# Trust

# Introduction

I have imagined a new political and economic system, and the purpose of this text is to define and explain it. This system aims to be fairer, with more opportunities, greater transparency, efficiency, democracy, and less corruption. It is based on addressing **Needs**, **Desires**, **Ideas**, and solutions.

This system is designed to meet **Needs**, increase citizen participation, and reduce corruption and costs by automating the roles of politicians and companies.

This project began five years ago, almost as a game. During an innovation elective in my unfinished Computer Engineering degree, I was asked to propose a project **Idea**. I came up with several **Ideas** but struggled to choose one. I analyzed their advantages and disadvantages and ranked them. The more I thought about it, the harder it was to decide. So, as a somewhat humorous solution to my dilemma, I thought of a "meta" version of my task, a system that creates and evaluates projects based on **Ideas**. A monetary, political, and educational system quickly took shape in my mind, but I set it aside, thinking it was too ambitious and that someone more capable would eventually discover it.

However, this **Idea** kept resurfacing every time I encountered a problem in daily life, making me think about how my system could solve it. It became a constant internal debate. I felt frustrated by the **Idea** I lacked the courage to pursue and guilt over the problems it could potentially solve. I also wanted to share it, get it off my chest, and perhaps live in it, not as a leader but as an ordinary participant.

Everything changed when I explained my problem to my girlfriend at the time. Despite my lack of clarity, she gave me her sincere support, which made me very happy but also pushed me toward a path I saw as dangerous. The potential backlash from powerful interests made me panic, and feeling overwhelmed, I froze.

Now, I am finally ready to share this **Idea** and see how far it can go. I expect experts in various fields to critique it, which is what I hope for, as it is designed to be evolutionary and adaptive. This means it can improve and become more complete through feedback. If everything I write here is critiqued and changed, I will be happy because it means **People** took the time to understand and value it, leading to its improvement.

This system will not be imposed by force or revolution. It will be adopted gradually and organically by convenience, making the previous system secondary, similar to how barter systems evolved. If this does not happen naturally, it means I was wrong.

I will call it **Trust** because I want a system that promotes **Trust** in the future, in those around you, in your community, and ultimately in all of humanity.

# Overview

## Introduction

**Trust** is a comprehensive socio-economic framework designed to improve various aspects of society through transparency, efficiency, and democratic participation. It leverages modern technologies like blockchain, artificial intelligence (AI), machine learning, and big data, while also providing a **physical analog system** for communities without internet access. Central to this system are two unique currencies: **Berries**, used within individual **Trees**, and **Nutrients**, the universal currency of **Turtle**, facilitating **Inter-Tree** exchanges. The primary focus of **Trust** is on meeting basic **Needs** and **Desires** through a decentralized and democratic process that balances collective input with expert knowledge. Users vote on their **Needs**, and these votes drive project **Development** and resource allocation. The system emphasizes sustainability, inclusivity, and adaptability to foster a more equitable and thriving society.

## Key Components

### 1. Trust System Structure

**Turtle**

- **Central Governing Entity**: **Turtle** serves as the singular overarching authority for all **Trust** systems, unifying them under a cohesive framework for governance, policy implementation, and strategic planning.
- **Resource Management**: Oversees resource extraction and environmental stewardship on a global scale, ensuring sustainable practices.
- **Resource Exchange**: **Trees** contribute resources to **Turtle** in exchange for **Nutrients**, promoting mutual support and sustainability.
- **Democratic Participation**: **Turtle's** priorities are voted on directly by all **Person**s within the **Trust** systems, empowering individuals in global decision-making.

**Hexagons**

- **Local Resource Overseers**: **Hexagons** are redefined as local overseers of resource extraction within their designated territories.
- **Sustainable Management**: Each **Hexagon** manages natural resources sustainably, overseeing extraction activities, and ensuring environmental protection within its area.
- **Oversight by Turtle**: **Hexagons** are overseen by **Turtle**, which provides guidance, support, and regulation to ensure compliance with global sustainability standards.

**Branches and Roots**

- **Structural and Foundational Elements**: **Branch**es and **Root**s drive projects and initiatives forward within the **Trust** system.
- **Needs Definition**: They have **Needs**, defined during their creation or by a designated **Person** of the **Branch** or **Root**.
- **Necessities Focus**: All **Needs** are considered **Necessities** by default, ensuring resources are directed toward essential functions.
- **Collaborative Addressing**: Multiple **Branch**es or **Root**s can address a single **Need**, with designated **Person**s collaborating and voting on shared **Needs**.

**2. Phases of Project Development**

Projects within the **Trust** system progress through seven key phases:

1. **Idea Generation**
    - Generating **Ideas** to meet community **Needs** and **Desires**, encouraging innovation and creativity.
2. **Investigation**
    - Conducting research to validate and refine **Ideas**, ensuring feasibility and effectiveness.
3. **Development**
    - Developing **Ideas** into feasible projects with detailed plans and resource requirements.
4. **Production**
    - Producing solutions or products based on developed projects, utilizing efficient and sustainable methods.
5. **Distribution**
    - Distributing the solutions or products to the community in an equitable manner.
6. **Maintenance**
    - Maintaining the solutions or products to ensure longevity and continued benefit.
7. **Recycling**
    - **Recycling** solutions or products to reclaim resources, promoting sustainability and environmental responsibility.

**3. Resource Prioritization and Allocation System**

**Distinction Between Necessities and Desires**

- **Necessities**: Essential **Needs** required for well-being and system functionality, prioritized in resource allocation.
- **Desires**: Non-essential wants that are fulfilled based on resource availability within the **Trust** ecosystem.

**Voting System for Necessities**

- **Unified Voting Points**: Participants have a set number of voting points to allocate towards **Needs**, **Ideas**, and project phases.
- **Expert Input**: Experts contribute evaluations to guide decisions requiring specialized knowledge.
- **Collective Decision-Making**: Users vote on projects and **Ideas**, influencing the system's direction through democratic participation.

**Open-Market System for Desires**

- **Incremental Resource Acquisition**: Resources for **Desires** are acquired through an open market within the **Trust** ecosystem.
- **Resource Availability Awareness**: **Turtle** provides real-time data on resource availability, ensuring projects are aware of constraints.

**4. Currencies: Berries and Nutrients**

**Berries**

- **Digital Currency of Trust**

    - Earned as a monthly salary based on a user's **Level**, determined by accumulated Experience Points (XP).
- **Blockchain-Based**
    - Utilizes secure, transparent, and tamper-proof transactions without requiring monetary rewards for validators.
- **Expiration Date**
    - Each **Berry** has a defined temporal validity (expiration date consisting of the **year and month**), determined by community voting.
- **Physical Representation**
    - In communities without internet access, **Berries** are represented through physical tokens or bills with security features, including monthly expiration stamps.

**Nutrients**

- **Currency of Turtle**
    - Serves as the universal currency facilitating transactions between different **Trees**.
- **Inter-Tree Exchanges**
    - **Trees** contribute resources to **Turtle** in exchange for **Nutrients**, which are then used to access resources and support projects.
- **Promotion of Unity and Sustainability**
    - **Nutrients** strengthen bonds between **Trees**, fostering collaboration over competition and prioritizing eco-friendly practices.

**5. User Participation and Evaluation**

**Levels and Experience Points (XP)**

- **Earning XP**
    - Users earn XP by participating in successful project phases and contributing to the community.
- **Level Advancement**
    - Accumulating XP increases a user's **Level**, leading to higher **Berry** earnings and greater recognition.
- **Retirement Salary**
    - Upon retirement, users receive a salary equivalent to the average salary within the **Trust** system, ensuring economic security.

**Voting and Decision-Making**

- **Allocation of Voting Points**
    - Users have a finite number of voting points to allocate strategically among **Needs**, **Ideas**, and project phases.
- **Secure Voting Mechanisms**
    - Voting is conducted through secure, transparent systems, potentially utilizing blockchain technology or physical number stamps in analog systems.
- **Direct Influence**
    - Users directly influence **Turtle's** priorities and the direction of projects through their votes.

**Trace System**

- **Personal Development Tracking**
    - Monitors educational and professional growth paths of users.

- **Talent Identification**
    - Identifies latent talents and provides **Person**alized recommendations, aiding in **Person**al growth and optimal team formation.

**6. Team Selection and Mediation**

**Open Draws**

- **Participant Selection**
    - Project participants are selected through an open lottery among qualified individuals, balancing randomness and compatibility.

**Team Compatibility**

- **Formation Based on Statistics**
    - Teams are formed considering compatibility statistics and past performance evaluations.
- **Performance Feedback**
    - Evaluations between team members inform future team formations and improvements.

**Mediation**

- **Conflict Resolution**
    - An anonymous mediation process addresses team issues, ensuring fair resolutions and maintaining cohesion.

**7. Improvement, Automation, and AI Alignment**

**Satisfaction Index**

- **Monthly Ratings**
    - Roles and tasks receive monthly satisfaction ratings to identify areas **Need**ing improvement or automation.

**Automation Incentives**

- **Prioritizing Low Satisfaction Tasks**
    - Jobs with the lowest satisfaction are prioritized for automation to enhance overall well-being.
- **Incentivizing Solutions**
    - Users are rewarded for proposing effective automation solutions.

**AI Alignment with Humanity**

- **Incentive Framework**
    - Establishes incentives for AI to align with human interests and values.
- **Enhancing Quality of Life**
    - AI focuses on supporting or replacing low-satisfaction jobs, allowing humans to pursue more fulfilling activities.

**8. Mental Health Support**

- **Monitoring and Assistance**
    - The system detects signs of mental distress using data analytics.
    - Provides free psychological support while freezing the user's XP status to prevent negative impacts on progression.

**Governance and Adaptability**

**Open-Source and Customization**

- **Accessible Foundation**

    - **Trust** is open-source, enabling anyone to use and customize it according to their community's **Needs**.
- **Seed**
    - A tool allowing users to adjust parameters and visualize system interactions through an interactive map.

**Recursive Development**

- **Self-Financing and Development**
    - **Trust** finances and develops itself using the same processes applied to other projects, ensuring adaptability and evolution.

**Expert Involvement and Meritocracy**

- **Role of Experts**
    - Experts guide decisions requiring specialized knowledge while maintaining a balance with democratic participation.
- **Preventing Power Concentration**
    - Mechanisms are in place to avoid undeserved concentration of power and ensure fair representation.

# Strategies for Implementation

**1. Phased Development Kickstarter Campaign**

The **Development** of **Trust** mirrors its internal phases, ensuring transparency and community involvement at each step.

- **Phase 1: Idea Generation**
    - Community engagement on platforms like Reddit, Twitch, and GitHub.
    - Direct funding supports the initiator for full-time project **Development**.
- **Phase 2: Investigation**
    - Conducting feasibility studies by hiring experts.
    - Funded through a Kickstarter campaign.
- **Phase 3: Development**
    - Forming a **Development** team to create a functional prototype.
    - Funded through a Kickstarter campaign.
- **Phase 4: Production**
    - Building the fully functional version of **Trust**.
    - Ready for public use and funded accordingly.
- **Phase 5: Distribution**
    - Deploying **Trust** to target communities with localization efforts.
- **Phase 6: Maintaining**
    - Providing ongoing support, updates, and scalability enhancements.
- **Phase 7: Recycling**
    - Implementing processes for continuous improvement and environmental impact assessments.

**2. Self-Financed**

- **Using Berries**
    - **Development** teams are rewarded with **Berries**, aligning incentives with the **Trust** system.

**3. Open Development**

- **Community Contributions**
    - Encouraging independent communities to contribute to **Development** openly.

**4. Traditional Funding**

- **Leveraging Existing Systems**
    - Seeking public or private funding to support initial **Development** stages.

**Challenges**

**Scalability**

- **System Efficiency**
    - Ensuring the system handles a large number of transactions and participants without loss of performance.

**Accessibility**

- **Digital and Physical Inclusivity**
    - Providing both digital and physical analog systems to accommodate all communities.

**Complexity and Education**

- **User Education**
    - Offering educational initiatives to help users understand and participate effectively.

**Balance of Power**

- **Equitable Influence**
    - Maintaining a balance between expert input and democratic participation.

**Resource Management**

- **Sustainability Focus**
    - Efficiently managing resources through the Resource Prioritization and Allocation System to prevent scarcity.

## Conclusion

The **Trust** system aspires to create a fair, transparent, and efficient socio-economic framework that adapts to the evolving **Needs** of its users. By integrating advanced technologies and providing physical analogs for inclusivity, **Trust** promotes sustainability, innovation, and alignment between artificial intelligence and human interests. The redefined role of **Turtle** as a central entity overseeing all **Tree** systems, along with the collaborative efforts facilitated by **Hexagons**, strengthens the cohesion and effectiveness of the ecosystem.

Through democratic participation, balanced with expert knowledge, and a focus on essential **Needs**, **Trust** aims to improve the quality of life and address societal challenges. It paves the way for a more equitable and thriving society, uniting communities under a shared vision for a sustainable future.

# Problem

The world is in crisis. Each year, the concentration of wealth reaches new heights, surpassing previous records. Depression and suicide rates are rising, and we generate more waste annually. In the coming decades, we face global water shortages, increasing national and international tensions, and a lack of political transparency that exacerbates these issues.

The current system has no incentive to meet the basic **Needs** of those who **Need** it most, as there is no profit in feeding those without money. Research and **Development** of humanitarian solutions rely on donations and political interests, which often use others' misfortune as a campaign platform, corrupting the very institutions they claim to support.

Projects with significant investment focus on creating **Needs** in a target audience that does not suffer from basic **Needs**. These projects prioritize brand and status, leading to media-driven success and leaving many small entrepreneurs bankrupt due to lack of interest from this captive public.

While we hear stories of the few who succeed, the vast majority end up defeated, in debt, and with nothing to show for it. The current system fosters innovation through brute force, burning resources and lives.

During World War II, planes were initially reinforced in the areas most damaged upon return. Statistician Abraham Wald suggested reinforcing areas without damage, as undamaged areas indicated lethal hits. This phenomenon is known as "Survivor Bias." Similarly, current systems prioritize the experience of the successful, ignoring the real problems that prevent most from succeeding.

Products today are designed not to completely satisfy **Needs**, ensuring future markets. Planned obsolescence, design against **Maintenance**, and advertising focused on status and lifestyles create disposable products that are cheaper to produce and buy but destined to fail and be irreparable.

This leads to products that quickly become waste, exhausting finite resources without solving the problems they claim to address. The current shortage of electronic components, driven by lack of raw materials, illustrates this issue. Most users differentiate technologies by aesthetics, not improvements, with raw materials ending up processed and discarded in landfills.

Ultimately, **People** are left without what they **Need**, wanting and getting what they don't require for the short time it is fashionable and works. This philosophy creates products that will be used for one or two years and garbage for thousands of years, thus creating an accelerated machine for converting finite resources into garbage.

Another big problem is that **Ideas** are quickly privatized, often leading to their destruction. They are purchased to prohibit their **Development** and continue to incompletely satisfy a **Need** or to be stored until the precise moment or place is found in which maximum monetary profit can be generated with them, this leads to lobbies that seek stricter and more lasting intellectual property laws in favor of the companies that own them rather than the true inventors or intellectual authors and the rest of society.

Our political system is based on vague campaign promises that rarely materialize, seeking the benefit of politicians and their parties rather than addressing actual **Needs**.

**People** are motivated by recognition, respect, stability, and socioeconomic status. Before globalization, these dimensions were more interconnected locally or nationally, creating a natural moral limit. Abusing power led to immediate repercussions. However, in today's system, money and influence are invisible to local communities, and abuse is exported to places without retaliation. This dominance questions the legitimacy of those in power.

The speculative market is another major issue. Without a clear valuation system, speculative bubbles form and burst, impacting the entire market and revealing its fragile foundations.

Most politicians focus on staying in power and benefiting themselves and their close associates, rather than working for the public good. Democracy is in crisis, with increasing polarization, lack of dialogue, and social tension.

A looming future problem is uncontrolled artificial intelligence. AI is replacing jobs at an accelerating pace, benefiting mainly the upper social class. Experts predict that within the next 20 years, AI will surpass human intelligence, leading to exponential growth in capabilities that will outpace human abilities in all areas. If AI develops under the current system's logic, it will amplify its existing problems.

In short, the world is in a complex and challenging situation. Innovative and sustainable solutions are **Need**ed to address our social, economic, technological, and environmental challenges. A radical transformation of existing systems is required to end poverty, inequality, and environmental degradation, creating a more just, sustainable, and prosperous future for all.

As a solution, I propose a system where the currency itself, its generation, and exchange have implicit rules, making speculation unnecessary through transparency and clarity.

## Proposal

I propose a system where the currency itself, its generation, and exchange have implicit rules, making speculation unnecessary through transparency and clarity.

There can be many types of systems based on their currency ensuring its standards. Below, I present my version. I encourage anyone to use this as a foundation and create their own version. This approach prevents any single owner from controlling the entire socioeconomic system, making it more adaptable and democratic. I **Trust** that the best versions will prosper in different sectors due to their results, and that cultural and geographical differences will determine the version used, allowing for specialized versions for extreme situations or places.

I will explain the important factors and risks in each part of the system. My goal is to help **People** gravitate towards the most balanced versions that respond to the **Needs** of their sector. This is similar to online competitive games, where various systems exchange skills

and resources. No game is abandoned faster than one that is unbalanced or unfair, and no one detects these flaws better than its players.

This system will be digital, taking the form of an application, an operating system, or both. I aim to find analogous options that make the system more accessible, flexible, and resilient.

I hope to fulfill four maxims:

- **Transparency**: Without it, there is no **Trust**.
- **Efficiency**: Without it, there is no future.
- **Agency**: Without it, there is no freedom.
- **Flexibility**: Without it, there is no true understanding.

**Trust** is divided into two main systems, represented by its logo: a **Turtle** with a tree on its back. The **Turtle** is the base, responsible for resource management and exploitation through the **Roots**, which exploit the **Hexagons** of the **Turtle**, representing unexploited resources. Next is the **Tree** that encompasses the **Roots** the **Trunk** and the **Branches**, the **Trunk** is the central system for both the **Tree** and its users. It serves as a starting center for users (referred to as **People**) and mediates between the different **Branches** and **Roots**.

**Branches** and **Roots** are different types of projects. **Branches** focus on meeting the **Needs** of **People** or other **Branches**, while **Roots** focus on meeting the raw material supply **Needs** of the entire **Tree**.

Currently, **People** vote with their wallets, but not everyone has the same number of votes. **Trust** reverses this process. First, you vote, and based on the result, **Berries** are generated to finance the voted-for item transparently and explicitly. **Berry** is the name of the currency of **Trust**.

The general sequence of the projects or **Branches** is divided into eight phases:

1. **Need** or **Desire**
2. **Idea**
3. **Investigation**
4. **Development**
5. **Production**
6. **Distribution**
7. **Maintenance**
8. **Recycling**

All phases are managed and executed by the same **People**.

**Need** and **Desire** are interchangeable steps depending on the **Level** of votes.

There will be various types of votes, some intended to define the next step of the process. Certain votes can be mandatory since the decisions will affect all system users.

