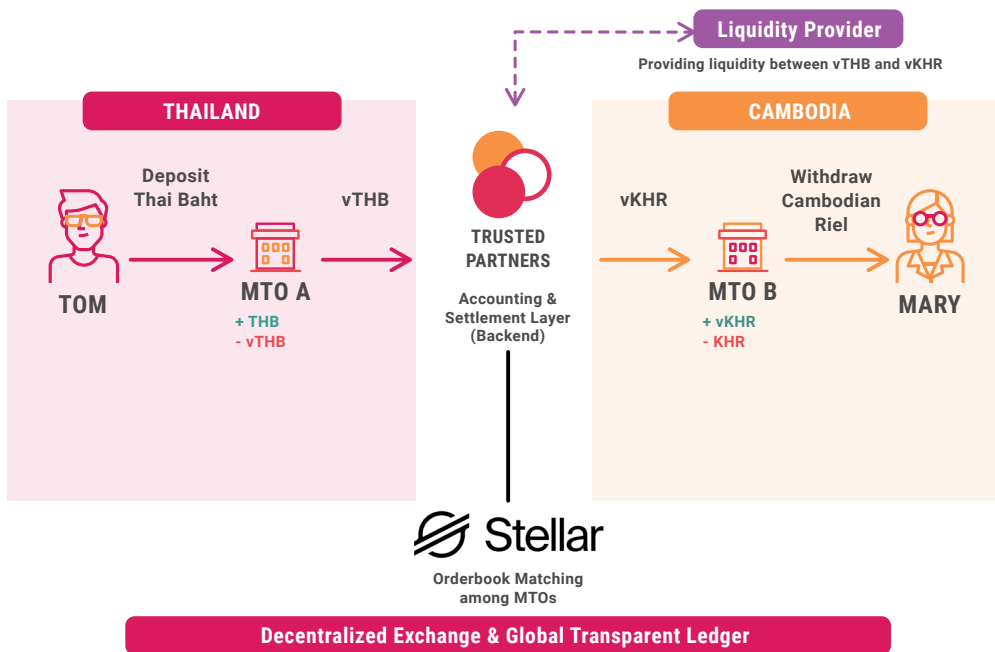


Exhibit 7: Trusted Partner using the digital credits received via the Velo Protocol



## 4.2 Payments

Currently, payments are scattered throughout a vast expanse of mediums and systems, with myriad endpoints and start points, creating an endless number of permutations for consumers and businesses, and these options only continue to grow. The amount of digital payments in Southeast Asia was estimated at USD \$500B in 2016 <sup>2</sup>([World Payments Report 2018](#)), while the options for sending payment to a business are too numerous to count. The process of coordinating and integrating all these methods from payment confirmation to settlement can take days due to the friction experienced at each of the various counterparties along the journey, even for the most widespread global payment service providers.

The Velo Ecosystem has the potential to consolidate the market in Southeast Asia into a widespread payment gateway with digital and physical payment points. This means digital credits can be used for payment and directly sent, received, and settled through Velo's network of Trusted Partners. This also represents an enormous opportunity and use case focused on the unbanked population. The unbanked worker can utilize the virtual or physical agent or e-wallet to make a payment using digital credits outside of the traditional banking system. Velo's Network of Trusted Partners represents a way to capture this massive flow by allowing customers to make payments with any retailer or partner via their last mile endpoints, creating a massive network of payment points that can be settled directly with payment partners.

## 4.3 Lending

Since the credit crunch in 2008, the lending market is undergoing a massive shift as the banking industry faces competition and innovation from digital banking, finance startups and disruptors. In addition, there are greater challenges to access financial loans via conventional banking institutions due to added regulation and tighter credit requirements.

Traditional bank lending, credit scoring models, know-your-customer policies, as well as disbursement, repayment and collection procedures are all changing rapidly as old models are being replaced in the digital world. A blockchain lending, disbursement, and repayment solution streamlined by stable digital credits would remove the steep barriers for small and medium borrowers. By issuing a digital credit balance using the Velo Protocol, peer-to-peer and small businesses would be able to borrow to digital credits more efficiently without the barriers of the traditional banking model.

Lending using the Velo Protocol allows for a Trusted partner to receive customer credit and KYC data, then process those inputs in their own systems to make a lending decision. After the Trusted Partner decides to lend, they can immediately disburse funds through the Velo Ecosystem, all outside the time consuming restrictions of the existing banking industry.

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<sup>2</sup> "World Payments Report 2018 – World Payments Report."  
<https://worldpaymentsreport.com/resources/world-payments-report-2018>.  
Accessed 12 Jul. 2019.



The use of a digital credit system makes disbursements, repayments, and collection immediate in terms of acceptance and verification. The speed of disbursement and verification also means the capital becomes more efficient and, therefore, cheaper, providing an advantage for a lender using the Velo Protocol.

