

Waya Collective: A Decentralized Autonomous Production Network

March 2022

Abstract

A new approach to our modern economy is needed to fulfill the ever-increasing need for goods and prosperity in an environment that reaches its capacities to accommodate demand. Waya Collective is this new approach to industrial production: a decentralized network of autonomous enterprises cooperating in a trustless system. All Collectives share the same building blocks and resources but are free to create any product or service. A Collective operates a single commercial function within a complex net of interdependencies. Collectives divide into more specialized units to grow. All members share ownership of their collectives. All production facilities within Waya produce for their local demand, amplified by access to shared knowledge, liquidity and a trustless trading environment.

1. Problem Statement

Our species progressed from having barely enough resources to survive to practical abundance. It is hard to grasp the exponential technological and economic growth we have experienced since the advent of the 21st century. Building the industrial value chains behind that growth affected 80% of our planet's surface, ushering in the Anthropocene.

We are at a tipping point; given our current industrial system and global demand, we consume 70% more resources than our planet can renew. The carbon emissions of our global supply chain are at the heart of this type of consumption, accompanied by inefficiencies like overproduction, understocking and wasteful packaging. The consumption will only increase as the emerging markets claim their rightful share of industrial production.

Supply chains have reached their limits. A container ship from Asia to North America spends two months in a traffic jam. We are stuck in a catch-up race to expand the infrastructure - we need to satisfy the already existing demand, and the gap is widening. The infamous container ship that blocked the Suez Channel, *Evergreen*, was when it left the dock in 2018 one of the largest ships ever built. Today (2022), she is not even among the top ten largest container ships. Large vessels reach the limit of seaworthiness and need ever enlarged ports and connecting infrastructure.

The benefits of the existing industrial system are evident but unevenly distributed. The global south and marginalized communities suffer most from unpriced negative externalities and exploitative practices. The current way of industrial production is to create global production centers to exploit cheap labor and utilize free pollution to ship goods worldwide.

The current global interdependent industrial production system is inefficient, fragile and exploitive.

2. Solution Principles

Waya aims to disrupt the traditional industrial production system and replace it with a more efficient, robust, and fair system. To create such a system, Waya pursues three fundamental principles. These principles build on top of each other, which does not mean that one principle is more important than the other; it means that the following principles are enabled by the prior. However, the principles are sometimes contradicting. In such a situation, an optimum must be found that maximizes all three principles to the degree that none of the other principles suffers significantly.

1. Equity:

Growth is created within Collectives, and they must be primary beneficiaries of this growth. Enabling Collectives to finance, use, and benefit from industrial assets is the heart of Waya. By enabling local production, Waya empowers the creation of local wealth. The wealth created within one Collective shall be distributed fairly among all members of that Collective, from management to workers on the production line. The principle is embedded in Waya through transparent Governance enforced by smart contracts.

2. Earth:

Negative environmental externalities often accompany growth. Waya must reduce those negative externalities by design: short supply chain, high production standards, produce to use and circular flow of goods. By imprinting sustainability into the value creation flow of Waya, we create a system that eats the old, dirty system and replaces it with a new ecological harmony. This principle is seeded in Waya through the inventory management that enables circular flows.

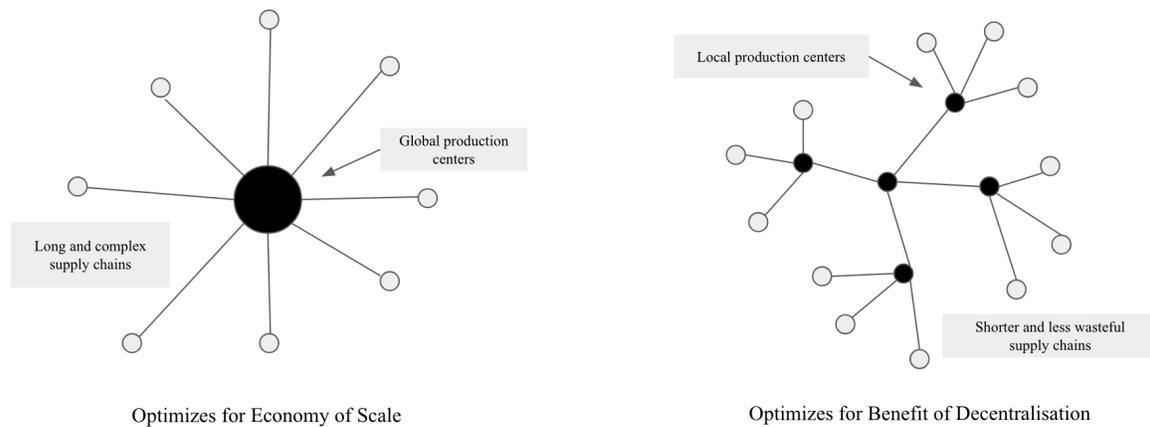
3. Effectiveness:

Waya Collective's long term economic output must be superior in terms of the product price, quality, quantity and availability compared to the old system. The commercial success of Waya is imperative as this alone guarantees that Waya's Social and Ecological impact unfolds. Superiority can only achieve this by deploying a novel technological approach to distributing goods, capital, and knowledge. This principle is executed by Waya through its inclusive Liquidity and Knowledge Protocol.

3. The Waya Economy

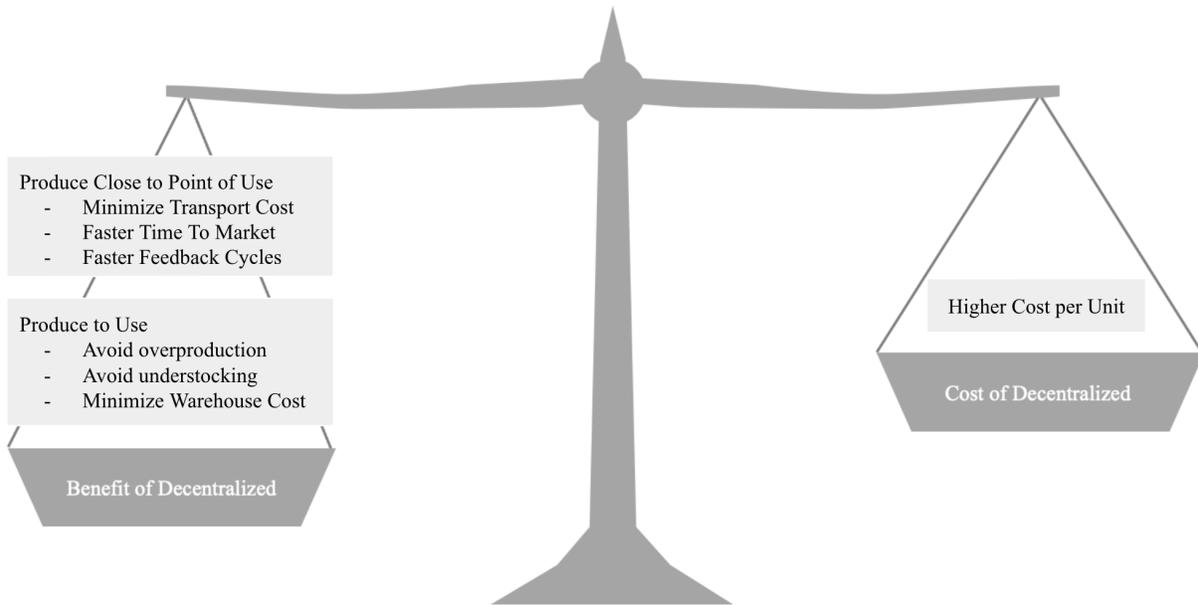
Many of the problems described are rooted in the degree to which the current production system is centralized. We see large production centers trying to stay connected via complex and fragile supply chains. The distance between consumer and producer detaches both. Our species leveraged central control to create even larger production centers. However, this centralized production system bloomed on unpriced negative externalities and practices of exclusion - opposed to a holistic and inclusive economy.