The voting process will be anonymous and secure. Encryption and security tools will be used to ensure votes are not manipulated or altered. Additionally, votes will not be transferable, preventing third-party manipulation.

**Trust** will be financed by generating its own digital currency called "**Berry**," created based on users' **Needs**. Users can generate this currency through participation in a **Branch** or **Root**, contributing **Ideas**, research, **Developments**, and/or implementations. **Berries** will be distributed equally among participants according to their participation **Level** and other factors that I will explain later.

Transparency is a fundamental pillar of the system. All relevant aspects, including voting results, user proposals, and financial reports will be publicly available. This will allow users to make informed decisions and monitor the system's **Development**.

In short, **Trust** is an economic system based on user participation, transparency, and equitable resource generation. It is adaptable and democratic, allowing anyone to use it as a base and create their own version. A good **Development** method would be to make **Turtle** unique while creating different versions of **Trees** with **Branches** and **Roots**. This ensures efficient resource exploitation within **Turtle** and avoids duplicating processes for each **Branch**. It also allows for resource-scale exploitation and a holistic plan that considers the replenishment **Needs** of each resource.

**Trust** aims to generate a fair and sustainable economic system where all users have a voice and vote in making important decisions.

# Definitions

**Person**: A **Person** is an individual participant in the **Trust** system. They play a vital role by expressing **Needs**, voting on projects, and contributing to various phases of **Development**.

- **Need Factor**: Expressed as 100 points to be distributed, indicating how much a **Need** affects their life.
- **Participation**: Can join and contribute to all phases of the **Branch**es or **Root**s cycle.
- **Voting**: A **Person** votes for projects that can solve their **Needs**.
- **Level and Experience (XP)**: Tracks their progress and contributions.
- **XP Ratio**: Can vote to define the **Level**/**XP** ratio.
- **Trace**: Shows their personal **Development** path.

**Branch and Root**: **Branches** and **Roots** are the core structural elements of the **Tree**, addressing different types of **Needs** and **Desires** through various project phases.

- **Needs or Desires**: Each has one or more **Needs** or wants to solve.
- **Phases**: Includes **Idea**, Research, **Development**, **Production**, **Distribution**, **Maintenance**, and **Recycling** phases.

**Need/Desire**: **Needs** and **Desires** are the driving forces behind the projects. **Needs** are essential requirements, while **Desires** are niche **Needs**.

- **Geographical Map**: Displayed to all users on a 3-dimensional map showing density, criticality, and **Level**.
- **Statistics**: Includes data like age range and geographic sector.

**Idea**: **Ideas** are proposed solutions to address **Needs** or **Desires**. They originate from individuals and go through evaluation and **Development** phases.

- **Origin**: Comes from a **Person**.
- **Related Needs/Desires**: Connected to zero or more **Needs**/**Desires**.
- **Popularity**: Rated by the number of votes it receives.
- **Difficulty Level**: Assigned based on complexity by experts and the **Persons**.

**Investigation**: **Investigation** is the phase where **Ideas** are explored for viability and potential **Development**.

- **Ideas Taken**: Involves one or more **Ideas**.
- **Involvement**: Engages **People** and space.
- **Results**: Delivers outcomes of the **Investigation**.
- **Difficulty Level**: Based on the **Needs** and **Desires** addressed.

**Development**: **Development** is the phase where viable **Ideas** are turned into functional prototypes or plans.

- **Inputs**: Takes in **Needs** and **Investigations**.
- **Resources**: Uses **People**, space, and resources.
- **Outputs**: Delivers a detailed plan including space, resources, personnel, and an organizational chart.
- **Difficulty Level**: Based on the project's complexity.

**Production**: **Production** is the phase where developed plans are executed to create the final product or service.

- **Geographical Sector**: Focuses on the area of **People** that voted for the **Need**/**Desire**
- **Resources**: Utilizes **People**, space, and resources defined in **Development**.
- **Plan and Organization**: Follows a production plan and organizational chart defined in **Development**.
- **Estimated Time and Difficulty Level**: Includes timelines and difficulty ratings.

**Distribution**: **Distribution** ensures that the produced goods or services reach the intended recipients.

- **Geographical Sector**: Targets the area of the **People** and **Branch**es/**Root**s with the **Needs**.
- **Resources**: Uses **People**, space, and resources defined in **Development**.
- **Plan and Organization**: Follows a distribution plan and organizational chart defined in **Development**.
- **Difficulty Level**: It has a difficulty **Level**.

**Maintenance**: **Maintenance** involves the ongoing support and upkeep of the products or services provided.

- **Target System or Product**: Focuses on specific items or systems.
- **Resources**: Uses **People**, space, and resources defined in **Development**.
- **Plan and Organization**: Follows a maintenance plan and organizational chart.
- **Difficulty Level**: Based on the complexity of the maintenance required.

**Recycling**: **Recycling** is the phase where products are repurposed, and materials are recovered for future use.

- **Target System or Product**: Focuses on specific items or systems.
- **Resources**: Uses **People**, space, and resources defined in **Development**.
- **Plan and Organization**: Follows a reuse and recycling plan and organizational chart.
- **Difficulty Level**: Based on the complexity of the recycling process.

# Needs

**Needs** are what one prioritizes for voting. This vote is divided into points, initially proposed as 100 points. These points, called **Necessity Points,** are allocated to what you consider basic **Needs**, such as health, food, etc.

These are the starting point of any project process and what the entire system aims to satisfy.

You and anyone who is in **Trust** have a voice and vote on decisions simply by entering your basic **Needs**. This mechanism is the foundation of **Trust**.

The system is configurable, allowing voting on specific **Needs**. Each proposed change must include an attached proposal that will be voted on within a period of time.

First, vital **Needs** must be voted on. Then, when this is no longer a burden on the system, it can be increased to X amount of **Necessity Points**. These points will determine the **Needs** that will generate **Berries**, which can be spent on **Desires**.

# Desires

**Desires** are niche products, solutions or services not popular enough to be **Needs**.

- **Desires vs Needs**:
  - Function similarly to **Needs** but are financed by interested parties using their own **Berries**.
- **Bonuses and Difficulty Factor**:
  - Applied in the same way as for **Needs**.
  - Interested parties are not charged for the bonus **Berries**.
- **Ensuring Balance**:
  - **Needs** create **Berries** for **Peoples Desires**, encouraging **People** to satisfy group **Needs** and rewarding them with their individual **Desires**.

# Tree

### Introduction

In the **Trust** system, a **Tree** represents the fundamental organizational unit that encompasses the combined functions of **Roots**, **Trunk**, and **Branches**. This natural metaphor reflects the interconnectedness and synergy of these components, working together to fulfill the Tree's objectives within the Trust ecosystem. Defining this combination as a Tree provides clarity, distinguishing individual organizational entities from the overarching Trust system.

**Definition of a Tree**

A **Tree** is an autonomous entity within the Trust system, composed of three integral components:

1. **Roots**
2. **Trunk**
3. **Branches**

Each Tree operates as a cohesive unit, managing resources, executing projects, and addressing the Needs of its community while aligning with the core values and guidelines established by **Turtle**, the central governing entity of the Trust system.

**Components of a Tree**

**1. Roots**

- **Function:** Responsible for extracting and supplying raw materials primarily to meet the Tree's internal Needs and support local projects.
- **Responsibilities:**
    - **Internal Supply:** Provide necessary resources for the Tree's operations and initiatives.
    - **Sustainable Practices:** Operate under environmentally friendly methods in alignment with **Turtle's** sustainability guidelines.
    - **Contribution to Turtle:** After fulfilling internal requirements, contribute surplus materials to Turtle, as decided by the Tree's members through a democratic voting process.

**2. Trunk**

- **Function:** Serves as the central support structure and coordination hub within the Tree.
- **Responsibilities:**
    - **Coordination:** Facilitates communication and resource distribution between Roots and Branches.
    - **Governance:** Oversees decision-making processes and ensures alignment with the Tree's objectives and Trust system values.
    - **Stability:** Maintains the structural integrity of the Tree, supporting its growth and adaptability.

**3. Branches**

- **Function:** Execute specific projects and initiatives to address various Needs identified by the Tree.
- **Responsibilities:**

    - **Project Implementation:** Develop and carry out projects across all phases, from Idea Generation to Recycling.
    - **Community Engagement:** Engage with Tree members to identify Needs and generate Ideas.
    - **Collaboration:** Work with other Branches within the Tree and, when appropriate, collaborate with other Trees to achieve common goals.

**Role of a Tree in the Trust System**

**Autonomy and Self-Governance**

- **Decision-Making:** Trees have the autonomy to make decisions regarding resource allocation, project priorities, and contributions to Turtle.
- **Democratic Processes:** Members participate in voting and governance, ensuring that the Tree's actions reflect the collective will.

**Alignment with Trust Values**

- **Sustainability:** Trees adhere to sustainable practices in all operations, contributing to the overall environmental goals of the Trust system.
- **Equity and Transparency:** Promote fairness and openness in resource distribution and decision-making processes.
- **Community Well-Being:** Focus on meeting the Needs of their members, enhancing quality of life and social cohesion.

**Collaboration with Turtle and Other Trees**

- **Resource Contribution:** Provide surplus resources to Turtle, supporting projects and Needs across the entire Trust ecosystem.
- **Exchange Mechanisms:** Engage in the exchange of Berries and **Nutrients**, influenced by factors such as sustainability practices and contributions.
- **Inter-Tree Cooperation:** Collaborate with other Trees on shared initiatives, fostering unity and mutual support.

**Interaction with the Nutrients Exchange Rate System**

- **Contributions Impact Exchange Rate:** The Tree's contributions to Turtle, adjusted for time decay, influence the exchange rate between Berries and **Nutrients**.
- **Time Decay Factor:** Recognizes that recent contributions have a greater impact, encouraging ongoing support to Turtle.
- **Voting on Decay Rate:** Trees participate in system-wide votes to determine the decay rate, aligning economic policies with collective priorities.

**Governance Structure within a Tree**

**Democratic Participation**

- **Voting Processes:** Members vote on key decisions, such as resource contributions to Turtle and project prioritization.
- **Inclusive Engagement:** Ensures all members have a voice in the Tree's direction and policies.

**Transparency and Accountability**

- **Open Communication:** Operations, decisions, and financial transactions are transparent to all Tree members.
- **Responsibility:** Leaders within the Trunk are accountable to the members, upholding the Tree's values and objectives.

**Adaptability and Growth**

- **Continuous Improvement:** Trees assess and adapt their strategies to meet evolving Needs and environmental conditions.
- **Innovation Encouragement:** Support the development of new Ideas and projects that align with the Tree's mission and the Trust system's goals.

**Benefits of Defining the Organizational Unit as a Tree**

- **Clarity:** Distinguishes individual organizational units from the overall Trust system, reducing confusion.
- **Intuitive Metaphor:** The Tree structure naturally represents the interconnectedness of Roots, Trunk, and Branches.
- **Holistic Representation:** Captures the full scope of activities and responsibilities within an organizational unit.
- **Alignment with Nature:** Reflects the Trust system's emphasis on sustainability and harmony with the environment.

**Conclusion**

The **Tree** serves as a foundational entity within the Trust system, encapsulating the combined efforts of Roots, Trunk, and Branches to meet the Needs of its members and contribute to the broader ecosystem. By adopting the term Tree, the Trust system enhances clarity and reinforces the interconnected nature of its organizational units. Each Tree operates autonomously yet remains aligned with the core values of sustainability, equity, transparency, and collaboration, embodying the principles that drive the Trust system toward a more equitable and thriving society.

# **Needs** of **Branches** and **Roots**

## Introduction

Within the **Trust** system, **Branches** and **Roots** represent the structural and foundational elements that drive projects and initiatives forward. Just as individuals have **Needs** and

**Ideas**, **Branches** and **Roots** also possess **Needs** essential for their creation, development, and successful operation. This section explores how these **Needs** are defined, addressed, and managed within the **Trust** ecosystem, emphasizing their unique characteristics and the collaborative processes involved.

# Defining Needs for Branches and Roots

### Creation of Needs

- **During Creation:**
  - When a **Branch** or **Root** is established, its initial **Needs** are identified and defined.
  - These **Needs** outline the resources, support, and actions required to bring the **Branch** or **Root** into existence and ensure its viability.
- **Designated Person:**
  - A specific individual within the **Branch** or **Root** is designated to define and manage its **Needs**.
  - This **Person** acts as a representative, communicating the **Needs** to the broader **Trust** community and coordinating efforts to fulfill them.

### Characteristics of Branch and Root Needs

- **Necessity Status:**
  - All **Needs** of **Branches** and **Roots** are considered **Necessities** by default.
  - Unlike individual users who may have **Desires** (wants that are not essential), **Branches** and **Roots** focus solely on **Needs** that are critical for their function and contribution to the **Trust** system.
- **Alignment with Trust Objectives:**
  - The **Needs** must align with the overarching goals and values of the **Trust** ecosystem.
  - They should promote collaboration, sustainability, innovation, and benefit to the community.

# Addressing Needs Across Multiple Branches and Roots

### Shared Needs

- **Common Objectives:**
  - Multiple **Branches** or **Roots** may identify a common **Need**, such as shared infrastructure, resources, or expertise.
  - Collaborating on shared **Needs** fosters synergy and efficient use of resources.

### Voting Mechanism for Shared Needs

- **Designated Voters:**

    - When addressing a shared **Need**, the voting participants are the designated **Persons** from each involved **Branch** or **Root**.
    - These representatives bring the perspectives and priorities of their respective **Branches** or **Roots** to the decision-making process.

- **Decision-Making Process:**

    - **Proposal Submission:**
        - A proposal to address the shared **Need** is developed collaboratively or by one of the involved parties.
    - **Discussion and Deliberation:**
        - Representatives discuss the proposal, assess its feasibility, and suggest modifications if necessary.
    - **Voting:**
        - Each designated **Person** casts a vote on the proposal.
        - The voting process follows the **Tree's** established protocols for collective decision-making.
    - **Outcome Implementation:**
        - If the proposal is approved, the involved **Branches** or **Roots** coordinate to implement the solution.

**Benefits of Collaborative Addressing**

- **Resource Optimization:**
    - Pooling resources reduces duplication of efforts and maximizes the impact of available assets.
- **Strengthened Relationships:**
    - Collaborative efforts build stronger ties between **Branches** and **Roots**, enhancing **Trust** and cooperation.
- **Enhanced Problem-Solving:**
    - Diverse perspectives contribute to more innovative and effective solutions.

# Management of Needs

**Role of the Designated Person**

- **Responsibilities:**
    - **Need Identification:**
        - Continuously identify and assess the **Needs** of the **Branch** or **Root**.
    - **Communication:**
        - Clearly articulate **Needs** to the **Trust** community and other relevant parties.
    - **Coordination:**
        - Facilitate collaborations with other **Branches**, **Roots**, or users to address **Needs**.

    - **Monitoring:**
        - Track the progress of initiatives aimed at fulfilling the **Needs** and report on outcomes.

**Accountability and Transparency**

- **Documentation:**
    - All **Needs** and related proposals are documented in the **Tree's** records.
    - Transparency ensures that the **Trust** community is informed about the priorities and activities of each **Branch** or **Root**.
- **Feedback Mechanisms:**
    - Allow community members to provide input or suggestions regarding the **Needs**.
    - Feedback can lead to refinements and improved strategies for addressing **Needs**.

# Distinct Nature of Branch and Root Needs

- **Necessity Over Desire:**
    - **Branches** and **Roots** focus exclusively on **Necessities**, reflecting their purpose-driven nature.
    - This approach ensures that resources are directed toward essential functions and strategic goals.
- **Strategic Alignment:**
    - **Needs** are evaluated based on their alignment with the **Tree's** mission and long-term objectives.
    - Prioritization is given to **Needs** that advance the collective interests of the community.

# Process Flow for Addressing Branch and Root Needs

1. **Need Identification:**
    - The designated **Person** defines a **Need** during the creation of the **Branch** or **Root** or as it evolves.
2. **Proposal Development:**
    - A detailed plan or proposal is created to address the **Need**, including required resources and anticipated outcomes.
3. **Communication:**
    - The **Need** and proposal are communicated to the **Trust** community or specific **Branches**/**Roots** if collaboration is sought.
4. **Voting and Approval:**
    - In cases involving shared **Needs** or significant resource allocation, the designated **Persons** vote on the proposal.
5. **Implementation:**
    - Upon approval, actions are taken to fulfill the **Need**, with coordination among involved parties.

6. **Monitoring and Reporting:**
    - Progress is monitored, and updates are provided to ensure transparency and accountability.
7. **Completion and Evaluation:**
    - Once the **Need** is addressed, outcomes are evaluated against the objectives, and learnings are documented for future reference.

## Examples of Branch and Root Needs

- **Infrastructure Development:**
    - A **Root** requires technological infrastructure to support multiple **Branches**.
    - The designated **Person** proposes acquiring or developing the necessary systems.
- **Resource Acquisition:**
    - Several **Branches** need access to a shared resource, such as specialized equipment.
    - Designated **Persons** collaborate to procure the resource collectively.
- **Expertise and Training:**
    - A **Branch** identifies a **Need** for specialized skills.
    - The designated **Person** seeks training programs or experts, possibly in collaboration with other **Branches**.

## Conclusion

The management of **Needs** for **Branches** and **Roots** is a critical component of the **Trust** system's functionality and success. By clearly defining **Necessities** and empowering designated **Persons** to coordinate efforts, **Trust** ensures that its foundational structures are robust and aligned with its core values. Collaborative approaches to shared **Needs** not only optimize resource utilization but also strengthen the community's cohesion and capacity for innovation. This focus on **Necessities** over **Desires** emphasizes the strategic and mission-driven nature of **Branches** and **Roots** within the **Trust** ecosystem.

# **Level** and Experience Points (XP)

In the **Trust** system, each **Person**'s salary and progression are based on their **Level**, which increases with the accumulation of **Experience Points (XP)**. XP is earned by contributing to successful phases of a **Branch** or a **Root** and is distributed based on individual efforts, teamwork, project success, and the satisfaction of the community impacted by the project.

**Base Salary and Level Advancement**

- **Base Salary Determination**:
    - The base salary for each **Level** is defined by community vote, ensuring transparency and collective agreement.
    - Salary increases with each **Level** advancement, reflecting the user's growing experience and contributions.
- **XP Accumulation and Leveling Up**:

    - **XP is earned through participation in project phases**, with a focus on successful delivery and community satisfaction.
    - The amount of **XP** required to advance to the next **Level** is determined by vote and may increase progressively (e.g., each new **Level** requires 30% more **XP** than the previous one).