Across the Asia Pacific region (excluding China), the volume of consumer lending in 2017 was US\$824.55m <sup>3</sup>([Asia-Pacific Alternative Finance Industry Report 2018](#)) with most of the investor activity being derived from individual investors (57%) rather than institutional investors (43%). According to Lending Global Market Report 2019, the total market capitalization of cryptocurrency lending platforms is estimated nearly US\$8,200B by 2022, illustrating the vast market opportunity. Through the Velo Protocol and Velo Ecosystem, lending for Trusted Partners has a chance to be transformed, streamlined, digitized and made more efficient and cheaper by bypassing traditional banking infrastructure.

## 4.4 Loyalty Points

Gift cards or cash cards are an alternative form of cash that retailers sell as part of their marketing strategy. Generally, this cash card is bought as a gift, hence the name “gift card”. The gift card can be used as cash at the store responsible for issuing the card or at its business partners. Another alternative form of cash, Loyalty points, cannot be bought, but can be earned through promotions or purchasing activity at the store. Loyalty points are used to retain existing customers by encouraging them to come back and spend points in exchange for some products or services at the store.

Both gift cards and loyalty points cannot be cashed out and, in most cases, have an expiry date. Consumers often do not end up using the card, resulting in a waste for the purchaser, as well as a potential lost opportunity for the retailer, as the average gift card holder spent 38% beyond the value of the card.

Velo Ecosystem can address this issue by enabling a digital credit exchange on a secondary market for gift card and loyalty points that are issued on Velo Protocol. This allows consumers to freely trade their unspent points to others who want them, creating a more efficient market for points.

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<sup>3</sup> “ASPAC Alternative Finance Industry Report 2018 - KPMG Australia.” 3 Dec. 2018, <https://home.kpmg/au/en/home/insights/2018/12/diversifying-growth-asia-pacific-alternative-finance-report.html>. Accessed 12 Jul. 2019.





## LOYALTY POINTS

### LOYALTY NETWORK MARKET SIZE



**\$9.3B**  
by 2024

The global loyalty management market was valued at **\$2.617B** in **2018** and is expected to reach a value of **\$9.3B** by **2024**

### CASH/GIFT CARD MARKET SIZE



**\$1.6T**  
by 2023

The global gift cards market size was valued at **\$585,311M** in **2016**, and is projected to reach **\$1,591,461M** by **2023**, growing at a CAGR of 15.7% from 2017 to 2023

Exhibit 9: Loyalty Points



# SUMMARY

Velo aims to create a decentralized settlement network that allows partners to transfer value safely and securely between each other in a timely and transparent way. It uses Stellar to increase liquidity and transaction volume, and it has a robust feature set that enables Trusted Partners to interact effortlessly with each other and offer services across physical and digital barriers. The VELO token acts as collateral to ensure settlement, representing the value of digital credits and fiat deposits in the network.

The many phases of development are designed to test, improve, and perfect the functionality of the Velo Network while adapting to the changing marketplace and needs of our business partners. Phase 1 will focus on deploying a bullet proof core system that stands against the test of active, high volume money transfer transactions among a limited number of partners. Phase 2 will introduce a decentralized crypto exchange that will promote liquidity for all digital credits and VELO token pairs and allow the community to confidently grow. Phase 3 and 4 will focus on adding new financial products that can serve the underserved and underbanked community, like decentralized lending. This stage of development will also seek to decentralize the governance of the Velo Protocol as well as build out cash in and cash out points for digital credits and VELO tokens.

Velo will build real world use cases for the VELO tokens and digital credits. Through its network of partners Velo has the physical and digital reach to improve the lives of millions of underbanked and underserved people by providing fast, affordable financial services, powered by innovative technology, connecting nontraditional and traditional financial institutions together into a seamless web. In the end, Velo seeks to create a global decentralized settlement value transfer system that can be used as the backbone of a new paradigm for delivering financial services to the world.



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## VELO LEXICON

Term	Definition
<b>VELO Token</b>	Cryptocurrency used in the Velo Protocol
<b>Foundation</b>	Entity that holds VELO tokens (Velo Reserve Pool, Velo Collateral Pools, Velo Deposits)
<b>Digital Credits</b>	Digital value units created by posting VELO tokens
<b>Velo Protocol</b>	Core Engine of Velo Labs which is comprised of the following: <b>Digital Credit Issuance</b> = Protocol that issues Digital Credit <b>Digital Reserve System</b> = Protocol that manages Velo collateral in order to maintain Digital Credit value
<b>Trusted Partners</b>	Pre-vetted business entities that post Velo Tokens in return for Digital Credit
<b>Regulators</b>	Central Bank, Security and Exchange Commission, Ministry of Finance
<b>Velo Ecosystem</b>	Network of Trusted Partners and their secondary business/banking/market connections