3.1 Figure 1: Centralized Productions vs Decentralized Productions



A holistic economy is an economy that takes unpriced negative externalities into account and optimizes the output across all factors. This optimal economy thus will have fewer and shorter supply chains by moving production centers closer to the consumer. The Optimal Degree of Decentralization (ODD) is industry-specific and can be found by balancing the *benefits of decentralization* vs the *cost of decentralization*.

3.2 Figure 2: Optimal Degree of Decentralization (ODD)



An ODD economy features national production centers for specific product categories while others are produced on a city, village, or even global level. The degree to which Waya Collective can decentralize an industry depends on the importance of scale vs the benefit of decentralization. For some product categories, such as steel manufacturing, the cost per unit increases drastically when decreasing the size of the operation, while the benefits for decentralization might be marginal. Other product categories, such as trending consumer goods, would heavily benefit from being produced close to the consumer. Beyond location, Waya Collective can address transportation to lower costs and reduce negative environmental impact, e.g. deploying slower-moving ships, moving materials and generalized products that become finalized at the point of use.

Decentralizing a production system has many benefits but also creates new challenges. Quality variance might increase if one produces in many factories across different countries instead of having one central factory in one country. The variance is due to different work cultures and quality understanding. Also, coordinating effort becomes larger instead of having one factory floor that one manager controls.

These challenges can only be addressed by consistent standardization and language across all factories. Coordination is achieved by utilizing the same underlying management system based on real-time information. Finally, all players must have a clear incentive to uphold standards and coordinate out of their interests.

4. Waya Collective

Waya is a DAO (decentralized autonomous organization) that builds and maintains a set of DApps (decentralized applications). All DApps of the Waya DAO work together to enable an enterprise's successful setup, maintenance, and growth. The enterprise is called Autonomous Collectives (AC) and administrates itself independently.

A Collective mirrors a cell; a cell has a nucleus that contains all the information needed to grow and operate the cell. Every cell builds on the same underlying organ, yet a cell can take on countless specific functions. The Waya Nucleus is the Autonomous Collective Operating System (ACOs). The cell organs are the Knowledge Sharing Protocol (KSP), a Liquidity Protocol (LP) and Autonomous Inventory Management System (AIM). After reaching a member count of around 150¹ people, the Collective divides into more specialized cells. Thus, Waya creates a standardized economic unit that can become infinitely complex without ever changing the fundamental rules that make Waya Collectives successful.

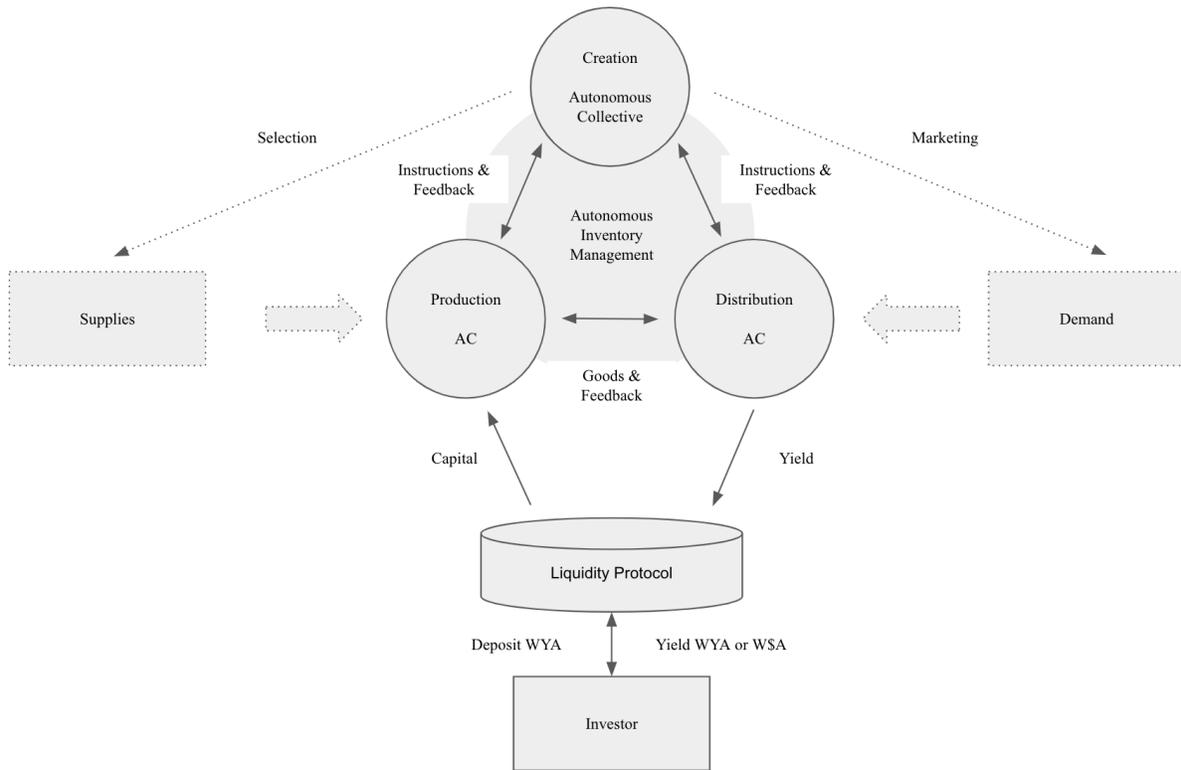
In Business terms, a Collective is a company that operates the Waya Franchise. All ownership of physical assets, including land and buildings, are transferred to the franchisee (Collective) over a growth cycle. The DAO treasury raises a small fee on all transactions within the network.