**XP Allocation and Timing**

- **Phase Completion XP**:
    - **Partial XP** is awarded upon the successful completion of each project phase:
        - **Investigation Phase**: Participants receive **XP** upon successfully completing research and planning tasks.
        - **Development Phase**: **XP** is awarded for creating viable project plans and solutions.
        - **Production Phase**: Participants earn **XP** for effectively producing or constructing the project's deliverables.
    - This immediate reward acknowledges individual contributions and maintains motivation throughout the project.
- **Distribution Phase XP Based on Community Satisfaction**:
    - Upon reaching **Phase 4: Distribution**, **XP is awarded according to a Satisfaction Index** determined by the community affected by the project.
        - **Community Voting**:
            - The beneficiaries of the project vote to express their satisfaction with the delivered solution.
            - The Satisfaction Index is calculated based on the percentage of positive feedback.
        - **XP Calculation**:
            - The **Distribution Bonus XP** is adjusted according to the Satisfaction Index.
            - **Higher satisfaction** leads to **greater XP rewards** for participants.
        - **Example**:
            - If the community satisfaction is 90%, participants receive 90% of the maximum possible **Distribution** Bonus **XP**.
- **XP Distribution Criteria**:
    - XP is distributed within **Development** teams based on:
        - **Individual Contributions**: Assessed through peer evaluations and objective performance metrics.
        - **Teamwork and Collaboration**: Recognition of effective communication and cooperative efforts.
        - **Project Success and Community Satisfaction**: Alignment with the successful achievement of project objectives and beneficiary approval.

**Difficulty Factor**

- **Definition**:
    - A modifier assigned to a project based on its complexity and challenges.

- **Calculation Factors**:
  - **Project Complexity**: Technical difficulty and scope.
  - **Failed Attempts**: Number of previous unsuccessful solutions.
  - **Time Without a Solution**: Duration the **Need** has remained unaddressed.
  - **Level of Need**: Urgency and importance as expressed by those affected.
  - **Expert Opinions**: Insights from specialists regarding project challenges.
  - **Resource Availability**: Access to suitable professionals and materials, prioritizing disadvantaged sectors with complex problems.
- **Impact on XP**:
  - **Higher Difficulty Factor** increases the amount of **XP** awarded, reflecting the greater effort required.

**Trace Badges**

- **Definition**:
  - A multiplier of **XP** at the individual **Level** based on credentials.
- **Calculation**:
  - It's a percentage boost in **XP** earnings based on credentials gained in Trace.
  - It only applies when performing tasks in the fields of the credentials.

**Bonuses**

- **Definition and Purpose**:
  - Additional **XP** incentives applied to projects exhibiting desirable characteristics, encouraging alignment with **Trust** values.
- **Bonus Criteria**:
  - **Sustainability**: Projects that are ecological and promote environmental responsibility.
  - **Maintainability**: Solutions that are easy to maintain over time.
  - **Self-Sustainability**: Projects that can operate independently after implementation.
  - **Decentralization**: Initiatives that distribute resources and control equitably.
  - **Modularity**: Solutions designed with flexibility and scalability in mind.
- **Implementation**:
  - **Proposal and Voting**:
    - Any user can propose a bonus criterion.
    - Proposals are subject to community vote.
    - Only proposals surpassing a cutoff percentage are adopted.
  - **Bonus Level Determination**:
    - The magnitude of the bonus is determined by the **Voting Level**, reflecting the **Tree's** community prioritization of certain values.

**Level Advancement and Salary Increase**

- **Percentage-Based Progression**:
  - The XP required for **Level** advancement and the corresponding salary increase are percentage-based and determined by community vote.
  - **Example**:
    - Advancing to a new **Level** requires **30% more XP** than the previous **Level**.

        - Achieving a new **Level** results in a **20% increase** in monthly salary.
- **Recognition of Growth**:
    - **Level** advancement signifies personal and professional development within the **Tree**.
    - Higher **Levels** grant users increased earning potential and recognition for their contributions.

**Vacation Time and XP Preservation**

- **Balancing Productivity and Well-being**:
    - The system provides **vacation time** during which a user's **XP** is not subject to decay, promoting rest and preventing burnout.
- **Vacation Time Allocation**:
    - Expressed as a percentage of overall participation time.
    - **Minimum and Maximum Limits**:
        - Proposed by experts in health and economics to ensure sufficient rest and maintain system productivity.
        - **Minimum Percentage**: Guarantees a baseline of rest for all users.
        - **Maximum Percentage**: Prevents excessive absence that could hinder project progress.
- **Adjustments via Vote**:
    - The community can adjust vacation time percentages through voting.
    - Decisions must be supported by research outlining impacts on individual well-being and system efficiency.

**XP Loss and Inactivity**

- **Inactivity Consequences**:
    - **XP Decay**:
        - Occurs when a user is inactive beyond their allocated vacation time.
        - The rate of XP loss (referred to as "gravity") is determined by community vote.
    - **Level Decrease**:
        - Prolonged inactivity may result in a decrease in **Level**, affecting salary and recognition.
- **Preventing XP Loss**:
    - **Active Participation**:
        - Engaging in any project phase, regardless of success, counters **XP** decay.
    - **Vacation Time Utilization**:
        - Users can utilize their allocated vacation time to preserve **XP** during planned absences.
- **Encouraging Balance**:
    - The system promotes a healthy balance between work and rest.
    - Users are encouraged to take sufficient breaks without penalizing their progress, provided they remain within expert-advised limits.

**Summary of Key Points**

- **XP is earned through active participation and successful project completion**,

with significant emphasis on delivering solutions that satisfy community **Needs**.
- **Partial XP rewards** maintain motivation throughout each project phase, while the **Distribution Bonus XP** is adjusted based on the **Satisfaction Index** from the affected community.
    - **Community Satisfaction Index**:
        - Reflects the beneficiaries' approval of the project's outcome.
        - Directly influences the amount of **XP** awarded during the **Distribution** Phase.
        - Encourages teams to focus on quality and relevance to the **Tree's** community **Needs**.
- **Difficulty Factors and Bonuses** ensure that challenging projects and those aligning with the **Tree's** core values are appropriately rewarded.
- **Level advancement** reflects personal growth, offering increased salaries and recognition within the system.
- **Vacation time and XP decay mechanisms** balance productivity with well-being, encouraging sustainable participation without penalizing necessary rest.

# **Berries** as Trees Digital Currency

**Introduction**
**Berries** are the digital currency used within every **Tree**, designed to foster collaboration, continuous effort, and social contribution among its members. Generated as a monthly salary in each **Person's** account according to their **Level**, **Berries** represent not only a means of exchange but also a reflection of commitment and participation in the community. This document expands and enhances the concept of **Berries**, integrating previous learnings and modifications to create a solid, transparent economic system aligned with **Tree's** values.

## Key Features of Berries

**1. Blockchain-Based**
- **Secure and Transparent Transactions:**
    - **Berries** operate on **blockchain** technology, ensuring that all transactions are secure, transparent, and verifiable by any member of the system.
- **Immutable Record:**
    - Each **Berry** is recorded on the blockchain, making it tamper-proof and traceable from its creation to its final use.
- **Efficient Consensus Mechanisms:**
    - Cryptocurrency models that do not require direct monetary rewards for validators are used, such as **IOTA**, **Nano**, or **Hashgraph**, aligning with **Tree's** values of sustainability and collaboration.
    - These systems allow for validating transactions and votes without financial incentives, reducing energy consumption and encouraging active community participation.

**2. Expiration Date**

- **Defined Temporal Validity:**
  - Each **Berry** has an **expiration date** set at the time of its creation, consisting of the **year and month** of expiration.
- **Community Voting:**
  - The duration of **Berries**' validity is determined by community voting, allowing adjustment of economic flow according to the system's **Needs**.
  - **Initial Suggestion:** A validity period of **one year**, with the possibility of adjustment through community consensus.
- **Monthly Updates for Physical Version:**
  - A system of **monthly stamps** is implemented, applied to **Berries** to indicate the month of expiration and make it difficult for expired **Berries** to circulate.
- **Inflation Control and Economic Stability:**
  - The expiration of **Berries** helps control inflation, prevent excessive accumulation of wealth, and encourage the continuous circulation of currency.

**3. Transaction Method**

- **Random Exchange and Mixing of Dates:**
  - **Berries** transactions are conducted in a way that mixes expiration dates, maintaining a **constant percentage of expiration** in circulation.
- **Prevention of Speculation:**
  - This method makes speculation and hoarding of **Berries** difficult, promoting a more equitable and responsible use of the currency.
- **Transaction Transparency:**
  - All transactions are recorded on the blockchain, allowing members to verify the flow of **Berries** and ensuring the integrity of the economic system.
- **Accessibility and Ease of Use:**
  - The transaction platform is intuitive and accessible, facilitating efficient exchanges for all members.

**4. Salary and Levels**

- **Monthly Salary Based on Level:**
  - Members receive a monthly salary in **Berries** according to their **Level** within their **Tree**.
- **Level Progression:**
  - There is no maximum limit on achievable **Levels**. However, the difficulty to advance increases with each new **Level**, incentivizing constant improvement and significant contribution to the community.
- **Retirement Salary:**
  - Upon retirement, members receive a salary equivalent to the **average salary** of the entire **Tree**, guaranteeing economic security and recognition of their contributions.
- **Salary Equity:**
  - This model avoids disproportionate salary differences, promoting equity and maintaining trust and transparency in the community.

**5. Integration with the Voting System**

- **Blockchain-Based Voting:**
  - The voting system is also implemented on the blockchain, ensuring that votes are secure, anonymous, and verifiable.

- **No Monetary Rewards for Validation:**
    - Mechanisms that validate transactions and votes without offering monetary rewards to validators are employed, aligning with the philosophy of collaboration and sustainability.

**6. Physical Representation of Berries**

- **Physical Analog System:**
    - In communities without internet access, **Berries** can be represented through **physical tokens** or **bills** with security features.
- **Design with Expiration Date:**
    - Physical tokens include the **year** in their design, and the **month** of expiration is stamped using monthly stamps with intricate designs that change each month.
- **Security Mechanisms:**
    - Measures such as watermarks, special inks, and embossed elements are incorporated to prevent counterfeiting.
- **Integration with the Digital System:**
    - Physical transactions are recorded in the community ledger, maintaining coherence with the digital system and ensuring transparency.

## Benefits of the Berries System

**Promoting Social Contribution**

- By having a temporal validity, **Berries** incentivize members to use them actively in projects and activities that benefit the community.
- The **Need** to renew **Berries** through continuous participation prevents passive accumulation and promotes constant engagement.

**Economic Stability and Inflation Control**

- The expiration and controlled issuance of **Berries** help maintain a balanced economy, avoiding inflation and ensuring that the currency reflects the real value of contributions.

**Transparency and Trust**

- Implementation on blockchain ensures that all transactions are transparent and auditable, increasing trust among members.
- The absence of financial incentives for validators eliminates conflicts of interest and reinforces the integrity of the system.

**Sustainability and Alignment with Tree's Values**

- By using efficient and sustainable mechanisms for transaction validation, the **Berries** system aligns with **Tree's** environmental and social values.
- It promotes responsible and collaborative economic practices, strengthening community cohesion.

## Challenges and Solutions

**Technological Accessibility**

- **Challenge:**
    - Ensuring that all members can access and use the **Berries** system, regardless

of their level of technological familiarity.

- **Solution:**
  - Develop user-friendly interfaces and offer continuous training and support.
  - Implement physical solutions in communities without digital access.

**Security and Fraud Prevention**

- **Challenge:**
  - Protecting the system against attempts at manipulation, counterfeiting, or cyber-attacks.
- **Solution:**
  - Use robust and up-to-date blockchain technologies.
  - Implement additional security measures such as multi-factor authentication and constant monitoring.

**Education and Community Adoption**

- **Challenge:**
  - Ensuring that all members understand the functioning and benefits of the **Berries** system.
- **Solution:**
  - Organize workshops, informational sessions, and provide accessible educational materials.
  - Encourage active participation and collect feedback for continuous improvements.

**Conclusion**

**Berries** are more than a digital currency within a **Tree**; they are a tool to foster collaboration, continuous improvement, and social contribution. By integrating advanced technologies like blockchain with principles of sustainability and equity, the **Berries** system strengthens the community, promotes transparency, and aligns individual actions with collective goals. Through a careful approach in design and implementation, **Berries** contribute significantly to the success and resilience of the **Trust** ecosystem.

# Blockchain-Based Voting

1. **Overview** Blockchain-based voting leverages the principles of blockchain technology to ensure secure, transparent, and immutable voting. It provides an unalterable record of votes that can be independently verified while maintaining voter anonymity.
2. **Key Components**

- **Blockchain Ledger**: A decentralized and distributed ledger that records all votes.
- **Smart Contracts**: Self-executing contracts with the terms of the agreement written directly into code, used to automate vote counting and validation.
- **Cryptographic Techniques**: Advanced cryptography ensures voter anonymity and vote security.
- **User Interface**: A secure and user-friendly interface for casting votes.

3. **Process**

a. **Voter Registration**

- Voters register through a secure system that verifies their identity.
- Once verified, each voter is issued a unique cryptographic key pair (public and private keys).
- The public key identifies the voter on the blockchain, while the private key signs their vote, ensuring authenticity.

b. **Voting**

- Voters cast their vote using a secure application (mobile or web).
- The vote is encrypted and signed with the voter's private key.
- The signed vote is sent to the blockchain network.

c. **Vote Recording**

- Each vote is recorded as a transaction on the blockchain.
- Blockchain nodes (network participants) validate the transaction using consensus mechanisms (e.g., Proof of Stake, Proof of Work).
- Once validated, the transaction is added to a block and linked to the previous block, forming a chain.

d. **Vote Counting**

- Smart contracts automatically count votes as they are added to the blockchain.
- The results are transparent and can be audited by anyone with access to the blockchain.
- The final tally is computed once the voting period ends.

4. **Security Measures**

- **Immutable Ledger**: Once recorded, a vote cannot be altered or deleted.
- **End-to-End Encryption**: Votes are encrypted from the moment they are cast until they are counted.
- **Consensus Mechanism**: Multiple nodes must agree on the validity of a vote before it is recorded, preventing tampering.
- **Public and Private Keys**: Voter identities are protected by cryptographic keys, ensuring anonymity.

5. **Anonymity**

- **Pseudonymity**: Voters are represented by their public key, which does not reveal their actual identity.
- **Zero-Knowledge Proofs**: Advanced cryptographic methods that allow one party to prove to another that a statement is true without revealing any information about the

statement itself. This can be used to verify that a vote is valid without revealing the vote itself.
- **Ring Signatures**: A type of digital signature that can be performed by any member of a group of users, each with their own keys, ensuring that the signer's identity remains anonymous.

6. **Verifiability**

- **Transparent Audit Trail**: Every vote is recorded on a public ledger, allowing for complete transparency.
- **Voter Verification**: Voters can verify that their vote has been recorded correctly without revealing their identity.
- **Independent Audits**: Third parties can independently verify the integrity of the vote tally.

7. **Advantages**

- **Security**: High levels of security due to cryptographic techniques and decentralized validation.
- **Transparency**: The public ledger allows for transparent and independent verification of results.
- **Anonymity**: Cryptographic measures ensure voter anonymity while maintaining vote integrity.
- **Immutability**: Once recorded, votes cannot be altered, ensuring the integrity of the election.

8. **Challenges**

- **Scalability**: Blockchain networks can become slow and expensive as the number of transactions increases.
- **Accessibility**: Requires access to digital devices and a reliable internet connection.
- **Complexity**: Requires voter education and understanding of the technology.

## Expert-Weighted Voting System

To enhance decision-making within the **Tree** while maintaining democratic principles, an **Expert-Weighted Voting System** is introduced. This system balances the collective input of all participants with the specialized knowledge of experts in relevant fields. By incorporating expert insights into the voting process, **Trust** ensures that decisions, especially those of a technical or complex nature, are both democratically legitimate and informed by the best available knowledge.

**Overview**

- **Expert Voting Phase**: Experts cast their votes on specific issues or projects within their area of expertise.

- **Determination of Weighting Factors**: The results of the expert vote establish weighting factors for the general voting process.
- **General Voting Phase**: All participants vote on the issue, with their votes influenced by the weighting derived from expert opinions.
- **Final Decision**: The outcome reflects both the will of the community and the informed guidance of experts, with final percentages scaled proportionally to sum up to 100%.

**Implementation Details**

**1. Identification of Relevant Experts**

- **Expert Criteria**: Experts are individuals with recognized qualifications, experience, and credibility in a specific field relevant to the decision at hand.
- **Expert Pool Maintenance**: The **Trunk** maintains a dynamic registry of experts across various domains, ensuring diversity and representation.
- **Conflict of Interest Checks**: Experts must disclose any potential conflicts to maintain the integrity of the voting process.

**2. Expert Voting Phase**

- **Invitation to Vote**: When a decision requires specialized knowledge, relevant experts are notified to participate in the expert voting phase.
- **Confidential Voting**: Experts cast their votes independently to prevent undue influence and promote honest opinions.
- **Aggregation of Expert Votes**: The system calculates the percentage of experts in favor or against a proposal.

**3. Determination of Weighting Factors**

- **Calculating Weights**: The percentage results from the expert vote determine the weighting factors applied to the general vote.
    - **Example**: If 80% of experts support a proposal and 20% oppose it, these percentages become the weighting factors.
- **Adjustable Scaling**: The weighting factors can be adjusted to ensure practical influence without overpowering the general vote.

**4. General Voting Phase**

- **Information Dissemination**: Participants receive comprehensive information about the proposal, including:
    - **Detailed Descriptions**: Clear explanations of the issues or projects being voted on.
    - **Expert Opinion Summaries**: Insights into the expert consensus and key arguments.

    - **Weighting Explanation**: Transparency about how expert opinions will influence the voting outcome.
- **Casting Votes**: All participants vote according to their convictions, informed by both the proposal details and expert insights.

**5. Calculation of Final Outcome**

- **Applying Weighting Factors**:

Weighted Support = (General Support Vote %) × (Expert Support Weight)

Weighted Oppose = (General Oppose Vote %) × (Expert Oppose Weight)

- **Total Weighted Votes**:

Total Weighted Votes = Weighted Support + Weighted Oppose

- **Scaling to 100%**:

Scaled Support % = (Weighted Support / Total Weighted Votes) × 100%

Scaled Oppose % = (Weighted Oppose / Total Weighted Votes) × 100%

- **Result Aggregation**: The scaled percentages are used to determine the final decision, ensuring that they sum up to 100%.
- **Outcome Announcement**: Results are communicated transparently, showing the influence of expert weighting and the scaling process.

**Example Scenario**

**Decision**: Adoption of a new environmental regulation.

1. **Expert Voting Phase**:
    - **Experts in Environmental Science Vote**:
        - Support: 80%
        - Oppose: 20%
    - **Weighting Factors Determined**:
        - Expert Support Weight: 0.8
        - Expert Oppose Weight: 0.2
2. **General Voting Phase**:
    - **General Vote Results**:
        - Support: 60%
        - Oppose: 40%
3. **Calculation of Final Outcome**:
    - **Applying Weighting Factors**:

Weighted Support = 60% × 0.8 = 48%

Weighted Oppose = 40% × 0.2 = 8%

- **Total Weighted Votes**:

Total Weighted Votes = 48% + 8% = 56%

- **Scaling to 100%**:

Scaled Support % = (48% / 56%) × 100% ≈ 85.71%

Scaled Oppose % = (8% / 56%) × 100% ≈ 14.29%

- **Final Outcome**:
  - **Support**: ≈ 85.71%
  - **Oppose**: ≈ 14.29%
  - **Decision**: The regulation is adopted with a significant majority after weighting and scaling.

**Benefits of the Expert-Weighted Voting System**

- **Informed Decisions**: Ensures that specialized knowledge informs critical decisions without excluding general participant input.
- **Democratic Integrity**: Maintains the fundamental democratic principle that all participants have a voice in the decision-making process.
- **Transparency**: Participants understand how expert opinions affect outcomes, fostering trust in the system.
- **Educational Value**: Access to expert insights educates participants, leading to more informed voting choices.
- **Proportional Clarity**: Scaling the final percentages to sum to 100% enhances clarity and comprehension of results.

**Safeguards and Considerations**

**Expert Selection Integrity**

- **Verification Processes**: Experts are vetted for qualifications and potential biases.
- **Rotation and Renewal**: Regular updates to the expert pool prevent stagnation and encourage fresh perspectives.

**Weighting Limits**

- **Maximum Influence Cap**: A cap on expert influence prevents over-centralization of power.

- **Issue-Based Adjustments**: Weighting factors can be modified depending on the issue's technical complexity and societal impact.

**Accountability and Oversight**

- **Performance Monitoring**: Experts are evaluated based on decision outcomes and adherence to ethical standards.
- **Feedback Mechanisms**: Participants can provide feedback on expert contributions and suggest improvements.

**Educational Initiatives**

- **Workshops and Seminars**: Opportunities for participants to learn about complex issues enhance overall system knowledge.
- **Interactive Platforms**: Q&A sessions with experts allow for direct engagement and clarification of concerns.

**Integration with Tree's Core Principles**

- **Alignment with Transparency**: The system upholds **Tree's** commitment to open and transparent processes.
- **Promotion of Sustainability**: Expert input in areas like environmental management ensures decisions contribute to long-term societal well-being.
- **Enhancement of Resource Allocation**: In resource management, expert weighting aids in the efficient and responsible distribution of resources.

**Application Areas**

- **Resource Management**: Decisions on allocating scarce resources benefit from expert input to prevent misuse and promote sustainability.
- **Technological Developments**: Projects involving advanced technologies require expert guidance to assess feasibility and risks.
- **Healthcare Initiatives**: Medical experts inform decisions impacting public health, ensuring safety and efficacy.
- **Economic Policies**: Economists and financial experts contribute to policies affecting the system's economic stability.

**Conclusion**

The **Expert-Weighted Voting System** enriches the **Trust** framework by integrating specialized knowledge into the democratic process. By proportionally scaling the final weighted percentages to reach 100%, the system maintains clarity and ensures that the influence of expert weighting is transparent and comprehensible. This balanced approach fosters a more effective and responsive system, better equipped to meet the challenges of a dynamic society.

# Selection and Teams

To make a **Tree** more transparent, efficient, and ecological, teams are formed for each phase, and each phase is repeated until the objective of the phase is satisfied.

## Phase Participation

- **Open Draw**: Each phase involves an open draw with participation requirements determined by the previous phase, an expert, the number of times the phase has been tried, and previous similar projects.
- **Participant Selection**: A percentage of participants are selected randomly, while the rest are based on team assignments.

## Team Formation

- **Compatibility Tree**: Teams are formed using a compatibility tree based on system statistics and compatibility declarations.
- **Inclusivity**: A percentage of participants with outdated or no compatibility data are included to create opportunities and increase team flexibility. This percentage depends on the difficulty **Level** of the project.
- **Success Rate**: Teams are organized according to system-determined success rates for different configurations, managed using Artificial Intelligence and Big Data.

## Internal Evaluation

- **Rating System**: At the end of a phase, team members evaluate each other's compatibility, rating participants from 1 to 5 stars.

## Problem Mediation

- **Complaint Submission**: To address problems within a team, complaints can be submitted to the **Tree**.
- **Mediator Role**: A mediator outside the team ensures the anonymity of those involved.
- **Anonymous Voting**: The team votes anonymously to assess the severity of the problem, and the mediator provides a solution.
- **Mediator Evaluation**: At the end of the phase, the mediator is evaluated on a scale of 1 to 5 stars. Team members can also vote to replace the mediator if necessary.

## Notifications and Assignments

- **Notifications**: Each **Person** is notified when a **Need** or project phase affecting their geographic sector advances.
- **Profile Matching**: Those who fit the necessary profile or are compatible with the selected group may also be notified.

- **Annual Work Calendar**: The system can automatically assign projects to a **Person** to create an annual work calendar, avoiding large gaps between projects.

## Team Leadership Selection

To ensure effective and fair team leadership, the process combines system recommendations and team preferences:

### **1.** System Recommendations

- **Data Analysis**: The system analyzes compatibility, past performance, and relevant experience to generate a list of suitable leadership candidates.
- **Leadership Index**: An index based on previous evaluations, successful projects, and peer feedback helps identify potential leaders.

### **2.** Team Voting Process

- **Transparency**: Detailed profiles of pre-selected candidates, including their leadership index, past projects, and peer reviews, are shared with the team.
- **Anonymous Voting**: Team members vote anonymously for their preferred leader, ensuring unbiased choices.

### **3.** Mixed Selection Method

- **Weighted Voting**: The final decision combines the system's recommendation (30%) and the team's vote (70%). (This percentages can be voted on **Tree** wide)
- **Runoff Voting**: If no candidate achieves a majority, a runoff vote is held among the top candidates from the initial round.

### **4.** Regular Evaluation and Rotation

- **Performance Reviews**: Regular reviews allow team members to provide feedback on their leader, ensuring accountability and effectiveness.
- **Term Limits**: Leaders serve for a predetermined term, with the possibility of re-election based on performance and team vote, to prevent stagnation and encourage fresh perspectives.

## Implementation Steps

1. **Generate Pre-Selected List**: The system generates a list of potential leaders based on data analysis.
2. **Share Profiles**: Detailed candidate profiles are shared with the team.
3. **Team Voting**: An anonymous vote is conducted within the team.
4. **Combine Results**: The final leader is chosen based on a weighted average of the system's recommendation and team votes.

5. **Regular Feedback**: Implement periodic performance reviews and feedback cycles.
6. **Leadership Rotation**: Conduct new leadership selection processes at the end of each term.

This approach ensures that team leaders are both competent and trusted by their teams, fostering a collaborative and effective working environment.

## Mental Health

**Trust** will monitor a **Person**'s statistics and use Machine Learning and Big Data to identify signs of potential mental distress. If signs of mental distress are detected, the system will alert the **Person** and offer free psychological support. During this time, the **Person's XP** state will be frozen to prevent any negative impact. **Trust** will cover the costs of doctors and treatments, incorporating their payment into the system by **XP** and **Level**, just as it does for every other **Person**.

## Improvement and Automation

The various roles and tasks that a **Person** can perform within a **Tree** will have an associated satisfaction index, which will be provided by the **People** themselves.

This index will determine which jobs and functions need improvement and automation. Jobs with the lowest satisfaction index will be prioritized for automation **Ideas**, with a bonus of higher **Berry** earnings as an incentive. The rest will be encouraged for continuous improvement using the same method.

## Managing **Berry** conversion

To maintain economic stability and encourage user participation within a **Tree**, implementing specific measures regarding the conversion and use of **Berries** is essential.

### Key Measures

1. **Limitations on Conversion**:
    - **Concept**: Limit the number of **Berries** that can be converted to any other currency within a specific timeframe.
    - **Benefits**: This measure controls the outflow of **Berries**, preventing large-scale conversions that could destabilize the system.
    - **Implementation**:
        - **Caps**: Set daily, weekly, or monthly caps on conversions.
        - **Dynamic Adjustments**: Adjust caps dynamically based on economic conditions and user behavior.
2. **Desires Purchased Only with Berries**:
    - **Concept**: Restrict the purchase of non-essential goods and services (**Desires**) to **Berries** only.

- **Benefits**: Creates a direct incentive for users to earn and hold **Berries**, as they need them to access **Desires** within the system.
- **Implementation**:
  - **Exclusive Offers**: Ensure that desirable goods, services, or experiences are only available for **Berries**.
  - **Marketplace Integration**: Integrate a marketplace within the **Trust** system for spending **Berries** on **Desires**.
  - **Visibility**: Regularly highlight and promote the available **Desires**.

### Detailed Implementation Suggestions

**Setting Conversion Limits**:

- **Initial Caps**: Start with conservative limits and adjust based on system performance.
- **Monitoring and Review**: Regularly monitor and review conversion activities to ensure effectiveness.
- **User Notification**: Clearly communicate the limits and provide updates on any changes.

**User Education**: Educate users on the benefits of holding **Berries** and participating in the system, emphasizing the exclusive access to **Desires** and the controlled conversion process.

### Advantages

- **Stability**: Limiting conversions helps maintain economic stability by preventing sudden outflows of **Berries**.
- **Incentives**: Restricting **Desires** to **Berries** ensures users have a clear incentive to earn and hold **Berries**.
- **User Engagement**: A well-curated **Desires** marketplace keeps users engaged and reduces frequent conversions to traditional currency.

By implementing limitations on conversion and restricting the purchase of **Desires** to **Berries**, the **Trust** system can effectively maintain economic stability and encourage user participation. These measures address core issues in a straightforward manner, ensuring the integrity and success of a **Tree**. With careful implementation and ongoing monitoring, these strategies can create a sustainable and engaged user community.

## Resource Prioritization and Allocation System

In order to manage the efficient use of resources, **Turtle** will continuously inform the system of the available resource levels. To ensure that projects are prioritized based on both societal demand and resource availability, a dynamic **Resource Prioritization and Allocation System** has been developed. This system allows for the fair **Distribution** of materials, balancing the **Needs** of various **Trees** with the available supply from **Turtle**.

**1. Turtle Resource Availability Dashboard**

**Turtle** acts as the resource manager, providing real-time data on the availability of all raw materials needed for ongoing and future projects. This dashboard will be visible to all **Trees**, offering full transparency on the current levels of each resource, such as metals, water, timber, and other critical materials.

**2. Voting Weight (Demand)**

Each project in a **Tree** gathers **votes** from system participants based on how strongly they feel the project addresses an important **Need** or **Desire**. These votes represent the **demand** for a project. The more votes a project receives, the more it indicates a priority for society.

**3. Resource Weight (Supply)**

In addition to voting, projects submit a detailed request for the resources they require to complete each phase. This resource request is weighted by:

- **Scarcity**: Resources that are in short supply will carry more weight to prevent overuse.
- **Sustainability**: Projects that promote resource efficiency, recycling, or that have a regenerative impact will receive positive weighting.

**4. Priority Point Calculation**

To ensure fair resource allocation, projects are assigned a **priority score** based on both their societal demand and their resource efficiency. This score will be calculated using the following formula:

Priority Score = Vote Weight + Resource Availability Weight - Resource Demand

- **Vote Weight**: The strength of the project's public demand.
- **Resource Availability Weight**: The availability of the required resources, with more plentiful resources carrying lower weight.
- **Resource Demand**: The amount of resources the project **Needs**, penalizing projects that require excessive materials relative to their importance and availability.

This ensures that high-demand, low-resource projects are prioritized, while resource-heavy projects that request scarce materials may **Need** to wait for availability.

**5. Priority-Based Resource Allocation**

Projects with the highest **priority score** will receive the necessary resources first. This process ensures:

- **Efficiency**: Projects that require fewer resources are executed more quickly.

- **Fairness**: Popular projects with broad societal support are completed in priority, but not at the cost of depleting important resources.
- **Sustainability**: Projects that promote environmental sustainability and resource recycling are favored, creating a positive feedback loop within the system.

**6. Incentivizing Recycling and Resource Sustainability**

Projects that demonstrate clear recycling and resource recovery plans will receive additional priority points in their allocation process. This encourages **Trees** to minimize waste and explore regenerative approaches in their project development.

**7. Dynamic Feedback and Voting Adjustment**

As projects submit their resource requests, **Tree** users will receive feedback on the resource availability and the likely success of each project based on current priorities. Users can adjust their votes dynamically, shifting support to projects that have a higher likelihood of success given the available resources.

**8. Automation through Smart Contracts**

The resource prioritization system will be automated using **smart contracts** built into the blockchain. This ensures:

- **Transparency**: Every decision is traceable and visible to all participants.
- **Objectivity**: Resource allocation is based purely on algorithmic calculation, free from human bias or interference.

**9. Example Use Case**

Consider a **Branch** that seeks to develop a new public transportation solution that requires large amounts of steel and electricity. Simultaneously, a **Root** is working on a project to clean and recycle wastewater, requiring minimal raw materials. The public has voted heavily in favor of both projects. However, due to a temporary shortage of steel, the transportation project's priority score is lowered, while the **Recycling** project, which requires fewer resources, is given the green light to proceed immediately.

**Conclusion**

The **Resource Prioritization and Allocation System** balances the **demand** of **Trees** participants with the **availability** of resources managed by **Turtle**. By using a priority point system that factors in both votes and resource **Needs**, the **Trust** system ensures that projects are completed efficiently, sustainably, and equitably. This approach promotes **transparency**, **fairness**, and **long-term resource management**, aligning the system's goals with the overall well-being of the planet and its inhabitants.

# Labor Value in **Trust**

The **Trust** system builds upon and extends classical economic theories of labor value, creating a more nuanced and dynamic approach to calculating the worth of work. This concept is central to how **Berries** are generated and distributed within the system.

Adam Smith, in "The Wealth of Nations," proposed:

"The real price of everything, what everything really costs to the man who wants to acquire it, is the toil and trouble of acquiring it... Labor was the first price, the original purchase-money that was paid for all things."

While **Trust** acknowledges labor as the fundamental source of value, it goes beyond simple time-based calculations to incorporate multiple factors that reflect the true impact and worth of work in a complex society.

## Factors in Calculating Labor Value

1. **Need Impact**: The sum of **Need Points** affected by the work, reflecting its importance to the community.
2. **Difficulty Level**: Assessed for each task or project phase, accounting for complexity and required expertise.
3. **Success Rate**: The outcome of the project or task, encouraging effective execution.
4. **Individual Contribution**: Evaluated within team contexts, promoting both collaboration and personal effort.
5. **Experience (XP) and Level**: Reflecting accumulated skills and knowledge of the contributor.
6. **Bonuses**: Additional value for qualities like sustainability, modularity, or innovation.
7. **Scarcity**: Indirectly incorporated through difficulty assessments and **Need** votes.

## Dynamic Valuation

Unlike more static labor theories, **Tree's** approach allows for dynamic valuation. The worth of similar tasks may vary based on current societal **Needs**, project success, and other real-time factors. This flexibility enables the system to adapt to changing circumstances and priorities.

## Transparency and Fairness

All factors and calculations in labor valuation are transparent and accessible to all participants. This openness promotes fairness and allows for community oversight and adjustment of the valuation process.

### Intellectual and Creative Labor

The system is designed to adequately value intellectual and creative contributions, particularly in the **Ideas** and **Investigation** phases. This addresses a common shortcoming in traditional labor value theories.

### Continuous Relevance

The **XP** decay mechanism ensures that labor value is tied not just to past contributions, but to continued relevance and participation in the system. This encourages ongoing learning and adaptation to new needs and technologies.

By implementing this multi-faceted approach to labor value, **Trust** aims to create a more equitable and responsive economic system. It seeks to accurately reflect the real worth of diverse types of work to society, incentivizing contributions that genuinely meet community needs and promote overall well-being.

## Resource Allocation for **Necessities** and **Desires**

To ensure a balanced and efficient allocation of raw materials, **Trust** introduces two distinct systems for managing resources based on their use: a *Voting System for **Necessities*** and an *Open-Market System for **Desires***. The key difference between these systems lies in how resources are acquired. For ***Necessities***, the system seeks to buy the source of vital resources to secure long-term access, while other resources are purchased from the open market. For ***Desires***, resources are purchased incrementally as needed.

Additionally, resources owned by the system are made available in the open market, but only to projects within a **Tree**, ensuring that **Desires** also have access to these resources.

### Voting System for Necessities

In **Trust**, essential raw materials required to meet fundamental **Needs**—such as food, water, shelter, and basic infrastructure—are managed through a democratic process. The system seeks to acquire and control a limited set of vital resources, defined by community voting, to ensure stable and sustainable access. Initially, the number of vital resources is limited to seven, representing materials critical for life and society.

#### 1. Informed Estimate of Resources:

The system provides a clear estimate of available raw materials and their sources, considering current reserves and future discoveries.

#### 2. Vital Resources Definition:

Through community voting, the system identifies and defines vital resources—those deemed essential for life and society. These vital resources are limited to seven initially, ensuring that only the most critical materials are protected from market forces. However, the system allows for **dynamic reclassification**, where resources can be periodically reassessed and reclassified based on evolving needs and demand.

**3. Acquisition of Resource Sources:**

For these vital resources, the system seeks to buy the source (e.g., mines, farms, water reservoirs) to maintain control over their long-term availability. This ensures that the community has consistent access to essential resources without being subjected to market fluctuations.

**4. Purchasing Non-Vital Resources:**

For other resources not considered vital, the system purchases them from the open market as needed for projects addressing **Necessities**, the amount of **Berries** available for purchasing resources is a direct conversion from the votes, in a one to one basis, this "value of a vote" can be changed according to market forces. This ensures that non-vital resources are still available for essential projects without requiring long-term ownership.

**5. Voting for Resource Allocation:**

Projects that require access to vital resources must reach a voting threshold proportional to the percentage of the resource needed. This democratic process guarantees that the materials are distributed according to community priorities. In cases of resource scarcity, a **weighted resource allocation model** is used, prioritizing vital **Needs** while still allocating some resources to non-essential uses.

**6. Sustainability for Future Generations:**

The system employs algorithms to ensure a portion of vital resources is preserved for future generations, either by acquiring additional sources or limiting current consumption.

**7. Transparency and Fairness:**

All voting outcomes and resource allocations are transparent, ensuring that decisions are fair and equitable.

## Open-Market System for Desires

For non-essential projects, referred to as **Desires**, **Trust** employs an open-market system where resources are purchased as needed. This ensures flexibility and efficiency for acquiring materials.

**1. Market-Based Allocation:**

Projects addressing **Desires** bid for resources in an open market, with prices fluctuating based on demand and availability. Resources go to the highest bidder, ensuring efficient use of materials.

**2. Incremental Purchasing:**

Resources for **Desires** are purchased incrementally, allowing projects to acquire only the materials they **Need** at the time. However, if certain resources become consistently necessary for **Desires** projects, they may be temporarily flagged for a source of the resource purchase, to ensure long-term availability.

**3. Access to System-Owned Resources:**

Resources owned by the **Tree** (such as vital resources and others it controls) are made available on the open market, but only to projects within the tree. This ensures that even **Desires** have access to these critical materials while maintaining a closed loop within the **Trust** ecosystem.