4.1 The Waya DApps:

- I. **Autonomous Collectives Operating System (ACOs):** Is the interface that a collective member uses to interact with the Waya Network via the Waya DApps. The Operating System also contains the Management Tools needed to operate and administrate a Collective.
- II. **Knowledge Sharing Protocol (KSP):** It contains all the information on how to construct and deconstruct a product and a knowledge creator register. The knowledge creators give up their rights on the IP in exchange for royalty from whoever uses their knowledge.
- III. **Autonomous Inventory Management (AIM):** The self-maintaining inventory system tracks the flow of value across the entire network, from accessing liquidity (LP) and knowledge (KSP) through the production process until a product is sold.
- IV. **Liquidity Protocol (LP):** The LP is the central tool for growth capital within the network. Waya governance token holders can deposit their WYA Tokens into the LP to earn yield.

¹ Further information about how we chose that number will be published in an extra Governance paper

3.1 Figure 3: The Waya Economy Archetype



Within the archetypical Waya Economy, three types of ACs cooperate to fulfill consumer demand.

The key signifier of a **Creation AC** is the strategic work behind new products (or even new industries). A Creation AC designs products, e.g. a fashion brand and markets them directly to the end-consumer. Everything within Waya starts with a Creation AC; without customer demand and a product-market fit, production or distribution is pointless. A Creation ACs bears the risk of finding product-market fit: the cost of creating a new product and testing its needs. The Creation ACs can request a collaboration with other ACs to produce the first samples and place them in stores.

The key signifier of a **Distribution AC** is that it connects Collectives and customers. A Distribution AC can be a fashion store that offers items from an internal marketplace. Creation ACs can only supply items across the network when items have reached a predictable demand within their lifecycle. A Distribution AC could also be a last-mile logistics service that transports the fashion directly to a consumer, triggered by order via e-commerce listing of the Creation AC.

The key signifier of a **Production AC** is physical manufacturing. The Production AC receives the instructions for an order by a consumer (network external or internal). The AC orders the materials needed to produce based on the specifications of the Creation AC. The Liquidity Protocol provides the liquidity required by the Production AC to buy the materials necessary to craft the product.

5. Autonomous Collective Operating System (ACOs)

Autonomous Collectives are the many nodes of the Waya Network. The Autonomous Collective Operating System enables all Collectives to share the same governance structure and access to the same resources (liquidity, knowledge and inventory). Practically, the ACOs is an interface between the members of a single collective, the network as well as the governance and compliance tool used to run the individual collective. Even though all Collectives share the same fundamental attributes they take on any form.

5.1 Collective Governance

- I. **Size:** A collective is hard capped at 150 people (Dunbar's Number, open to further examination*). If a Collective grows larger, it splits into two Collectives. The hard cap of the Collective by a number of its members is critical. Firstly, it ensures that all Collectives are similar enough to ensure the same governance systems can be used. Secondly, it reduces costs of management within the Collective because no complex management structure will be needed. Thirdly, the small size of the collective supports cohesion as well as innovation.
- II. **Participation:** All members of the Collective have the ability to vote on decisions of the Autonomous Collective and participate in the profits of the Collective. Practically, this direct participation will be facilitated by Collective-specific governance tokens. The use of the token provides a standardized and structured governance process for each facility to make strategic decisions. A Collective member's salary is based on a weighted function of contribution and feedback.

5.2 Shares Resources

- I. **Collateral:** When opening a Collective a number of WYA tokens must be locked. This Collateral serves as an on-chain dispute settlement mechanism. If a Collective intentionally and carelessly damages another Collective or the network at large, a Collateral is used to cover the cost. If a Collective is successful in operating the business their Collateral grows. A Collateral also determines the voting power of a Collective within the Waya DAO.
- II. **Access:** If a Collateral was deposited, the ACOs can be used to replicate an AC to serve an existing Collective complex or to open a new Creation AC. The liquidity and knowledge needed is supplied via ACOs as well as the tools to run the operations of the AC.

5.3 Open a New Collective

Waya Collectives are a semi-open system. Meaning any group of people or any person could open a Waya Collective. There are two fundamental different ways to open a Collective:

- I. **Replicate an existing Collective:** Replication can only happen within a complex of an already existing Collective. The option to replicate a Collective is restrained by the need of already existing Collectives. This need can be due to an AC growing large and needing to split or a Creation AC needs a *Supporting AC* or *Sub AC*. E.g. to expand a brand to another country or extend the product line. Replication means practically that a new company operates a Waya Franchise.
- II. **Creation of a new Collective:** A new Collective is a Creation AC that develops a new product, kicking off a new product life cycle starting with searching for a product market fit. A new Collective could also be something fundamentally new, like a new economic function or industry. These new collectives can either serve an existing complex or build their own new complex of ACs. Creation of a new Collective means opening a new company to focus on the creation of a new franchise and all its supporting functions based on all the knowledge already acquired by Waya.

In anycase, every person willing to setup an AC must run through the same process:

I. Bootcamp: A Collective Initiator must successfully absolve the Waya Bootcamp. These trainings include a mix of hard skills and soft skills as well as community building. This point is not only a condition but also a reason to open a Waya Collective. A person is less likely to be successful alone; however, if the person opens a Waya Collective, the person will be trained by people who already have successfully opened the type of AC the new member likes to replicate or started successful Creation ACs.

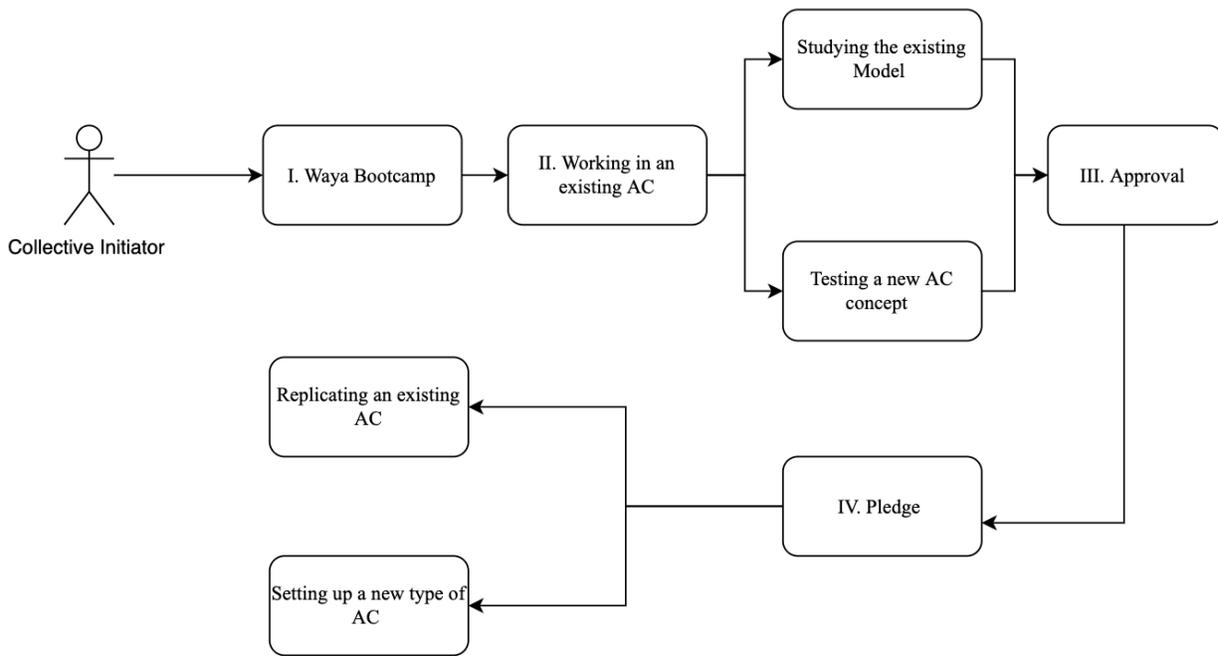
II. Working: After passing the bootcamp successfully and having learned all needed skills an initiator joins an existing collective. Within the already existing collective the initiator keeps studying the model that will be replicated or the initiator starts working on their new collective in collaboration with the existing collective to e.g. produce samples.