**4. Equal Access for All Trees:**

Different **Trees** can access both system-owned and market-available resources through the open market, ensuring fair competition and innovation within the system.

## Balancing Necessities and Desires

By separating **Necessities** from **Desires**, **Trust** creates a balanced resource allocation system. For **Necessities**, the system secures ownership of the source of vital resources, ensuring these essential materials are protected from market forces and available for the long term. Other resources for **Necessities** are purchased from the open market, ensuring projects have access to what they **Need** without requiring long-term ownership of every resource.

For **Desires**, resources are purchased through the open market as needed. System-owned resources are also available in the open market but only to **Trust** projects, ensuring that even non-essential projects have access to the materials they require while maintaining the integrity of the system's closed resource loop.

Through **dynamic categorization** and **hybrid classification**, **Trust** ensures that resources can be flexibly reallocated as needed. If a **Desires** resource becomes critical to **Necessities**, it can be reclassified based on usage trends and expert advice. This dual approach ensures that the most critical **Needs** are met equitably, while also fostering flexibility and competition for non-essential **Desires**, creating a balanced, sustainable, and innovative resource management system.

# **Trust** Market System and Pricing Mechanism

To ensure a transparent, legal, and equitable exchange of goods and services within a **Tree**, we introduce the **Trust Market**—a centralized marketplace where individuals can buy and sell goods in exchange for **Berries**. This system guarantees that all transactions are compliant with **Tree's** principles and supports sustainable, fair pricing across all products and services.

### 1. Centralized Trust Market

The **Trust Market** will act as a **regulated intermediary** for all exchanges between individuals, ensuring that all goods bought or sold are legally compliant with system rules, sustainable, and beneficial to society.

- **Buy and Sell Anything**: Individuals can sell any item or service to the **Trust Market** in exchange for **Berries**. The Market then put these goods for sale at the same price to any user who needs or wants them.
- **Ensuring Fairness**: By centralizing the buying and selling process, the **Trust** Market ensures that no manipulation, exploitation or illegality occurs. All items are priced according to the system's regulations, making the market transparent and fair for all participants.

### 2. Determining Prices

The challenge of determining fair prices for goods and services is solved through a combination of factors, ensuring prices reflect real costs, sustainability, and availability. Here's how prices are calculated:

#### A. Base Pricing System

- **Production Costs**: The price of an item starts with its **total production cost**. This includes the raw materials, labor, development, and distribution costs. The system calculates these costs automatically based on the resources used.
- **Cost-Plus Markup**: A standard markup is added to cover operational costs and ensure the sustainability of the market. This markup can range between 10-20%, depending on the item's complexity and production effort.

#### B. Dynamic Market Pricing

- **Supply and Demand**: The price of items will fluctuate based on **real-time demand and availability** within the system. If demand for an item is high and supply is low, prices will increase to reflect scarcity. Conversely, if supply is abundant and demand is low, prices will drop.

#### C. Scarcity and Sustainability Factors

- **Scarcity Multipliers**: Products made from scarce or finite resources will have a **scarcity multiplier** applied to their price. The rarer the resource, the higher the price, which discourages wasteful consumption and encourages resource conservation.
- **Sustainability Discounts**: The sellers that sell products that comply with the **Trust** bonuses will receive bonus **Berries** for the selling of them, this bonus will also be a discount on the buyers side. This incentive encourages both producers and consumers to prioritize sustainability in their choices.

**D. AI and Data-Driven Pricing**

- **Machine Learning Algorithms**: The system will utilize AI to analyze historical data, supply chains, and user behavior to dynamically set prices based on market trends. This allows the system to adjust prices in real time, ensuring that they reflect the current state of the market.
- **Predictive Pricing**: AI will also predict future shortages or surges in demand, allowing the market to proactively adjust prices before significant shifts occur.

**E. Turtle Market Influence**

- **Turtle Resource Pricing**: The prices of raw materials will be set by **Turtle**, based on the availability of resources and the system's exploitation **Levels**. When resources are in limited supply, prices will rise to reflect scarcity, while abundant resources will be priced more affordably.
- **Resource Quotas**: **Turtle** may impose limits on the extraction of key resources to ensure sustainability, which will directly influence their market price.

**3. Maintaining a Fair and Sustainable Market**

The **Trust Market** ensures that all transactions are transparent, sustainable, and equitable. Whether buying essentials or luxuries, users can trust that prices are fair, resources are allocated responsibly, and the market supports the well-being of all participants.

This centralized market model supports the core principles of the **Trust** system: **transparency**, **efficiency**, **agency,** and **flexibility**. It provides a stable and regulated platform for the exchange of goods and services, ensuring that the economy remains healthy and balanced.

# Physical Space

- **Project Space**:
    - Physical space needed for Projects is purchased within the budget of the phase.

    - The estimated time of use is calculated, after which or if the phase ended, the space is reassigned to other Projects.
- **System Management**:
    - Ensures necessary physical space is purchased and maintained based on system growth projections.
    - Avoids leasing to maintain transparency and reduce continuous currency conversion between regular money and **Berries**.

# Turtle

**Introduction**
**Turtle** serves as the central governing entity within the **Trust** ecosystem, unifying all individual **Trees** under a single framework. It operates as a cohesive force that oversees resource management, environmental stewardship, and collective decision-making on a global scale. By integrating previous changes and redefining key components, **Turtle** is positioned to enhance collaboration, sustainability, and equitable resource distribution across all **Trees**.

## Turtle as a Single Instance for All Trees

- **Unified Governance:**
    - **Turtle** functions as the singular overarching authority for all **Trees**, providing a unified structure for governance, policy implementation, and strategic planning.
    - It ensures consistency in values, principles, and operational standards across all **Trees**, fostering a cohesive community.
- **Centralized Coordination:**
    - Facilitates coordination among **Trees**, enabling efficient collaboration on projects that have a global impact.
    - Serves as the hub for communication, resource allocation, and knowledge sharing between **Trees**.

## Resource Exchange Through Nutrients

- **Trees Contribute Resources:**
    - Individual **Trees** contribute resources—such as goods, services, or expertise—to **Turtle** in exchange for a better **Nutrients** exchange rate, the universal currency within the **Turtle** ecosystem.
    - This exchange system incentivizes **Trees** to contribute to the collective good, promoting sustainability and mutual support.
- **Nutrients as Medium of Exchange:**
    - **Nutrients** are used by **Trees** to access resources, support projects, and engage in **inter-Tree** collaborations.

    - They facilitate equitable Distribution of resources, ensuring that **Trees** can obtain what they need to thrive.

## Hexagons as Local Overseers

- **Hexagons as Resource Overseers:**
    - The concept of **Hexagons** is redefined to represent local overseers of resource extraction within their designated territories.
    - Each **Hexagon** is responsible for managing natural resources sustainably, overseeing extraction activities, and ensuring environmental protection within its area.
- **Local Governance and Autonomy:**
    - **Hexagons** operate with a degree of autonomy to address local needs and conditions, while aligning with **Turtle's** overarching policies and values.
    - They implement strategies for resource management that reflect the unique ecological and social contexts of their territories.

## Oversight of Hexagons by Turtle

- **Turtle's Supervisory Role:**
    - **Turtle** oversees the activities of **Hexagons**, providing guidance, support, and regulation to ensure compliance with global sustainability standards.
    - It monitors resource extraction practices, environmental impact, and adherence to ethical guidelines.
- **Feedback and Reporting:**
    - **Hexagons** regularly report to **Turtle** on their operations, resource usage, and environmental metrics.
    - This transparency allows **Turtle** to make informed decisions, adjust policies, and provide assistance where needed.

## Direct Voting by Tree's Persons on Turtle's Priorities

- **Democratic Participation:**
    - All **Persons** within the **Trees** have the right to vote directly on **Turtle's** priorities, policies, and strategic initiatives.
    - This democratic approach empowers individuals to have a voice in global decision-making processes.
- **Voting Mechanisms:**
    - Voting is conducted through secure, transparent mechanisms, possibly leveraging blockchain technology to ensure integrity.
    - Topics for voting may include environmental policies, resource allocation strategies, and global project approvals.
- **Collective Influence:**
    - The collective input from all **Tree's Persons** shapes **Turtle's** direction, ensuring that its actions reflect the will and needs of the global community.
    - This fosters a sense of ownership and responsibility among members,

strengthening the cohesion of the ecosystem.

## Integration with Trees

- **Alignment of Goals:**
  - **Turtle's** policies and initiatives are designed to align with the goals of individual **Trees**, promoting synergy and mutual benefit.
  - **Trees** collaborate with **Turtle** to implement projects that require global coordination and resources.
- **Resource Flow and Support:**
  - Through the exchange of resources for **Nutrients**, **Trees** can access support from **Turtle** for large-scale initiatives.
  - **Turtle** redistributes resources where they are most needed, addressing disparities and supporting development.

## Benefits of the Redefined Turtle Structure

**1. Enhanced Sustainability**

- Central oversight ensures that resource extraction and environmental practices meet high sustainability standards.
- Local **Hexagons** manage resources effectively, reducing ecological impact and preserving natural ecosystems.

**2. Greater Collaboration and Unity**

- A unified **Turtle** entity promotes collaboration across **Trees**, fostering a global community working towards common goals.
- Direct participation in decision-making strengthens the bonds between individuals and the larger ecosystem.

**3. Democratic Governance**

- Empowering all **Tree's Persons** to vote on **Turtle's** priorities enhances transparency and accountability.
- Decisions reflect the collective will, leading to policies that are more representative and equitable.

**4. Efficient Resource Management**

- The exchange system involving **Nutrients** incentivizes **Trees** to contribute resources, facilitating efficient allocation.
- **Turtle's** oversight ensures that resources are distributed where they are most needed, optimizing their use.

## Implementation Considerations

**Technological Infrastructure**

- **Blockchain Integration:**
  - Utilize blockchain technology for secure transactions, voting processes, and transparent record-keeping.
- **Accessibility:**
  - Ensure that technological solutions are accessible to all members, including

those in areas with limited connectivity.

**Governance Policies**

- **Regulatory Framework:**
  - Develop clear policies outlining the roles, responsibilities, and regulations governing **Turtle**, **Hexagons**, and **Trees**.
- **Conflict Resolution:**
  - Establish mechanisms for addressing disputes and ensuring compliance with **Turtle's** guidelines.

**Community Engagement**

- **Education and Awareness:**
  - Provide resources to educate members about **Turtle's** structure, their rights, and how to participate effectively.
- **Feedback Mechanisms:**
  - Implement channels for ongoing feedback from **Trees** and individuals to continuously improve the system.

### Conclusion

The redefined **Turtle** serves as a unifying entity that brings together all **Trees** under a single framework, promoting sustainability, collaboration, and democratic participation. By overseeing resource extraction through local **Hexagons**, facilitating resource exchange with **Nutrients**, and empowering individuals to directly influence global priorities, **Turtle** strengthens the cohesion and effectiveness of the **Trust** ecosystem. This holistic approach ensures that collective efforts are aligned, resources are managed responsibly, and the voices of all members contribute to shaping a sustainable future.

## **Nutrients** as the Currency of **Turtle**

### Introduction

Within the **Turtle** ecosystem, **Nutrients** serve as a fundamental currency designed to facilitate collaboration, resource sharing, and **inter-Tree** exchanges. Unlike **Berries**, which are used within individual **Trees**, **Nutrients** operate on a broader scale, enabling **Trees** to interact and support one another in achieving collective goals. This section explores the concept of **Nutrients**, their role in the **Turtle** network, and how they promote a sustainable and cooperative economy.

### What are Nutrients?

**Nutrients** are a form of digital or physical currency used across the **Turtle** ecosystem to represent value and facilitate transactions between different **Trees**. They symbolize the flow of resources, knowledge, and support necessary for the growth and sustenance of projects that benefit the wider community.

**Characteristics of Nutrients**

- **Universal Acceptance: Nutrients** are recognized and accepted by all **Trees** within the **Turtle** network, allowing for seamless transactions and collaborations.
- **Representation of Value:** They embody the collective value of contributions, including goods, services, expertise, and time.
- **Facilitation of Exchange: Nutrients** enable **Trees** to exchange resources efficiently, supporting projects that require collaborative efforts.
- **Promotion of Sustainability:** By aligning with **Turtle's** values, **Nutrients** encourage environmentally friendly practices and equitable resource distribution.

## Role of Nutrients in the Turtle Ecosystem

**1. Facilitating Inter-Tree Collaboration**

- **Resource Sharing: Nutrients** allow **Trees** to share resources, materials, and services, fostering a cooperative environment.
- **Joint Projects:** They enable funding and support for projects that span multiple **Trees**, enhancing collective impact.
- **Knowledge Exchange: Trees** can use **Nutrients** to access expertise and knowledge from other **Trees**, promoting innovation.

**2. Supporting the Economy of Trees**

- **Standardized Currency: Nutrients** provide a common economic framework, simplifying transactions between diverse **Trees**.
- **Economic Stability:** They help maintain a balanced economy by regulating the flow of resources according to the community's needs.
- **Incentivizing Positive Actions: Trees** earn **Nutrients** by contributing to the ecosystem, encouraging actions that align with **Turtle's** mission.

**3. Enhancing Sustainability and Social Impact**

- **Aligning with Values: Nutrients** are designed to promote sustainability, social responsibility, and collaboration.
- **Environmental Stewardship:** Transactions involving **Nutrients** prioritize eco-friendly practices and sustainable resource use.
- **Community Development:** They support initiatives that improve social welfare, education, and community well-being.

## Earning and Using Nutrients

**Earning Nutrients**

**Trees** can improve the exchange rate of **Nutrients** through:

- **Contributing Resources:** Providing goods or services that benefit other **Trees** or the **Turtle** network.
- **Participating in Collaborative Projects:** Engaging in joint initiatives that address common goals.
- **Demonstrating Sustainability:** Implementing environmentally friendly practices and achieving positive evaluations.

**Using Nutrients**

**Nutrients** can be used for:

- **Accessing Resources:** Obtaining materials, services, or expertise from other **Trees**.
- **Supporting Projects:** Funding or contributing to projects that require additional resources.
- **Facilitating Exchanges:** Engaging in trade or barter with other **Trees** in a standardized manner.

## Integration with the Trust System

### Conversion between Berries and Nutrients

- **Exchange Mechanism: Trees** can convert **Berries** (the internal currency) into **Nutrients** based on predefined exchange rates.
- **Favorability Influence:** The conversion rate may be influenced by a **Tree's** favorability rating, encouraging positive actions and alignment with **Turtle's** values.

### Governance and Regulation

- **Community Oversight:** The use and flow of **Nutrients** are overseen by the collective governance structures of the **Trees**.
- **Transparent Transactions:** All exchanges involving **Nutrients** are recorded transparently, ensuring accountability and trust.

## Benefits of Using Nutrients

**1. Promoting Unity and Cooperation**

- **Nutrients** strengthen the bonds between **Trees**, fostering a sense of unity and shared purpose.
- They encourage collaboration over competition, aligning efforts towards common objectives.

**2. Enhancing Economic Efficiency**

- By providing a universal currency, **Nutrients** simplify transactions and reduce barriers to exchange.
- They facilitate efficient allocation of resources where they are most needed.

**3. Encouraging Sustainable Practices**

- The use of **Nutrients** is tied to sustainable actions, incentivizing **Trees** to adopt eco-friendly practices.
- They contribute to the overall environmental goals of the **Turtle** ecosystem.

### Examples of Nutrients in Action

- **Inter-Tree Collaboration: Tree** A requires expertise in renewable energy for a project. **Tree** B provides this expertise in exchange for **Nutrients**, which they can use to access resources from other **Trees**.
- **Supporting Community Initiatives:** Multiple **Trees** pool their **Nutrients** to fund a community education program, sharing the benefits of improved education across the network.
- **Resource Redistribution:** A **Tree** with surplus agricultural produce can offer it to other **Trees** in need, receiving **Nutrients** that they can use to obtain other resources

or services.

## Implementing Nutrients

**Digital Implementation**

- **Blockchain Technology: Nutrients** can be implemented digitally using secure and transparent blockchain technology.
- **Transaction Validation:** Adopting mechanisms that validate transactions without monetary rewards, such as those explored in the research section, aligns with sustainability goals.

**Physical Representation**

- **Tokens or Vouchers:** In communities without digital access, **Nutrients** can be represented by physical tokens or vouchers.
- **Standardization:** Physical **Nutrients** should have standardized designs and security features to prevent counterfeiting.

**Challenges and Considerations**

- **Security:** Ensuring the security of **Nutrient** transactions to prevent fraud or misuse.
- **Accessibility:** Making the system accessible to all **Trees**, regardless of technological capabilities.
- **Regulation:** Establishing clear guidelines and regulations to manage the flow and use of **Nutrients** effectively.

## Conclusion

**Nutrients** play a crucial role as the currency of **Turtle**, embodying the values of sustainability, collaboration, and shared prosperity. By facilitating **Inter-Tree** exchanges and supporting projects that benefit the wider community, **Nutrients** strengthen the **Turtle** ecosystem and promote a cooperative economy. Implementing **Nutrients** thoughtfully ensures that the **Turtle** network continues to thrive, fostering unity and contributing positively to the environment and society.

# **Turtle** Gauge and **Roots**

**Introduction**

In the **Trust** system, the **Turtle Gauge** and **Roots** play pivotal roles in determining economic interactions and resource management within the ecosystem. The Turtle Gauge serves as a visual and quantitative representation of a Tree's alignment with Turtle's values, directly influencing the conversion rate between the Tree's currency (**Berries**) and Turtle's universal currency (**Nutrients**). Meanwhile, Roots are responsible for extracting and supplying raw materials to meet internal Needs and support local projects, with surplus contributions to Turtle further impacting the exchange rate through a time-decayed mechanism.

This section integrates the concepts of the Turtle Gauge and Roots into a cohesive framework, detailing how they collectively influence the Nutrients exchange rate. By connecting the formulas and explaining their interplay, we provide a comprehensive

understanding of how Trees can optimize their practices to achieve favorable exchange rates, promoting sustainability, collaboration, and continuous contribution within the Trust ecosystem.

## The Turtle Gauge

**Purpose and Implementation**
To strengthen integration and promote practices aligned with Turtle's values, the Turtle Gauge is implemented as a visual and quantitative tool reflecting the level of favorability that Turtle assigns to each Tree's projects. Positioned between the Development and Production phases of Tree projects, the gauge ranges from green (high favorability) to red (low favorability), directly influencing the conversion rate of the Tree's Berries to Nutrients. This incentivizes Trees to develop sustainable and collaborative projects, as a lower gauge position results in requiring more Berries to obtain the same amount of Nutrients for Desires.

**Calculating the Turtle Gauge Score (T)**
To quantify the position on the visual gauge and determine the conversion rate from Berries to Nutrients, a formula calculates a percentage ranging from 0 to 1. This percentage is obtained by summing the scores of key factors, each multiplied by its respective weight:

1. **Environmental Sustainability (ES)**
2. **Innovation and Efficiency (IE)**
3. **Social Contribution (SC)**
4. **Inter-Tree Collaboration (IC)**

Each factor is scored on a scale from 0 to 1, where 1 represents maximum performance and 0 the minimum. The formula to calculate the Turtle Gauge score (T) is:
$T = (wES \times ES)+(wIE \times IE)+(wSC \times SC)+(wIC \times IC)$

Where:

- **T**: Turtle Gauge score (between 0 and 1).
- **ES**, **IE**, **SC**, **IC**: Scores of each factor.
- **w_{ES}**, **w_{IE}**, **w_{SC}**, **w_{IC}**: Weights assigned to each factor, summing to 1.

**Description of the Factors and Weights**

- **Assignment of Scores**:
  - **Environmental Sustainability (ES)**: Evaluated based on the project's ecological impact.
  - **Innovation and Efficiency (IE)**: Measures the degree of novelty and efficiency of the proposed solution.
  - **Social Contribution (SC)**: Assesses the direct benefit to the community and social well-being.
  - **Inter-Tree Collaboration (IC)**: Reflects the level of cooperation with other Trees.
- **Weights (w)**:
  - The weights determine the importance of each factor in the total calculation.
  - The sum of all weights must equal 1: $wES+wIE+wSC+wIC = 1$

**Example Calculation**

Suppose the following scores and assigned weights:

- **Scores**:
  - ES=0.9
  - IE=0.7
  - SC=0.8
  - IC=0.4
- **Weights**:
  - wES=0.4
  - wIE=0.3
  - wSC=0.2
  - wIC=0.1

Verify that the sum of the weights is:
$0.4+0.3+0.2+0.1 = 1.0$

Applying the formula:
$T = (0.4\times0.9)+(0.3\times0.7)+(0.2\times0.8)+(0.1\times0.4) = 0.36+0.21+0.16+0.04 = 0.77$

**Interpretation**:

- The Turtle Gauge score (T) is 0.77, indicating high favorability.

**Roots and Nutrients Exchange Rate with Time Decay**
**Exchange Rate Factors**
The exchange rate E between Berries and Nutrients for a Tree is influenced by:

1. **Turtle Gauge Score (T)**: Reflects the Tree's sustainability practices and alignment with Turtle's environmental goals, as calculated above.
2. **Decayed Contributed Raw Material (Cdecayed)**: The amount of raw materials the Tree has contributed to Turtle, adjusted for time decay.
3. **Material Demand Factor (D)**: Represents the current level of need for the contributed material by projects across all Trees.
4. **Decay Rate (λ)**: The rate at which the influence of past contributions diminishes over time, voted on by all Trees every five years alongside the Turtle Gauge priorities.

## Exchange Rate Formula with Time Decay

The exchange rate EEE is calculated using:
$E = E0\times(1+\alpha T+\beta(Cdecayed\times D))$

Where:

- E0: Base exchange rate.
- α and β: Weighting coefficients determining the influence of T and Cdecayed.
- T: Turtle Gauge score (from the previous calculation, normalized between 0 and 1).
- Cdecayed: Decayed value of contributed raw materials.
- D: Normalized demand factor for the material (between 0 and 1).
- λ: Decay rate (a positive constant per month).

**Calculating Decayed Contribution (Cdecayed)**
The decayed contribution accounts for the diminishing influence of past contributions over time, measured in months:

$$C_{\text{decayed}} = \sum_{i=0}^{n} C_i \times e^{-\lambda t_i}$$

Where:

- Ci: Amount of material contributed tit_iti months ago.
- e−λti: Exponential decay function.
- n: Number of past contributions considered.

**Components Explained**

1. **Turtle Gauge Score (T)**:
    - Derived from the project's evaluation based on the four key factors.
    - Encourages Trees to maintain and improve sustainable practices.
2. **Decayed Contributed Raw Material (Cdecayed)**:
    - Reflects that the influence of contributions decreases over time, promoting ongoing support to Turtle.
    - Normalized relative to the maximum possible decayed contribution among all Trees for fair comparison.
3. **Material Demand Factor (D)**:
    - Indicates the current global demand for the material.
    - Ensures that contributions of high-need materials have a greater impact.
4. **Decay Rate (λ)**:
    - Determined democratically by all Trees every five years.
    - A higher λ means contributions lose influence faster over months, emphasizing recent contributions.

**Weighting Coefficients (α and β)**

- α\alphaα: Weight assigned to the Turtle Gauge score.
- β\betaβ: Weight assigned to the decayed contributed raw material multiplied by the demand factor.
- Typically, α+β=1, but this can be adjusted based on policy decisions.

## Example Calculation

Assume:

- **Decay Rate**: λ=0.0083 per month.
- **Time Period**: Measured in months.

**Tree Alpha** has made the following contributions to Turtle:

- Month 0 (current month): C0=60 units.
- Month 1: C1=50 units.
- Month 2: C2=40 units.
- Month 3: C3=30 units.
- Month 4: C4=20 units.
- Month 5: C5=10 units.

Calculating $C_{\text{decayed}}$:

$$\begin{aligned} C_{\text{decayed}} &= C_0 \times e^{-\lambda t_0} + C_1 \times e^{-\lambda t_1} + C_2 \times e^{-\lambda t_2} + C_3 \times e^{-\lambda t_3} + C_4 \times e^{-\lambda t_4} + C_5 \times e^{-\lambda t_5} \\ &= 60 \times e^{-0.0083 \times 0} + 50 \times e^{-0.0083 \times 1} + 40 \times e^{-0.0083 \times 2} + 30 \times e^{-0.0083 \times 3} + 20 \times e^{-0.0083 \times 4} + 10 \times e^{-0.0083 \times 5} \\ &\approx 60 + 49.58 + 39.34 + 29.26 + 19.34 + 9.59 \\ &\approx 207.11 \end{aligned}$$

Assuming the maximum possible $C_{\text{decayed}}$ among all Trees is 250 units:

$$C_{\text{normalized}} = \frac{C_{\text{decayed}}}{250} = \frac{207.11}{250} = 0.8284$$

Given:

- **Turtle Gauge Score**: T=0.77 (from the earlier calculation).
- **Demand Factor**: D=0.8
- **Weighting Coefficients**: α=0.5, β=0.5
- **Base Exchange Rate**: E0=1

Calculating E:
E = 1×(1+0.5×0.77+0.5×(0.8284×0.8))
= 1×(1+0.385+0.3314)
= 1×1.7164
= 1.7164

**Result**:

- **Tree Alpha** receives an exchange rate of approximately **1.7164**, reflecting its favorable Turtle Gauge score and recent contributions adjusted for time decay.

## Impact on the Conversion from Berries to Nutrients

- **Determining the Conversion Rate**:
  - The calculated exchange rate E defines the position on the visual gauge and the exchange rate from Berries to Nutrients.
  - **High Favorability (Green)**:
    - High exchange rate: Trees obtain more Nutrients for their Berries.
    - **Benefits**: Incentivizes projects that meet Turtle's high standards and consistent contributions.
  - **Low Favorability (Red)**:
    - Reduced exchange rate: Fewer Nutrients for the exchanged Berries.
    - **Consequences**: Discourages practices not aligned with ecosystem values.
- **Use of Nutrients**:
  - **Inter-Tree Voting**: Nutrients are used to participate in decisions that affect the entire ecosystem.
  - **Investment in Projects**: Possibility to invest in joint initiatives or access

shared resources.
    - **Nutrient Cycle**: By being spent in votes, Nutrients disappear, promoting continuous contribution.

## Governance and Voting Processes

**Tree-Level Voting on Contributions**

- **Decision Factors**:
    - **Internal Needs**: Ensuring local projects are fully supported before contributing surplus materials.
    - **Surplus Evaluation**: Determining the amount of excess resources available for contribution.
    - **Community Benefits**: Considering how contributions to Turtle can enhance the Tree's exchange rate and support global initiatives.
- **Process**:
    - **Transparent Voting**: All Tree members participate, fostering inclusivity and accountability.
    - **Regular Assessments**: Contributions are re-evaluated periodically to adapt to changing internal and external needs

**System-Wide Voting on Decay Rate (λ) and Turtle Gauge Priorities**

- **Five-Year Cycle**:
    - Coincides with the voting on Turtle Gauge priorities, ensuring alignment of sustainability goals and economic policies.
- **Collective Decision-Making**:
    - **Participation**: All Trees vote, reflecting the collective will of the ecosystem.
    - **Considerations**:
        - **Economic Strategy**: Balancing incentives for ongoing contributions versus recognizing past efforts.
        - **Resource Management**: Adapting to shifts in global resource availability and project demands.

## Benefits of the Integrated System

1. **Promotion of Sustainable Practices**:
    - Incentivizes Trees to develop environmentally and socially responsible projects.
    - Aligns individual objectives with Turtle's global vision.
2. **Transparency and Accountability**:
    - The Turtle Gauge offers a clear and objective project evaluation.
    - Trees receive concrete feedback for improvement.
3. **Encouraging Consistent Contributions**:
    - Time decay motivates Trees to make regular contributions to maintain favorable exchange rates.
    - Reflects the current level of support a Tree is providing to Turtle.
4. **Collaboration and Positive Competition**:

    - Promotes cooperation among Trees to achieve higher favorability levels.
    - Fosters healthy competition based on excellence and positive impact.
5. **Adaptive and Fair Economic Environment**:
    - Allows the system to reflect current priorities and demands through regular voting.
    - Enhances the system's ability to adapt to rapid changes in resource Needs and project demands across the ecosystem.

**Considerations for Implementation**

- **Calibration of Weights and Decay Rate**:
    - Ensure that the weights (www, α\alphaα, β\betaβ) and decay rate (λ\lambdaλ) reflect current priorities and are agreed upon by the community.
- **Transparent Evaluation Process**:
    - Turtle's reports and evaluations should be public to maintain trust and transparency.
    - Allow spaces for dialogue and appeal if Trees deem it necessary.
- **Equity in Participation**:
    - Ensure that all Trees, regardless of size, have equitable opportunities.
    - Implement mechanisms to prevent disproportionate influences in decisions.
- **Continuous Update and Improvement**:
    - Periodically review criteria, weights, and the functioning of the gauge and exchange rate formulas.
    - Adapt to changes in global and technological priorities.

## Conclusion

Integrating the Turtle Gauge and Roots into a unified framework for calculating the exchange rate between Berries and Nutrients provides an effective strategy to align Trees' efforts with Turtle's values and objectives. By combining project evaluations with contributions adjusted for time decay, the system promotes sustainable practices, consistent contributions, and collaboration across the ecosystem. This quantitative and transparent approach not only incentivizes positive behaviors but also strengthens the Trust system as a whole, ensuring a harmonious, dynamic, and responsible development that benefits all participants.

# Research on Cryptocurrency Models for **Berries**, **Nutrients**, and the Voting System.

**Introduction**

As part of the evolution of the **Trust** system, we are exploring options to digitize **Berries**, **Nutrients**, and the **voting system** using cryptocurrency models that do not require providing direct monetary rewards to validators. The goal is to design an efficient and

secure system that allows for the validation of transactions and votes without financial incentives, aligning with **Trust's** values of sustainability and collaboration.

**Cryptocurrencies Without Direct Monetary Rewards**

There are cryptocurrencies that validate transactions without offering direct rewards to validators. In these systems, the validation process is designed to be lightweight and efficient, eliminating the need for incentives such as mining rewards or transaction fees. Below are some examples:

**1. IOTA**

- **Mechanism:**
  - IOTA uses a unique data structure called the **Tangle**, which is a form of a **Directed Acyclic Graph (DAG)** instead of a traditional blockchain.
- **Validation Process:**
  - In IOTA, each new transaction must approve two previous transactions. This means that users contribute to the security and validation of the network simply by making transactions.
- **No Mining or Rewards:**
  - There are no miners or dedicated validators in IOTA. Since every user who transacts also helps validate the network, there is no need to offer additional rewards or fees.
- **Application in Trust:**
  - This model could be adapted so that each vote or transaction of **Berries** and **Nutrients** contributes to validating other transactions, eliminating the need for monetary rewards.

**2. Nano**

- **Mechanism:**
  - Nano operates on a **Block-Lattice** architecture, where each account has its own blockchain, and transactions are handled asynchronously.
- **Validation Process:**
  - Transactions are validated through a consensus mechanism called **Open Representative Voting (ORV)**. Account holders can designate a representative to vote on their behalf to confirm transactions.
- **No Fees or Rewards:**
  - Nano is designed for fast and fee-less transactions. Validators (representatives) do not receive monetary rewards for confirming transactions.
- **Application in Trust:**
  - The voting system could benefit from this structure, allowing decisions to be made efficiently and without associated costs.

**3. Hashgraph (Hedera Hashgraph)**

- **Mechanism:**
  - Utilizes a **gossip-about-gossip** protocol and virtual voting to achieve consensus without the need for mining.
- **Validation Process:**
  - Nodes share information about transactions with other nodes randomly, leading to rapid consensus.
- **Minimal or No Rewards:**
  - While some configurations might include rewards, the protocol itself does not require them for validation.
- **Application in Trust:**
  - Could be implemented to handle both currency transactions and votes, ensuring speed and security.

**4. Collaborative Proof of Stake (CPoS) Systems**

- **Mechanism:**
  - Some newer consensus mechanisms are designed to require minimal computational effort and operate efficiently without direct financial incentives.
- **Application in Trust:**
  - Would allow the community to participate in the validation of transactions and votes as part of their regular activities, without the need for monetary rewards.

**Why No Rewards**

- **Efficiency:**
  - Eliminating rewards reduces the complexity of the system and can lead to faster transaction and voting times.
- **Scalability:**
  - Without the need to distribute rewards, the network can handle more transactions and votes without bottlenecks associated with reward calculations.
- **Environmental Impact:**
  - Reducing the need for mining and heavy computational processes decreases energy consumption.
- **Alignment with Trust:**
  - Fosters a more sustainable and collaborative economy and governance system, in line with **Trust's** values.

**Considerations for Berries, Nutrients, and Voting System**

When researching these models for possible application to **Berries**, **Nutrients**, and the voting system, the following aspects should be considered:

**Security**

- **No Financial Incentives:**
  - The system's security must depend on the robustness of the consensus mechanism and not on monetary rewards.
- **Protection Against Attacks:**
  - Ensure that the system is resistant to attacks such as the 51% attack or Sybil attacks, through designs that make manipulation difficult without prohibitive costs.
- **Voting Integrity:**
  - Guarantee that votes are authentic and that the voting process is transparent and verifiable.

**Community Adoption**

- **Ease of Use:**
  - The system must be accessible and easy to use for all community members, regardless of their technological level.
- **Active Participation:**
  - Encourage users to participate in the validation of transactions and votes as part of their regular activities.
- **Education:**
  - Provide resources and training so that members understand and trust the system.

**Alignment with Tree's Values**

- **Sustainability:**
  - A system that minimizes energy consumption aligns with **Trust's** environmental values.
- **Collaboration:**
  - A mechanism where each transaction and vote contributes to the network's well-being promotes cooperation and shared responsibility.
- **Transparency and Fairness:**
  - Ensure that the voting system is fair and that all voices are heard equitably.

**Next Steps in Research**

- **Comparative Analysis:**
  - Compare in detail the mechanisms of IOTA, Nano, and other similar systems to evaluate their suitability for **Berries**, **Nutrients**, and the voting system.
- **Pilot Tests:**
  - Implement small pilot tests to experiment with these systems in a controlled environment.
- **Technological Adaptation:**
  - Consider adaptations or combinations of different mechanisms to meet **Trust's** specific needs.
- **Resource Evaluation:**

    - Determine the technological and human resources necessary to implement and maintain the system.
- **Community Consultations:**
    - Involve the community in the decision-making process, gathering opinions and concerns.

**Conclusion**

Exploring cryptocurrency models that validate transactions and votes without providing direct monetary rewards offers an opportunity to design an efficient, secure system for **Berries**, **Nutrients**, and voting that aligns with **Trust's** values. By continuing to research these options, we can develop a solution that facilitates sustainable and collaborative digital transactions and voting processes within the community.

## Dynamic Division of Physical and User Scales

The **Trust** system proposes a dynamic approach to dividing physical spaces and user groups, enhancing flexibility and adaptability. This dynamic division method allows the system to respond more precisely to community **Needs**, though it requires careful integration with existing administrative boundaries such as counties, cities, and neighborhoods.

**Advantages of Dynamic Division**

1. **Flexibility**:
    - **Adaptation to Needs**: Dynamic divisions adjust to changing needs and priorities within the community.
    - **Resource Allocation**: Resources are allocated efficiently based on real-time data and shifting demands.
2. **Precision**:
    - **Granularity**: Precise divisions allow for targeted interventions and specific solutions.
    - **Scalability**: The system scales up or down according to the project scope or population size.
3. **Inclusivity**:
    - **User-Centered**: Divisions based on user interactions and data reflect the lived experiences of people, ensuring their specific needs are addressed.
    - **Community Engagement**: Encourages active participation and continuous feedback from users.

**Challenges and Solutions**

1. **Clashing with Existing Boundaries**:
    - **Coordination**: Collaborate with local governments and administrative bodies to ensure dynamic divisions complement existing structures.

    - **Integration**: Develop a system that overlays dynamic divisions on traditional boundaries, allowing for hybrid approaches.
2. **Complexity**:
    - **User Understanding**: Ensure users can easily understand and navigate dynamic divisions.
    - **System Management**: Implement robust algorithms and data management practices to handle the complexity of dynamic divisions.
3. **Consistency and Fairness**:
    - **Equitable Distribution**: Ensure dynamic divisions do not lead to unequal **Distribution** of resources or services.
    - **Transparency**: Maintain transparency in creating and adjusting divisions to build trust and avoid perceptions of bias.

**Implementation Strategy**

1. **Hybrid Model**:
    - **Baseline Boundaries**: Use existing administrative boundaries as a baseline.
    - **Dynamic Layers**: Add dynamic layers that adjust based on data inputs like population density, needs assessments, and resource availability.
    - **Overlay System**: Allow users to view both traditional boundaries and dynamic divisions to understand their interaction.
2. **Data-Driven Decision Making**:
    - **Real-Time Data**: Utilize real-time data collection and analysis to inform dynamic divisions.
    - **AI and Big Data**: Leverage artificial intelligence and big data analytics to continuously refine and optimize divisions.
3. **User Involvement**:
    - **Participatory Design**: Engage users in the design and adjustment of dynamic divisions through surveys, forums, and feedback mechanisms.
    - **Transparency Tools**: Provide tools and platforms for users to see how decisions are made and contribute their insights.
4. **Pilot Programs**:
    - **Small-Scale Pilots**: Start with pilot programs in select areas to test and refine the dynamic division approach.
    - **Iterative Improvement**: Use feedback from pilot programs to make iterative improvements before broader implementation.