III. Approval: Receive approval from internal customers (e.g. a Creation AC). It does not make sense to open a new factory if there is no need. Opening a new Creation AC is always possible. External customers confirm the validity of their offering during the product-market fit evaluation. The initiators of the Creation ACs bear the risk for this evaluation.

IV. Collateral: Providing the required Collateral in WYA Tokens. The Waya Collective offers many resources to its members; to protect this value, new members must lock a certain amount of WYA tokens. The Collateral can only be unlocked if a Collective is resolved. The Collateral serves as *skin in the game* for new members; It can be used as worst-case insurance and slashed if a new member turns out to be rough or waste network resources irresponsibly. However, WYA tokens also entitle the owner to share the

total benefit created within the network. Therefore, the Collateral also enables every AC to benefit from the success of the entire network collectively.

5.4 Figure 4: Opening a New Collective



If all conditions are met, a new AC can open its doors. The Liquidity Protocol is triggered to set up the new collective and a template collective is built. The Collateral deposited into the new collective is locked in a smart contract that underlies the collective's relationship with the other collectives and the network at large. After a collective is set up, a small percentage of the yield generated by a collective is used to repay the liquidity Protocol. After the LP balance is settled, a small yield percentage increases the Collateral consistently in sync with the growth of the new AC.

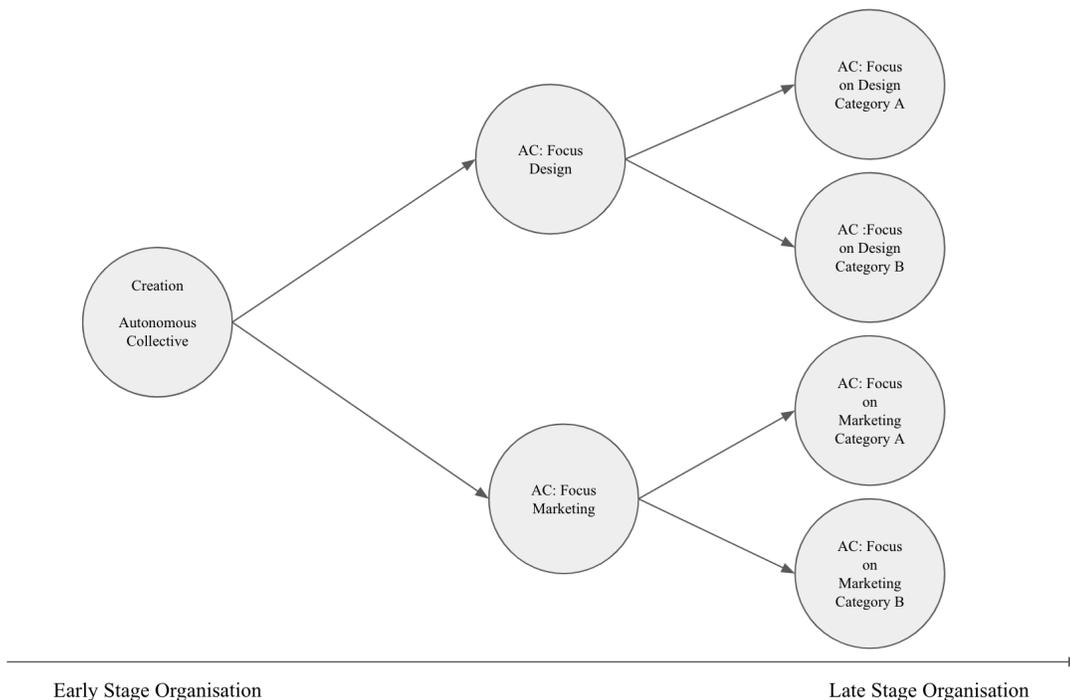
5.5 Collective Complex

Successful Collectives will soon reach the end of their capacity as they reach the hard cap of 150 members. To enable further growth the Collective can create their own network within the larger network: a **Complex of Collectives**. The underlying mechanism is simple: a collective outsources important revenue driving tasks such as “marketing” into a Sub-Collective.

A Sub Collective is different from a Supporting Collective. A **Supporting Collective** takes on a different business role. E.g. a Creation AC is supported by Production or Distribution ACs. A **Sub-Collective** takes on the same business functions as the original AC. The Sub-AC focuses on tasks within the value creation process of the original AC.

E.g. A Creation AC started a shoe brand. In the early life cycle of the brand it was sufficient to have one Collective with 150 people. However, with an increased global expansion capacity becomes scarce. Also, some key knowledge needed for an international expansion is missing within the original team. Instead of growing the organization traditionally, one or more members will leave the original Collective and start a Sub Collective serving the original AC. E.g. a member of the brand goes abroad and starts a marketing Sub-AC there. Critical to open a Sub-AC is that it must have its own profit and loss responsibility. The marketing Sub-AC of the shoe brand would sell its services to the original AC.

5.6 Autonomous Collective Evolution Cycles:



5.7 Open a New Type of Collective:

To create a new collective that e.g. focuses on a new industry, the proposing collective member must receive approval. This approval process has two main reasons. Firstly, to protect collective funds against unwise investments. Secondly, to not enter a market or product category the majority of members would reject. The approval process has two stages:

- I. **Recommendation Score:** The recommendation score is given by the working group of the Waya DAO and focuses on the business reasoning behind a proposal. The vetting process consists of basic reality checks of the proposed value creation process regarding market data and potential. Proposers who can prove relevant industry experience receive a higher score. The score is not binding but visible. If the proposal originated within an existing collective, the members of the collective will be asked to contribute to the vetting process.
- II. **Voting:** Everyone with WYA Tokens can vote on proposals. Winning proposals are tested and, if economically successful, replicated. The process of testing a proposal might be a lengthy and costly endeavor. Therefore, every proposal also needs to be equipped with a testing budget that influences the likelihood of successfully winning a vote. If the budget was not sufficient to finish a test, a project can hand in another proposal to receive additional development funds. The proposer receives a royalty proportioned to the proposer share in creating and testing the new collective value creation process through which a template is created. If this template is used successfully, the royalty owner is paid.