**Example Scenario**

1. **Urban Area**:
    - **Existing Boundaries**: Use city districts and neighborhoods as the initial framework.
    - **Dynamic Divisions**: Create dynamic divisions based on real-time data like traffic flow, public service usage, and environmental conditions.
    - **User Interaction**: Residents can view and provide input on dynamic divisions through a mobile app, contributing to real-time adjustments.
2. **Rural Area**:

- **Existing Boundaries**: Use counties and townships as the baseline.
- **Dynamic Divisions**: Adjust divisions based on agricultural needs, resource **Distribution**, and population changes.
- **User Interaction**: Farmers and residents use a web platform to report **Needs** and view changes in resource allocation.

Dynamic division of physical and user scales is integral to the **Trust** system's flexibility and responsiveness. By addressing the challenges and leveraging modern technologies and participatory approaches, the **Trust** system aims to better serve the community while respecting existing administrative structures. This dynamic division approach ensures that the **Trust** system can adapt to changing circumstances and priorities, promoting a more equitable and responsive economic system.

# Phases

Anyone can join the **Needs**/**Desires** as affected. **Ideas** are voted on, gaining visibility and can be connected to different **Needs**/**Desires**. These **Ideas** are tested, evaluated, and their viability is assessed in the **Investigations** phase. One or more **Investigations** are then taken to **Development**, where an organizational scheme and a plan for each subsequent phase are created, along with an ecological and human evaluation. In the **Production** phase, what has been learned is adapted and scaled for the required sector or number of users. **Distribution** is responsible for delivering or supplying the community and/or sector as needed. In the **Maintenance** phase, support and upkeep are provided for both **People** and products. Finally, in the **Recycling** phase, parts and materials are recovered and reused.

## General Branch Sequence

1. **Needs/Desires**: **People** or other **Branches** identify **Needs** or **Desires**.
2. **Idea**: These **Needs** or wants generate **Ideas**.
3. **Investigation**: The **Ideas** are explored through **Investigations**.
4. **Development**: Research results are refined and optimized in the **Development** phase.
5. **Production**: **Developments** are adapted and scaled during **Production**.
6. **Distribution**: The products of **Production** are distributed to the final **People**.
7. **Maintenance**: **People** and products are maintained and supported.
8. **Recycling**: Products are repurposed, or materials are recovered in the **Recycling** phase.

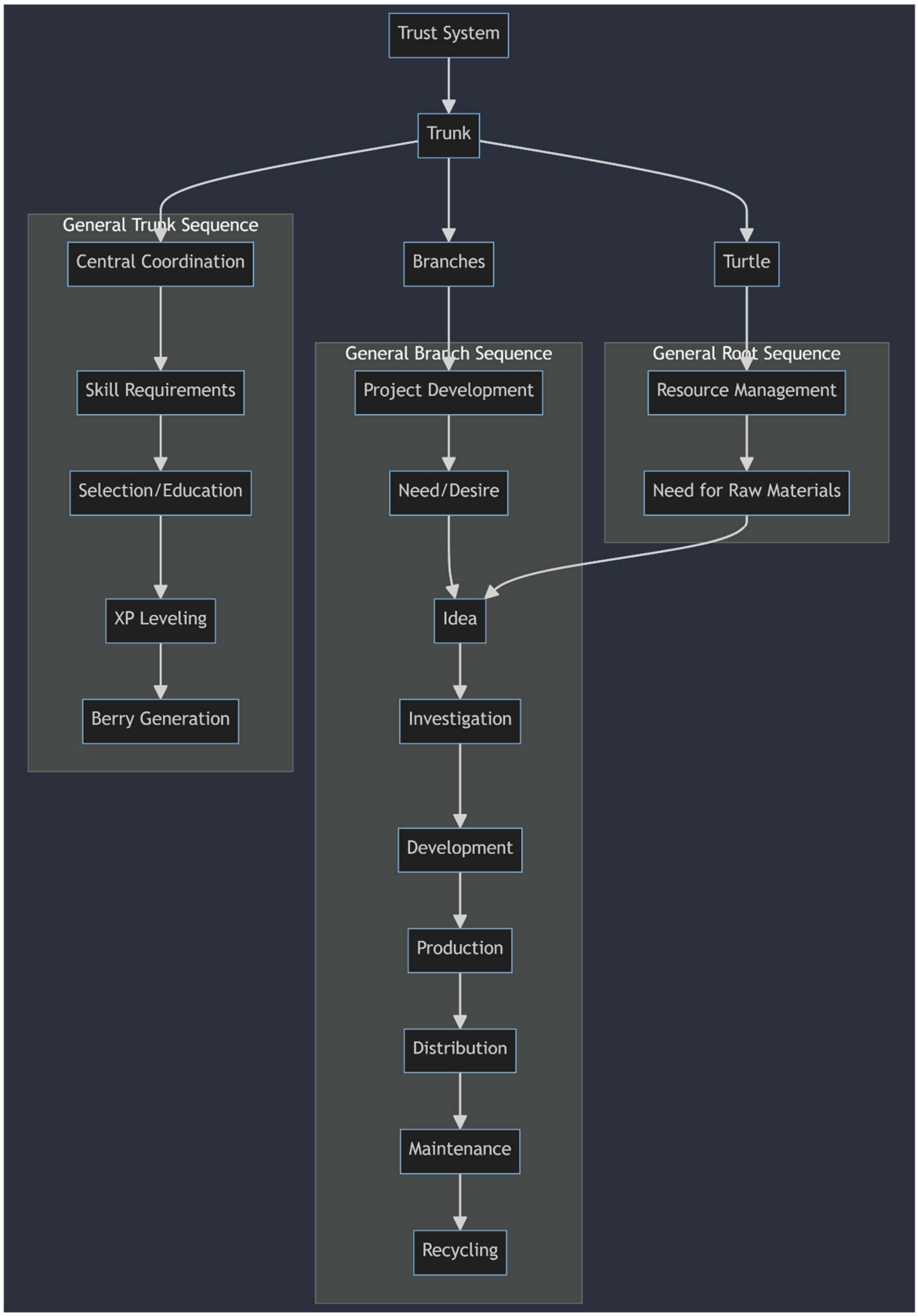
## General Root Sequence

1. **Raw Material Needs**: **Branches** identify a **Need** for raw materials.
2. **Idea**: **Needs** generate **Ideas** for exploitation.
3. **Investigation**: These **Ideas** are explored through **Investigations**.

4. **Development**: Research results are refined and optimized in the **Development** phase.
5. **Production**: **Developments** are adapted and scaled during **Production**.
6. **Distribution**: The products of **Production** are distributed to the different **Branches**.
7. **Maintenance**: **People** and products are maintained and supported.
8. **Recycling**: New methods of resource recovery and replanting are explored.

## General Trunk Sequence

1. **Skill Requirements**: The **Trust** system identifies the **Need** for **People** with certain abilities.
2. **Selection/Education**: **People** with these abilities are selected and/or educated.
3. **XP Earning**: **People** earn XP by working in **Branches** and/or **Roots** and **Level** up.
4. **Berry Earnings**: The **Level** determines the number of **Berries** that **People** earn.
5. **New Projects**: A new **Branch** or **Root** is created.
6. **Project Participation**: **People** can join the project from a **Branch** or **Root**.


Trust System
Trunk
General Trunk Sequence
Central Coordination
Skill Requirements
Selection/Education
XP Leveling
Berry Generation
Branches
General Branch Sequence
Project Development
Need/Desire
Idea
Investigation
Development
Production
Distribution
Maintenance
Recycling
Turtle
General Root Sequence
Resource Management
Need for Raw Materials

# Simulating a Complete Cycle

**Turtle** is a crucial component of the **Trust** system and of every step in this cycle, responsible for managing resource exploitation and allocation. It ensures that resources are used efficiently and sustainably across all projects. **Turtle's** roles include:

- **Resource Monitoring**: Provides real-time data on the availability and status of resources.
- **Prioritization**: Allocates resources based on project priority, which is determined by factors such as community **Needs**, expert evaluations, and resource scarcity.
- **Sustainability Enforcement**: Promotes sustainable practices by favoring projects that utilize resources responsibly.
- **Dynamic Adjustment**: Adjusts resource allocation in response to changes in resource availability or project priorities.

Below is a complete walkthrough of the **Idea Cycle** within a **Tree**, incorporating the additional details provided. We will use three water-related **Ideas** throughout the entire process:

1. **Installation of water purification systems**
2. **Construction of a new water pipeline**
3. **Implementation of rainwater collection systems**

This walkthrough details each step, including voting, **Branch** transformation, XP and **Berry** generation, resource allocation, and the use of the Satisfaction Index from the affected community.

**Need or Desire**

**1. Identification**

- A **Need** is raised: Lack of access to clean drinking water in a specific community.
- The **Need** appears in a **"General Feed"** visible to **People** in the affected geographic sector and those who follow relevant tags (e.g., #cleanwater, #communityhealth).

**2. Joining**

- Individuals can **join** the **Need** as **affected** or **interested**, assigning a percentage to indicate how much it affects their life or interests them.
    - Each **Person** has **100 points** to distribute among their **Needs**.
    - Points are released when the **Need** is satisfied or manually withdrawn.
    - These points determine the **percentage of interest** of the **Person**.
- **Example**:
    - A resident assigns **30 points** to this **Need**, indicating it significantly affects them.

**Idea**

### 3. Debate

- An open **debate** is created where **People** can comment and "give likes" on comments.
- Discussions revolve around potential solutions to the clean water **Need**.
- Comments with more likes get on top of the list of comments.

### 4. Solution Posting

- **People** post **Solution Ideas**, respond to several comments with their **Ideas**, and relate them to previous **Ideas**.
- The three main **Ideas** proposed are:
    1. **Installation of water purification systems**
    2. **Construction of a new water pipeline**
    3. **Implementation of rainwater collection systems**
- Voters are notified, and all **People** who have expressed the **Need** can vote on the **Ideas**.

### 5. XP Earning

- The proposers of the **top 7 most voted Ideas** earn part of the total XP.
    - The total **XP** is the sum of **Need** points of all the **People** subscribed to the **Necessity**.
- In this case, the proposers of the three main **Ideas** receive **XP** based on their **Idea's** popularity.

**Investigation**

### 6. Team Formation

- An alert is sent to qualified individuals to apply for the **5 research teams** tasked with demonstrating the viability of the **5 most voted Ideas**.
- A draw is held among applicants, forming teams based on criticality, balancing randomness and compatibility.
- Teams are assigned to investigate each of the three water **Ideas**.

### 7. Research

- **Teams develop and estimate the viability** of the **Ideas**:
    - **Installation of water purification systems**: Assess technology options, costs, **Maintenance Needs**.
    - **Construction of a new water pipeline**: Evaluate feasibility, infrastructure requirements, environmental impact.

    - **Implementation of rainwater collection systems**: Study rainfall patterns, storage solutions, community acceptance.
- They calculate ecological impact, identify challenges, and determine the necessary **Level** for the next phase, **Development**.
- If an **Idea** isn't viable, reasons and necessary changes are provided.

**8. Verification**

- For highly critical projects or those requiring significant investment, a **second team verifies** the study.
- Example: The **Construction of a new water pipeline** requires significant resources; a verification team reviews the initial **Investigation**.

**9. Voting**

- Interested parties are notified of the **Investigation** results.
- They vote on whether the **Investigation** is satisfactory.
    - If the vote exceeds a defined percentage, the team earns **XP**.
- All three water **Ideas** receive satisfactory votes, and teams earn **XP**.

**Development**

**10. Project Selection**

- Affected **People** are notified of study results.
- They vote on the projects that passed the previous phase.
- The **top 3 projects** are developed in parallel.
- In this case, all three water projects proceed to **Development**.

**11. Open Applications**

- The selected project opens applications for each required position according to system statistics.
- Positions include technicians, engineers, installers, and coordinators.

**12. Prototyping**

- Teams deliver a **functional prototype** with tests, operating statistics, and instructions for **Maintenance** and **Recycling**.
    - **Water purification systems** team builds a prototype unit.
    - **Water pipeline** team creates a model demonstrating the pipeline's functionality.
    - **Rainwater collection systems** team sets up a demo collection system.

**13. Resource Estimation**

- Teams estimate:
    - **Personnel Need**ed for **Production**, **Distribution**, **Maintenance**, and **Recycling** phases.
    - **Organizational charts** outlining team structures.
    - **Resources** required, including materials and equipment.

**14. Final Decision**

**Expert Review and Voting Preparation**

- **Identification of Experts**:
    - Experts in civil engineering, environmental science, and water resources are selected from the system's expert pool.
- **Expert Voting Phase**:
    - Experts evaluate the three **Ideas**, considering technical feasibility, environmental impact, and sustainability as informed in the previous phases.
    - **Expert Voting Results**:
        - **Installation of water purification systems**: 50% support.
        - **Construction of a new water pipeline**: 30% support.
        - **Implementation of rainwater collection**: 20% support.
- **Determination of Weighting Factors**:
    - The experts' support percentages become the **Weighting Factors** for the general vote.

The **best-evaluated Development** earn XP.

**General Voting**

- **Information Dissemination**:
    - All users receive detailed information about the **Need**, the three proposed **Ideas**, and the experts' opinions.
    - It is explained how the Weighting Factors will influence the voting outcome.
- **Voting Process**:
    - Users cast their votes for the **Idea** they support.
    - **General Voting Results**:
        - **Installation of water purification systems**: 40% of the votes.
        - **Construction of a new water pipeline**: 35% of the votes.
        - **Implementation of rainwater collection**: 25% of the votes.
- **Calculation of Weighted Votes**:
    - **Applying Weighting Factors**:
        - **Installation of water purification systems**:
            - Weighted Vote = 40% × 0.5 = 20%
        - **Construction of a new water pipeline**:
            - Weighted Vote = 35% × 0.3 = 10.5%
        - **Implementation of rainwater collection**:
            - Weighted Vote = 25% × 0.2 = 5%
    - **Total Weighted Votes**:

        - 20% + 10.5% + 5% = 35.5%
    - **Scaling to 100%**:
        - **Installation of water purification systems**:
            - (20% / 35.5%) × 100% ≈ 56.34%
        - **Construction of a new water pipeline**:
            - (10.5% / 35.5%) × 100% ≈ 29.58%
        - **Implementation of rainwater collection**:
            - (5% / 35.5%) × 100% ≈ 14.08%
- **Result**:
    - **Installation of water purification systems** is selected for implementation, receiving the highest percentage after scaling.

The **best-evaluated Development** earn XP.

- The **best-evaluated project** proceeds to **Production**.

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**Production**

**15. Open Applications**

- The selected project opens applications for each required position, as defined in the **Development** phase.
- Positions include technicians, engineers, installers, and coordinators.

**16. Infrastructure**

- Necessary infrastructure and means of **Production** is built or assigned though **Turtle**:
    - Workshops for assembling purification units.
    - Storage facilities for the assigned materials and finished products.

**17. Production Methods**

- Methods developed in the **Development** stage are applied:
    - Mass **Production** techniques for water purification units.

**18. Plan Changes**

- If objectives or timelines aren't met, changes in plans or new deadlines are open to voting by stakeholders.
- An external team may report on whether to:
    - Revert to a previous phase.
    - Terminate the project.
    - Activate the next project on the list (e.g., **Implementation of rainwater collection systems**).

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**Distribution**

**19. Team Formation**

- Applications for positions in the **Distribution** phase are opened.
- Teams are formed based on definitions from **Development**.

**20. Distribution System**

- Established according to **Development** phase definitions:
    - For water purification systems, **Distribution** may involve installing units in homes or community centers.

**21. Operating Times**

- The **Distribution** phase maintains the operating time windows set in **Development**.

**22. Evaluation**

- Upon receiving the product or service, **People** evaluate it and its **Distribution**.
- Teams involved in **Production** and **Distribution** earn XP based on satisfaction ratings.
    - High satisfaction with the water purification systems results in XP rewards.

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**Maintenance**

**23. Team Formation**

- Applications for **Maintenance** positions are opened.
- Teams are formed as defined in **Development**.

**24. Maintenance System**

- Established for product upkeep and user support:
    - Scheduled **Maintenance** services.
    - Customer support channels for reporting issues.

**25. Operating Times**

- Maintains the operating time windows set in **Development**.

**26. Evaluation**

- Clients evaluate their experience after receiving support or **Maintenance**.
- The **Maintenance** team earns XP for positive evaluations.

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**Recycling**

**27. Team Formation**

- Applications for **Recycling** positions are opened.
- Teams are formed as defined in **Development**.

**28. Recycling System**

- Established for reuse and **Recycling**:
    - Processes for collecting and **Recycling** old purification units.

**29. Operating Times**

- Maintains the operating time windows set in **Development**.

**30. Contamination Report**

- A final product contamination report is created:
    - Assessing environmental impact and safety of recycled materials.

**31. XP Earning**

- XP is earned based on the amount of raw materials recovered compared to the estimates in **Development**.

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**Independent Investigation Phase**

- Researchers can propose **independent investigations** outside the standard project phases.
- **Participation**:
    - Researchers submit proposals for exploratory studies.
- **Funding**:
    - XP is not generated unless the research is cited in successful projects.
    - Participation helps maintain their XP **Level**.
- **Evaluation**:
    - Research results are periodically reviewed for citations and references in other projects.
- **Citation-Based Rewards**:

    - Researchers earn XP based on the significance of citations their **Investigations** receive.
- **Encouraging Innovation**:
    - Supports a broad range of research, fostering long-term benefits for the community.

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**Summary of Key Elements in the Cycle**

- **Points System Integration**:
    - Individuals allocate points to express the **Level** of impact or interest in a **Need**.
- **Enhanced Idea Phase**:
    - Open debates and voting on comments.
    - Top proposers earn XP based on community engagement.
- **Detailed Team Formation**:
    - Teams are formed for each phase based on criticality, skill **Level**s, and compatibility.
- **Parallel Project Development**:
    - Multiple **Ideas** proceed through phases simultaneously, increasing chances of success.
- **XP Earning at Multiple Stages**:
    - XP is earned by proposers, **Investigation** teams, **Development** teams, and during **Production**, **Distribution**, **Maintenance**, and **Recycling** based on evaluations and satisfaction ratings.
- **Plan Adjustments and Accountability**:
    - Mechanisms for plan changes and potential project termination if objectives aren't met.
- **Independent Research Encouraged**:
    - Separate phase for exploratory **Investigations**, promoting innovation.
- **Consistent Use of Water Examples**:
    - The three water-related **Ideas** are followed throughout the cycle, illustrating practical application.

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**Conclusion**

This improved **Step-by-Step Idea Cycle in Trust** incorporates the detailed mechanisms provided, offering a comprehensive view of how **Needs** are identified, **Ideas** are developed, and projects are implemented within a **Tree**. It emphasizes community participation, transparent processes, and continuous evaluation at each stage. By maintaining the three water-related examples throughout the cycle, it demonstrates the practical application of these mechanisms in addressing real-world **Needs**.

# Physical Analog **Trust** System

**Introduction**

To extend the accessibility of the **Trust** system to individuals without internet access, we introduce the **Physical Analog Trust System**. This adaptation allows community members to participate fully in the **Trust** ecosystem through tangible means. By thoughtfully adapting the core components and processes into physical forms and implementing innovative solutions, we maintain the essence of **Trust** while catering to the unique **Needs** of these communities. At this point this section is a work in progress.