6. Knowledge Sharing Protocol (KSP)

One of the main reasons for choosing to build a Waya Collective instead of a traditional business is the Knowledge Sharing Protocol. The abbreviation KSP already indicates closeness to the traditional USP. A unique selling proposition can originate from superior marketing, products or processes (e.g. contain availability or speed of delivery). Marketing or brand perception is within the responsibility of a Creation AC. Product and process quality are anchored in the KSP. The KSP is what provides all Waya Collectives their competitive edge. Additionally, standardization and its enforcement is absolutely necessary for Waya Collectives to cooperate smoothly!

The KSP ensures that all knowledge created within the Waya Collective is protected and shared inclusively across all collectives. Knowledge creators are incentivized to participate as they will receive a royalty whenever their knowledge is used to create value within the network. Therefore, the KSP is not only a rich resource for all collectives but also an attractive way to distribute one's own knowledge and benefit from its fruits.

The KSP is a database containing all knowledge of Waya in the form of templates. These templates are unique and saved as NFTs. A knowledge creator may innovate on top existing templates. Enabling interconnecting several templates will stimulate the ability to innovate as well as enabling fair compensation for innovation. Therefore the KSP creates an incentive as well as the tools to build better factories and more amazing products, fast.

6.1 KSP and its Modules

Templates are divided into main three categories:

- I. **Main Modules:** Main Modules capture a detailed part of an industrial value creation process e.g. the process sewing garments or creating fabric on scale.
- II. **Sub Modules:** Sub Modules are parts of the Main Modules. Not every collective will do exactly the same as another but focus on certain sub categories of tasks. To enable this specialization every collective can customize their main module with Sub Modules.
- III. **Products Modules:** A product module describes an entire product including which materials are needed, the exact steps or products and the expected cost.

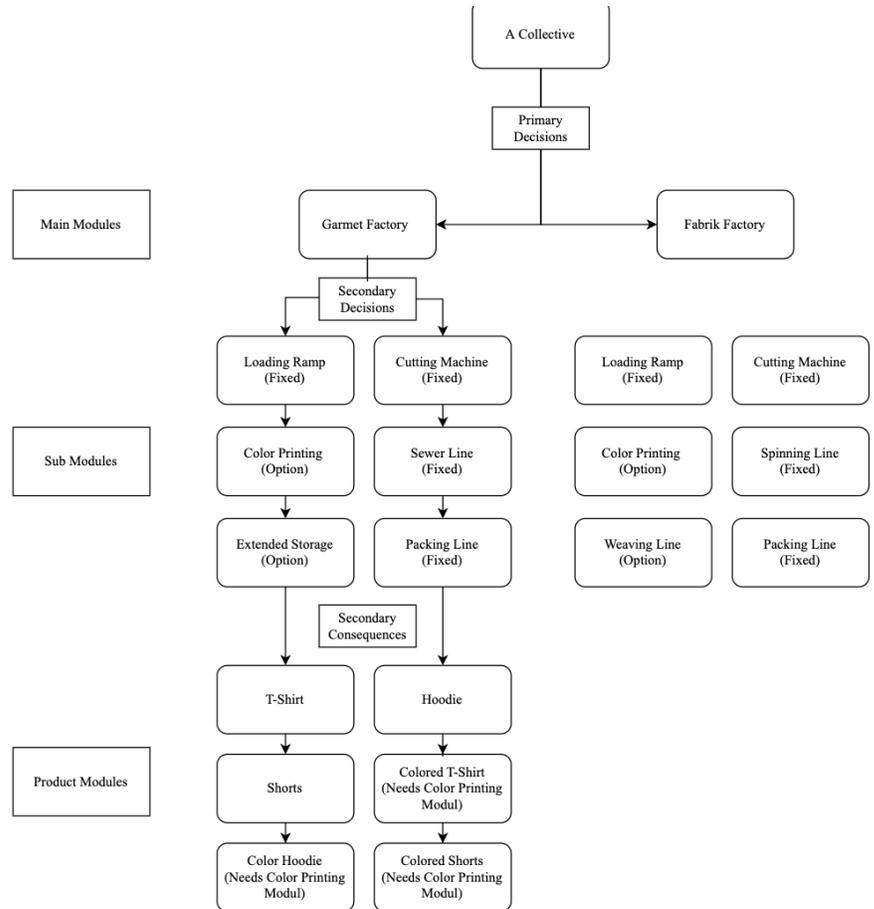
6.2 KSP Example and Figure 5: Waya Modules

A group decides to replicate an existing collective. The governance of the group is transparent and enforced by the ACOs. Now the group turns to the primary questions: Which Collective shall the group open? This question does depend on the current needs of another Collective. The group is lucky, as just now, a Creation AC decided to expand their urban cloth brand “Economic Liberation” into another country, and they need a Garment Factory in a new target market.

The group decides to take on the role, opens a new Collective, and chooses the Main Modul Garment Factory V1. They further decided to add the additional coloring module to serve more brands in the future. Adding modules is possible after the setup of the Collective.

The Liquidity protocol finances all Modules. Every unit produced within these modules is recorded. The original knowledge creator will receive a small share of every product sale enabled by their creations.

Shortly after opening the Collective new product templates were available because another group opened their own Collective and started a new brand. The group can easily access the template. All information about adjusting the machines and how to deal with the material needed is provided.



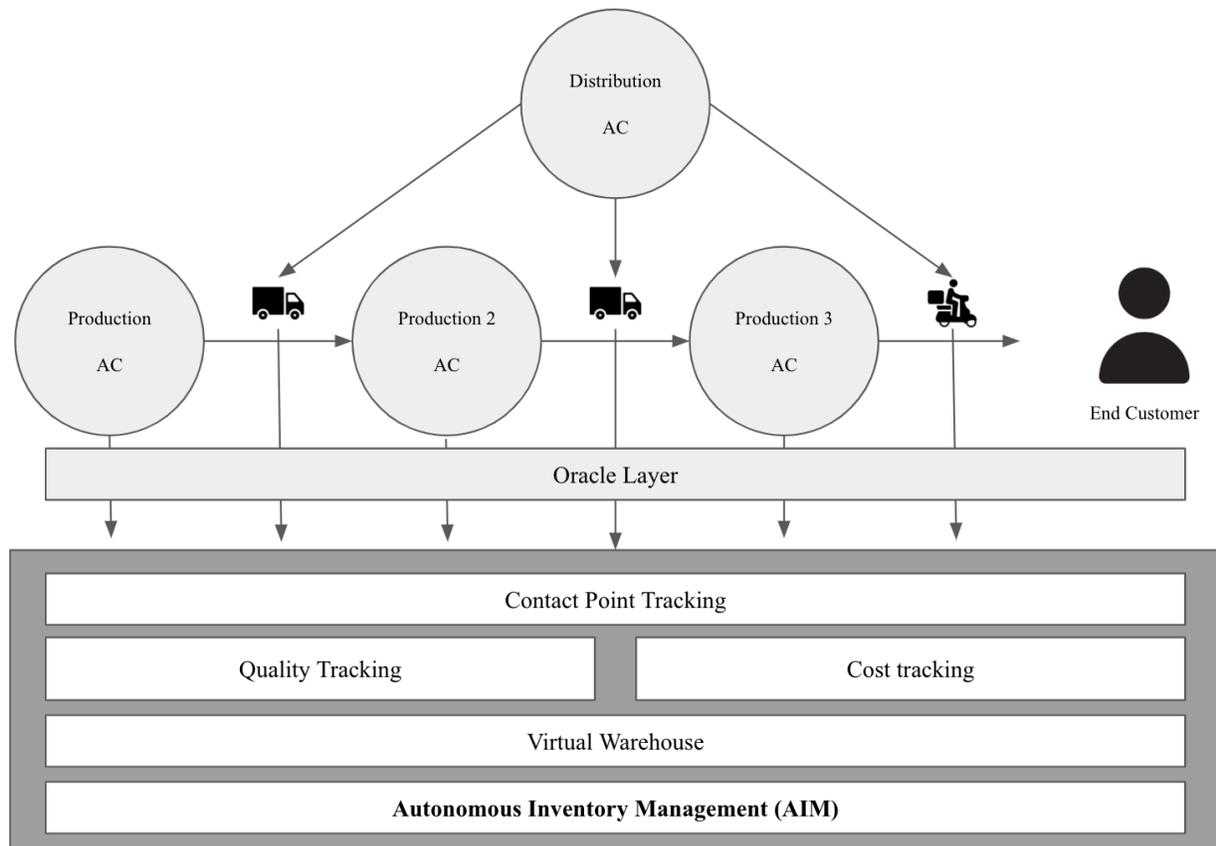
7. Autonomous Inventory Management (AIM)

The AIM is a ledger accessible to all ACs and anchored in the ACOs underlying smart contract. The ledger contains digital doubles of all of the entire inventory of all Waya Collectives: this includes all products in process, inventory, equipment and assets to track the value flow in the network starting from the LP and KSP at the beginning of a cycle until a final product is sold.

The AIM receives its inventory data from different sources along the product journey. Most importantly, a single source is not sufficient to accept something true. This network of various information sources is called “Oracle Layer”. This layer collects information from GPS, cameras, RFID scanners, truck weight sensors and self-reporting. These different data points are aggregated to determine if delivery or a production process have happened successfully.

The Oracle Layer is critical because AIM is only as good as the data it feeds it. If the AIM fails, adverse actors might find exploits along the value creation process. Decisions about disputes and liability for damages will also be based on the AIM records

7.1 Figure 6: AIM



The AIM consists of four different parts tracking the value flow:

- I. **Virtual Warehouse:** Contains all assets within the network on-chain as tokens.
 - A. KSPs: Contains all templates used and produced in the Collective. Knowing which knowledge is deployed at which collective is critical to compensate and knowledge creator but also to improve processes.
 - B. Inventory Tokens: a digital double of any item in the entire network. Having these on chains provides an unalterable and real-time snapshot of the value creation process of the network.
- II. **Contract Point Tracking:** Who (Collective Member) had when (Time), and where (Location) contact to the product?
- III. **Quality Tracking:** How good is the product (Output Quality Scores, KPIs), and why (Type of machinery involved, settings of used machinery, quality score of the input e.g. fabric)?
- IV. **Cost Tracking:** How much does each component cost and how was it paid (Liquidity Protocol)?

The archetypal value journey tracked by the AIM starts the creation of a template. A template is turned into a product utilizing the LP. The newly created product or part is attached with a unique identifier, e.g., an RFID chip (radio frequency identification).

These identifiers correspond to an *Inventory Token* telling every AC downstream who produced the product. With every station along the value creation process, more information is attached. If a product goes missing, it will be easy to identify where it got lost.

The Inventory Token is removed from the warehouse if a product is sold. End customers can use their product tokens to learn more about the history of a product or to keep track of all their belongings.

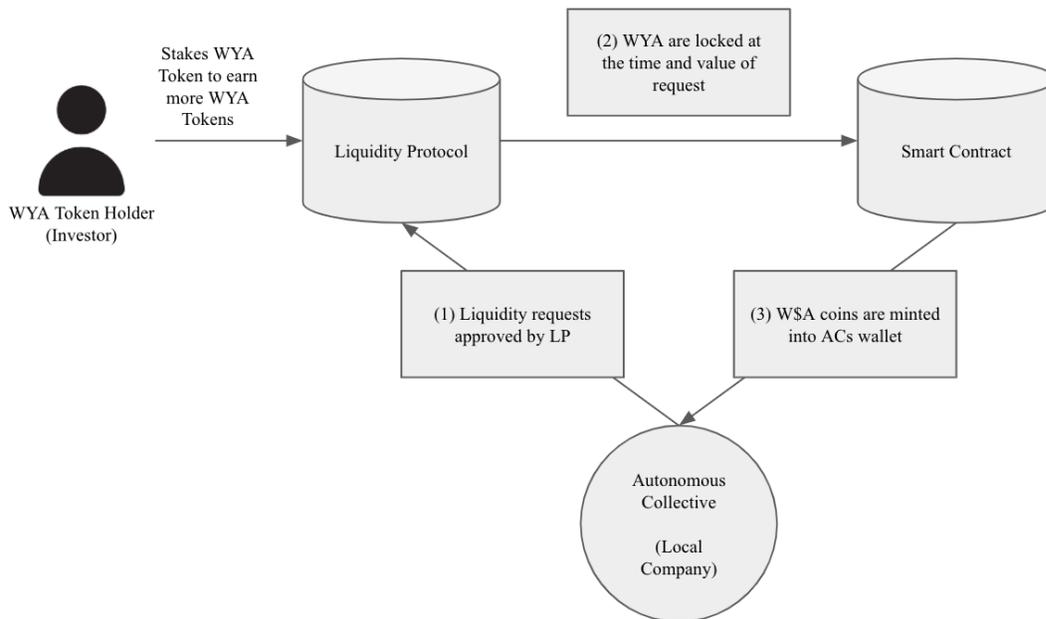
After the product's life cycle is over, other ACs can use the unique identifier attached to the product for recycling. All information needed to disassemble the product is contained in the unique identifier. That means Waya is equipped to develop into a fully circular economy.

8. Liquidity Protocol (LP)

The Waya Liquidity Protocol is the financial engine of growth. It enables instant liquidity when setting up or growing a collective. Thus the LP enables Waya to capture opportunities wherever the community sees them. It also means that Waya can provide liquidity to collectives without entering the traditional financial system.

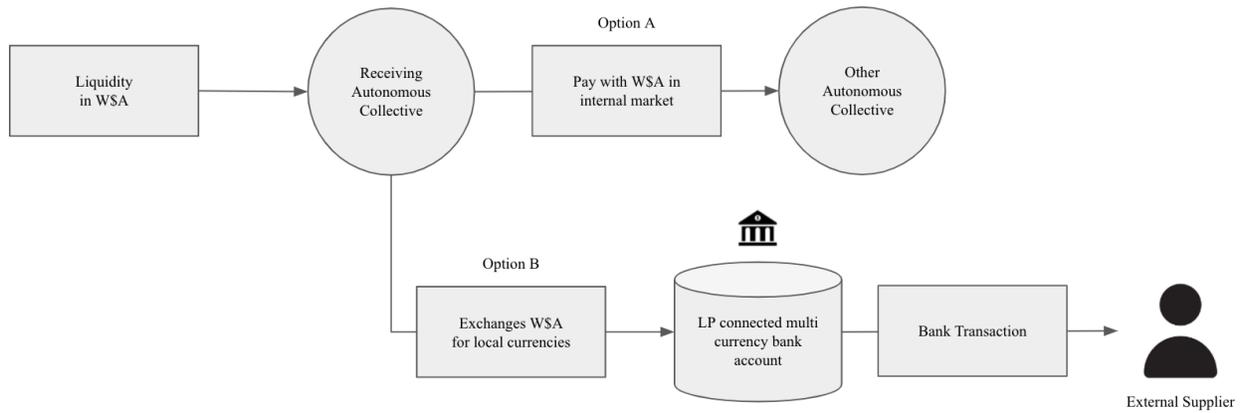
Fundamental for the liquidity protocol is the dual token policy of Waya. Besides the public Governance Token WYA, the internal payment coin “W\$A” is used. The value of the token is pegged to the dollar. All transactions from a payout of the liquidity to transactions between ACs are made in W\$A. This enables transparent tracing of money flows and limits spending to internal network markets. Trustworthiness of the W\$A coin is ensured by an external organization that provides the payment coin.

8.1 Figure 7: Instant Liquidity Mechanism



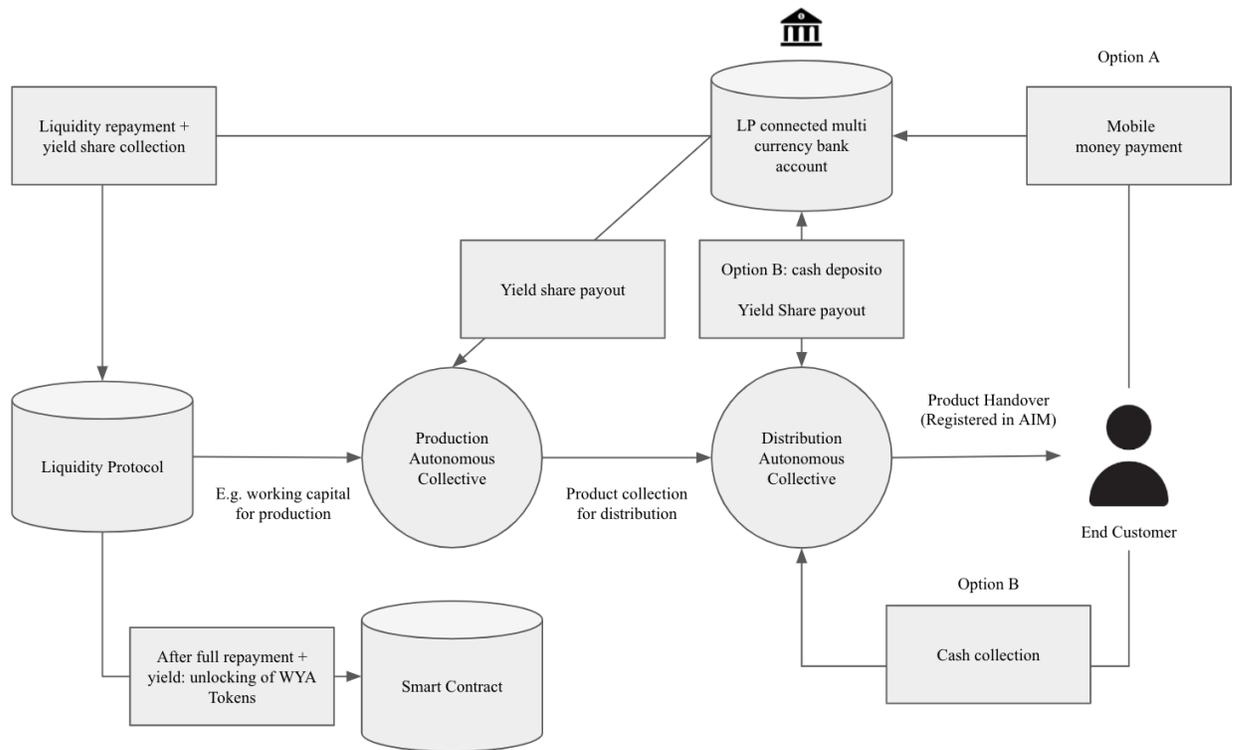
W\$A cannot be spent outside of the network. This is critical, especially in the early years, as not all goods necessary for growing an AC can be bought within the network. Every transaction outside of the network needs to be paid via a global multi currency bank account owned by the Waya DAO and connected to the liquidity protocol. Thereby, it is ensured that no money is spent on unsolicited purposes.

8.1 Figure 8: Liquidity Spending Mechanism



All liquidity spent out of the pool needs to return to the protocol, plus an additional premium to reward the investor. The collection of liquidity is critical for the long-term viability of the Waya Collective. The cash needed to repay the protocol is directly collected at the point of sale. To protect Waya Investors, the first thing that is repaid from revenue is the liquidity Protocol.

8.1 Figure 8: Liquidity Spending Mechanism



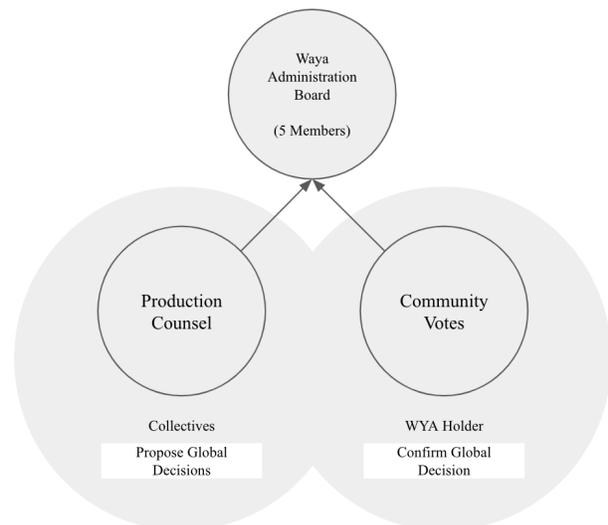
9. Tokenomics & Governance

Waya Collective is a global DAO governed by WYA Token holders. All tokens are minted in the DAO treasury first. The treasury releases the tokens over time into the public. All members receiving a number of tokens are vested. The DAO governance is progressively decentralized, as the number of individual token holders grows, so does the decentralization of the network increase.

Tokenomics of WYA	Token Distribution	Percentile	Vested
ISPO Delegators	100,000,000	0.10	
For Waya Global Contributors	50,000,000	0.05	4 Years
For Waya Local Contributors: To support the setup of new Collectives and reward working Members	250,000,000	0.25	
For Founding Team	100,000,000	0.1	8 Years
Public Sale to Cardano Community	200,000,000	0.20	
Permanent DAO Treasury: to ensure liquidity in the LP.	200,000,000	0.20	
Private Sales: Reserved for strategic Investors	100,000,000	0.10	2 Years
Total Supply of all WYA	1,000,000,000	1	

Until 50% of WYA tokens are distributed, the Waya Administration Board can outvote other token holders in strategic decisions. After more than 50% of the tokens are distributed, global decisions can be proposed by collectives and can be confirmed by the community. A global decision affects all or most members of the Waya Networks. Global decisions can include software updates, training standards, production standards, LP dynamics, and pledging requirements. Local decisions only affect one collective and are made within a collective, including staffing, which jobs to claim, which investments to make.

Figure 9: Governance



10. Africa

Africa is home to early adopters. Invented in Kenya, M-Pesa's mobile money leapfrogged a nation from a cash-based economy straight into digital banking. At the same time, Nigeria has reached one of the highest adoptions of crypto. The substance on which these successes stand is a young population hungry to do better for themselves and their community.

This young population is digital native and develops unique lifestyle ideas fed by and feeding back into international trends. This feedback cycle creates a new style and quality conscious consumer class. We expect this new segment to grow to 116 million people in the next ten years. Waya is built to enable this emerging class to consume what they want, when they want it, sustainably!

Industrialization and manufacturing is the foundation of many economies in the world as it provides stable economic growth and value creation, as well as jobs and learning opportunities for the population. Yet, industrialization is also a major reason for climate change and has led many people into positions of exploitation. On the one hand, industrialization provides the opportunity to grow stable economies and create better lives for Africans. On the other hand, Africa provides the chance to revolutionize how we build industries and be a model for the rest of the world. This revolution needs the investment of our money and time, and it needs a system that serves humans and the planet. This revolution needs to scale fast in order to solve pressing issues on the continent and beyond. Waya Collective provides a model of collaboration and growth that can power this revolution.

Furthermore, Decentralized Autonomous Organizations (DAOs) are not new to the continent. A similar concept is the rotating savings and credit association (ROSCA), or Stokvel in South Africa, which has a long-standing tradition. ROSCA has a history of working as a group to achieve financial and entrepreneurial freedom that traditional finance institutions such as banks do not fulfill.

The ROSCA is a group of individuals who agree to meet for a defined period to save and borrow together, a form of combined peer-to-peer banking and peer-to-peer lending. Meetings can be regular or tied to seasonal cash flow cycles in rural communities. Each member contributes the same amount at each meeting, and one member takes the whole sum once. As a result, each member can access a larger sum of money during the life of the ROSCA and use it for whatever purpose they wish. This method of saving is a popular alternative to the risks of saving at home, where family and relatives may demand access to savings.

Every member sees every transaction during the meetings. Since no money has to be retained inside the group, no records have to be kept. However, some maintain a crude list of slots. These characteristics make the system a model highly adaptable and transparent across all environments.

Therefore we believe that a concept like the Waya Collective will find fruitful ground across the continent. Waya is nothing less but a new form of economy.

We are confident that Waya will contribute massively to wealth creation on the continent and beyond.

11. Waya Inception

11.1 Collective Alpha

The Waya Collective is an incredibly ambitious project. As most distributive technology, we believe Waya will first be adopted within a small, particular niche before breaking into the mainstream industry.

The incubating niche we are targeting is the textile industry in Kampala, Uganda. Waya will set the Collectives Zero (CZ) right around Kampala. This CZ will contain all functions (Creation, Production and Distribution) in one body. The brand produced by CZ is called WAYA and focuses on casual wear for urban consumers within Kampala. We need the CZ as a research ground to test our hypothesis. The goal of CZ is to split into three specialized Collectives: Creation, Production and Distribution. After this first split, we have the templates needed to replicate our Collectives. CZ is already in development.

When the templates for Creation, Production and Distribution are crafted we will replicate them as autonomous units in Zambia and Kenya. If this is achieved we will focus on replicating existing collectives and creating more templates to be replicated. Please find more information about the growth of Waya on our website.

11.1 Collective Omega

The Collective Omega is with Alpha, the first two Collectives we are building. Alpha is our initial side to develop economic units within Waya, while Omega is the group that will create the Waya Collective DAO and connect DApps. Collective Omega will follow the same basic rules as Alpha, e.g. the limitation to 150 members, and work like a networking organization: permissionless and contribution-based pay.

Alpha and Omega are fundamentally different as Alpha focuses on Industrial Operations while Omega focuses on Strategic Development.

12. Cardano

We built on Cardano and are proud members of their community. Cardano, to us, is the best Blockchain to build Waya on for four reasons:

- I. **Governance:** If you read this proposal carefully, you will have noticed the focus on governance. Governance is the only tool we have to keep a system fair and productive. Dysfunctional governance can break down everything. Cardano is the one community that understands this, and governance will make the difference if blockchains will be able to truly offer decentralization and protection of censorship.
- II. **Proof of Stake:** The PoS Solution Cardano created aligns with our core values: preserving resources while protecting and enabling investors.
- III. **Scaling:** Every factory within the Waya Collective will create massive transactions. Upcoming concepts like hydra heads make us confident that Cardano will host a system like Waya without compromising its decentralization.
- IV. **Haskell:** Using DeFi for entirely digital assets is one thing, but having on-ground just-in-time operations is another. A bug within Waya could have significant consequences. Using a more robust way of engineering is imperative.

13. Abbreviations

Abbreviations	Meaning
AC	Autonomous Collective
ACOs	Autonomous Collective Operating System
CZ	Collective Zero
KSP	Knowledge Sharing Protocol
AIM	Autonomous Inventory Management
LP	Liquidity Protocol
WYA	Symbol of the Waya Governance Token
W\$A	Symbol of the Waya Payment Token
NFT	A token than is unique - “non-fungible “
DAO	Decentralized Autonomous Organization
ROSCA	Rotating Savings and Credit Association
GPS	Global Positioning System
RFID	Radio-frequency identification
PoS	Proof of Stake
Other Terms	
Smart Contract	A smart contract is a self-executing contract with the terms of the agreement between buyer and seller being directly written into lines of code. The code and the agreements contained therein exist across a distributed, decentralized blockchain network
Governance	The concept of living together