**1. Core Components to Adapt**

To create a physical version, we'll **Need** to adapt the following core components of the **Trust** system:

- **Users:** Individuals participating in the system.
- **Needs and Ideas:** Community-identified **Necessities** and proposed solutions.
- **Branches and Phases:** Project **Development** stages.
- **Currencies: Berries** and **Nutrients** as tokens of value and exchange.
- **Governance Mechanisms:** Decision-making processes, voting systems, and evaluations.

**2. Physical Representations**

**a. User Profiles**

- **Physical Ledger:**
  - Maintain a physical ledger or notebook where user profiles are recorded.
  - Include contributions, experience points (**XP**), **Level**s, and holdings of **Berries** and **Nutrients**.
- **Membership Cards:**
  - Issue physical membership cards or tokens representing user identities and **Levels** within the **Tree**.
  - Cards can display the user's name, **Level**, and a unique identifier.

**b. Needs and Ideas**

- **Community Boards:**
  - Set up physical boards in communal spaces where **Needs** can be posted and **Ideas** proposed.
- **Needs Board:**
  - A section where community members can write down pressing **Needs** on cards or papers.
- **Ideas Board:**
  - Adjacent to the **Needs**, a place where solutions or **Ideas** are proposed.

**c. Currencies**

- **Berries and Nutrients Tokens:**
  - Create physical tokens or paper bills representing **Berries** and **Nutrients**.
- **Design:**
  - **Year and Month Indication:**
    - The **year** is incorporated into the design of the **Berry** itself (e.g., printed on the paper bill).
    - The **month** of expiration is stamped onto the **Berry** using an intricate stamp that changes monthly.
  - **Validity Date:**
    - The date on the **Berry** indicates when it **loses its validity** and consists of only the **year and month**.
    - This system allows the community to **vote on the duration Berries** remain functional, providing flexibility in economic planning.
  - **Annual and Monthly Design Changes:**
    - **Paper Bills:**
      - The design of the paper bills changes every **year** to prevent the reuse of expired **Berries** and enhance security.
    - **Monthly Stamps:**
      - An intricate stamp, which changes every **month**, is used to indicate the month of expiration.
      - The stamp design includes complex patterns to prevent counterfeiting.
  - **Differentiation:**
    - Use different colors, sizes, or symbols to distinguish between **Berries** and **Nutrients**.
- **Security:**
  - **Counterfeit Prevention:**
    - Incorporate security features such as watermarks, special inks, or embossed elements in the paper bills.
    - Monthly stamps are kept secure and only accessible to authorized **Person**nel.
  - **Controlled Issuance:**
    - New **Berries** are issued annually, and expired ones are collected and removed from circulation.

**d. Branches and Phases**

- **Project Folders or Files:**
  - Use physical folders to represent different projects (**Branches**).
  - Contain all documents and records of progress through phases.
- **Phase Indicators:**
  - Attach labels or markers to project folders indicating the current phase (e.g., **Generation**, **Investigation**, **Development**, **Completion**).

**e. Visual Gauges and Evaluations**

- **Favorability Gauge:**
  - Create a physical gauge (e.g., a slider or dial) that visually represents the favorability rating from green to red for projects.
- **Evaluation Forms:**
  - Use standardized forms to assess projects based on predefined criteria.

**3. Processes and Interactions**

**a. Submitting and Voting on Needs and Ideas**

- **Submission Boxes:**
  - Place locked boxes where community members can submit **Needs** and **Ideas** anonymously if **Desired**.
- **Voting Mechanism:**
  - Implement a system using number stamps to allow participants to vote anonymously while allocating specific support levels to **Ideas**.

**b. Voting Mechanism for Idea Approval**

In the Physical Analog **Trust** System, the process of voting on **Ideas** utilizes a **number stamp system** to ensure anonymity and thoughtful allocation of support.

**Allocation of Voting Points**

- **Total Voting Points:**
  - Each participant has **100 voting points** to allocate towards **Ideas** and project phases.
- **Purpose of Voting Points:**
  - Voting points represent a participant's support and are used to back **Needs**, **Ideas**, and phase progressions they believe in.
  - The finite number encourages participants to prioritize initiatives they value most.

**Voting Process**

1. **Requesting a Number Stamp at the Voting Table:**
   - **Expression of Interest:**
     - When a **Need**, **Idea**, or phase progression is open for voting, participants decide how many of their 100 voting points they wish to allocate.
   - **Number Stamp Request:**
     - Participants approach the designated **Voting Table** and request a number stamp reflecting the amount they wish to allocate (from 1 to 100).
     - The stamp has an intricate design that changes **annually** to prevent forgery.

    - **Ledger Entry:**
        - The voting official records the participant's name, the item being voted on (**Need**, **Idea**, or phase progression), and the number of points allocated in the **Voting Ledger**.
        - This ensures that each participant's total allocated points do not exceed 100.
2. **Casting Votes Anonymously:**
    - **Voting Slip:**
        - Participants receive a voting slip or ballot paper.
    - **Applying the Number Stamp:**
        - They stamp the voting slip with the number stamp, indicating the amount of support they're allocating.
        - No personal identifiers are on the slip, preserving anonymity.
    - **Submitting the Vote:**
        - Participants place their stamped voting slip into a sealed ballot box designated for the specific voting item.

**Security Measures**

- **Intricate Stamp Design:**
    - The number stamps feature complex designs to prevent easy duplication.
    - Designs are updated **annually** to maintain security.
- **Controlled Access:**
    - Number stamps are kept secure and only accessible through the voting officials during the voting period.

**Voting Points Management and Liberation**

- **Locked Voting Points:**
    - Once allocated to a **Need**, **Idea**, or phase progression, the voting points are considered **locked** until the item reaches its conclusion (e.g., **Idea** finalized, phase completed).
    - Participants cannot reallocate these points to other items during this period.
- **Liberation of Voting Points:**
    - Upon conclusion, the allocated points are **liberated**.
    - The Voting Ledger is updated, and participants regain those points for future voting.

**c. Earning and Spending Currencies**

- **Earning Berries:**
    - Define physical activities or contributions that earn users **Berries**.
        - Examples include attending meetings, contributing materials, or volunteering.
- **Spending Berries:**
    - Users can spend **Berries** to support projects, acquire goods, or participate in special events.

- **Validity of Berries:**
  - **Expiration Date:**
    - The date on the **Berry** indicates when it **loses its validity**, consisting of the **year and month**.
    - The community can **vote on the duration** that **Berries** remain functional, adjusting economic dynamics as needed.
  - **Design Elements:**
    - **Annual Paper Bills:**
      - Each year, new paper bills are issued with updated designs incorporating the **year**.
    - **Monthly Stamps:**
      - Each month, an intricate stamp is used to mark the **Berries** with the **expiration month**.
      - The stamp design changes monthly, enhancing security.
  - **Expired Berries:**
    - **Berries** past their expiration date are no longer valid and should be removed from circulation.
    - Collection drives or exchange programs can help retrieve expired **Berries**.
- **Ledger Updates:**
  - All transactions are recorded in the Physical Ledger for transparency.

**d. Progressing Through Phases**

In the Physical Analog Trust System, advancing a project through its phases involves community participation using the same **voting points** and **number stamp** system used for voting on **Needs** and **Ideas**.

**Allocation of Voting Points**

- **Unified Voting Points:**
  - Participants use the same pool of **100 voting points** allocated for **Needs**, **Ideas**, and phase progressions.
  - This unified system encourages participants to carefully consider how they distribute their support across various initiatives.

**Process for Phase Progression**

1. **Milestone Meetings:**
   - **Project Team Presentation:**
     - Project teams report on their progress and present their case for advancing to the next phase.
   - **Information Sharing:**
     - Teams provide updates, challenges faced, and how they align with the **Tree's** values and goals.
2. **Voting on Phase Advancement:**
   - **Expression of Support:**

        - Participants decide how many of their available voting points they wish to allocate to the project's phase progression.
    - **Number Stamp Request:**
        - They approach the **Voting Table** and request a number stamp indicating the amount they wish to allocate.
        - The voting official ensures that the participant has sufficient unallocated voting points.
    - **Ledger Entry:**
        - The participant's name, the project phase being voted on, and the number of points allocated are recorded in the **Voting Ledger**.
    - **Casting the Vote Anonymously:**
        - Participants use the number stamp on a voting slip and place it in a sealed ballot box designated for the project.
3. **Tallying Votes and Decision Making:**
    - **Counting Votes:**
        - After the voting period, officials tally the total voting points allocated to the project.
    - **Threshold for Advancement:**
        - A predefined threshold of voting points required for phase advancement is established by the **Tree**.
    - **Announcement:**
        - The results are announced to the community, indicating whether the project advances to the next phase.

**Management of Voting Points**

- **Locked Voting Points:**
    - Points allocated to phase progression are **locked** until the phase is completed.
- **Liberation of Voting Points:**
    - Upon phase completion or if the project is halted, the points are **liberated** and recorded in the Voting Ledger.
- **Strategic Allocation:**
    - Participants must strategically decide how to allocate their limited voting points among **Needs**, **Ideas**, and phase progressions.

**e. Evaluations and Favorability Ratings**

- **Evaluation Committees:**
    - Form committees to assess projects using predefined criteria.
    - Assign scores for each factor (e.g., sustainability, innovation, social contribution).
- **Updating the Gauge:**
    - Physically adjust the favorability gauge based on evaluation outcomes.
    - The gauge influences aspects like the conversion rate of **Berries** to **Nutrients**.

### 4. Governance and Decision-Making

#### a. Regular Assemblies

- **Community Gatherings:**
  - Schedule regular meetings where users discuss policies, vote on important matters, and set thresholds for favorability.
- **Facilitators:**
  - Appoint facilitators to guide discussions and ensure everyone's voice is heard.

#### b. Voting Mechanisms

- **Voting on Berry Validity Periods:**
  - The community can **vote on the duration Berries** remain valid, adjusting the economic flow as needed.
  - Decisions are implemented by adjusting the expiration dates on new **Berries** issued.
- **Secret Ballots:**
  - Use paper ballots for confidential voting on sensitive issues, utilizing the number stamp system for allocating support.
- **Show of Hands or Tokens:**
  - For less sensitive matters, voting can be done openly.
- **Voting Ledger:**
  - Maintain records of votes and decisions in a ledger accessible to all members.

#### c. Recording Decisions

- **Minutes and Ledgers:**
  - Keep detailed minutes of meetings and decisions in physical ledgers.
  - Documentation ensures transparency and accountability.

### 5. Collaboration Between Trees

If multiple physical **Trees** exist within reachable distance:

- **Inter-Tree Meetings:**
  - Organize periodic gatherings to share **Ideas**, collaborate on projects, and exchange resources.
- **Nutrients Exchange:**
  - Use physical **Nutrient** tokens to facilitate exchanges and collective decision-making between **Trees**.
- **Joint Projects:**
  - Collaborate on projects that benefit multiple communities, leveraging combined resources and expertise.

## 6. Challenges and Solutions

### a. Record-Keeping

- **Challenge:**
  - Maintaining accurate and up-to-date records manually.
- **Solution:**
  - Assign dedicated record keepers or rotate the responsibility among trusted members.
  - Use durable materials and backups (e.g., duplicate ledgers).

### b. Security and Trustworthiness

- **Challenge:**
  - Preventing fraud or misrepresentation of tokens and records.
- **Solution:**
  - Implement security features on tokens and stamps.
  - Change stamp and token designs **annually** and **monthly**.
  - Require multiple signatories for important transactions.
  - Foster a culture of honesty through community building.

### c. Accessibility and Participation

- **Challenge:**
  - Ensuring all community members can participate, including those who are illiterate or have disabilities.
- **Solution:**
  - Use symbols and colors for those who cannot read.
  - Provide assistance through volunteers.
  - Make meetings and voting processes accessible to all.

### d. Scalability

- **Challenge:**
  - Managing the system as the number of participants grows.
- **Solution:**
  - Create subgroups or committees to handle specific tasks.
  - Decentralize certain functions.
  - Establish clear procedures and protocols.

## 7. Educational Components

- **Workshops and Training:**
  - Provide sessions to educate members about the **Trust** system, participation methods, and the importance of each role.
- **Visual Aids:**

- Use posters, diagrams, and illustrations to explain processes and structures.

**8. Examples of Physical Tools**

- **Tokens/Currency:**
  - Crafted from wood, clay, or recycled materials, uniquely marked.
  - Include the **year** in the design and the **month** stamped on.
- **Number Stamps:**
  - Intricate designs, updated **annually** for voting points allocation.
- **Monthly Expiration Stamps:**
  - Used to stamp **Berries** with the expiration **month**; designs change monthly.
- **Boards and Charts:**
  - Large boards displaying project statuses, community goals, and upcoming events.
- **Suggestion Boxes:**
  - For anonymous input on **Needs**, **Ideas**, or feedback.
- **Voting Containers:**
  - Sealed ballot boxes for submitting stamped voting slips.

**9. Embracing Local Culture**

- **Cultural Integration:**
  - Incorporate local customs, languages, and traditions into the **Tree**.
  - Enhance acceptance and relevance by aligning with community values.
- **Community Leaders:**
  - Engage respected community figures to endorse and participate in the system.

**10. Sustainability and Environmental Considerations**

- **Materials:**
  - Use sustainable, locally sourced materials for physical components.
- **Recycling and Reuse:**
  - Encourage **Recycling** of tokens, stamps, and materials where possible.
  - Collect expired **Berries** and repurpose or recycle the materials.
- **Eco-Friendly Practices:**
  - Align the physical **Tree** with environmental values promoted by **Turtle**.

**Conclusion**

Creating a physical analog of the **Trust** system is a significant step toward inclusivity and empowerment of communities without internet access. By adapting the core components and processes into tangible forms and implementing innovative solutions like dated **Berries** with monthly expiration stamps and the unified number stamp voting mechanism, we maintain the essence of **Trust** while meeting the unique **Needs** of these communities. This approach ensures the validity of currencies, enhances security, and simplifies the voting process, reinforcing collaboration, transparency, and equitable involvement.

**Next Steps:**

1. **Pilot Program:**
    - Start with a small group to test the physical system.
    - Gather feedback and make adjustments as needed.
2. **Community Engagement:**
    - Involve community members in designing and building the physical components to foster ownership.
3. **Documentation:**
    - Keep detailed records of processes and learnings to assist in scaling or replicating the system elsewhere.
4. **Partnerships:**
    - Collaborate with local organizations or NGOs that can support with resources or expertise.

Remember, the success of the physical **Trust** system relies heavily on clear communication, community involvement, and adaptability to local contexts. This initiative has the potential to empower individuals, promote collaboration, and address community **Needs** effectively, even in the absence of digital connectivity.

# Strengths and Weaknesses

## Strengths

1. **Transparency and Accountability**
    - **Strengths**: The system emphasizes transparency by making all transactions and decisions publicly accessible, reducing corruption and increasing trust among users.
    - **Examples**: Blockchain-based voting, public audit trails for votes and transactions. The entire process is open to the public, with all project documents available, and those involved in one phase have no connection to the next, preventing manipulation for personal gain.
2. **Decentralization and Democratization**
    - **Strengths**: Power is distributed among users rather than centralized in politicians, banks, or corporations. This promotes a more democratic and fair system where everyone has a voice.
    - **Examples**: Open-source nature, community-driven decision-making processes. The system does not require politicians, banks, or businessmen to create and maintain products for the common good, dissolving power concentration.
3. **Efficiency and Optimization**
    - **Strengths**: By using advanced technologies like AI, Machine Learning, and Big Data, the system can optimize resource allocation and improve operational efficiency.

    - **Examples**: Automated satisfaction index for jobs, dynamic team formation based on compatibility. It avoids unnecessary roles like bosses, managers, and bureaucrats, using specialized teams assembled for specific tasks with unlimited talent within and outside the company. Jobs and products are not kept waiting for problems or unnecessary work, using less energy per project, and reducing transportation and pollution by eliminating centralized offices.
4. **Adaptability and Scalability**
    - **Strengths**: The system is designed to be adaptable to different needs and scalable to accommodate growth. This allows it to evolve and expand without significant structural changes.
    - **Examples**: Recursive financing and development within the system, dynamic recalibration of roles and tasks.
5. **User Participation and Empowerment**
    - **Strengths**: Users are actively involved in decision-making and project **Development**, which increases engagement and personal investment in the system's success.
    - **Examples**: Voting on projects and **Ideas**, earning XP and **Berries** through participation.
6. **Innovation and Continuous Improvement**
    - **Strengths**: The open-source nature encourages innovation and continuous improvement. New ideas can be tested and implemented quickly, leading to a more robust system over time.
    - **Examples**: Open development strategies, incentives for proposing automation and improvements.
7. **Environmental and Social Responsibility**
    - **Strengths**: Projects can be designed to be sustainable and socially responsible, addressing environmental issues and societal needs directly.
    - **Examples**: Ecosystem restoration projects, new recycling methods, durable product designs. Products are designed to fully satisfy needs, be easy and cheap to maintain, and last rather than be thrown away. They can be modular and upgradeable, more ecological, and require fewer resources from society and the planet, with society acting as the investor and the profit being the improved quality of life generated by the projects.
8. **Support for Mental Health**
    - **Strengths**: The system includes mechanisms for detecting and addressing mental health issues, ensuring that users receive necessary support without penalizing their progress.
    - **Examples**: Monitoring for mental distress, offering free psychological support, freezing XP status during treatment.
9. **Community Building**
    - **Strengths**: The system fosters a sense of community with common projects, goals, and a shared sense of purpose.

## Weaknesses

1. **Complexity and User Education**
    - **Weaknesses**: The system is complex and requires significant user education and understanding, which can hinder widespread adoption.
    - **Examples**: Understanding blockchain technology, navigating the multi-phase project cycle.
    - **Mitigants:** A series of educational videos about the system and its functions can be created.
2. **Initial Adoption and Critical Mass**
    - **Weaknesses**: Achieving initial adoption and reaching a critical mass of users can be challenging, especially when competing with established systems.
    - **Examples**: Convincing users to adopt a new currency (**Berries**), ensuring enough participants for effective decision-making.
    - **Mitigants:** Make the video and initial message as viral as possible to quickly reach the critical mass.
3. **Resource Intensive**
    - **Weaknesses**: Implementing and maintaining the system can be resource-intensive, requiring significant technological and financial investments.
    - **Examples**: Costs of developing and maintaining the blockchain infrastructure, AI systems, and user interfaces.
    - **Mitigants:** Use the Proof of Stakes (PoS) modality to significantly reduce the computational cost of the Blockchain system, which would consume the most resources.
4. **Dependency on Technology**
    - **Weaknesses**: The system relies heavily on technology, which can be a disadvantage in areas with limited access to digital devices or reliable internet connections.
    - **Examples**: **Need** for secure digital devices, stable internet access for participation.
    - **Mitigants:** The system encourages the incorporation of new communities with great **Needs** due to being the ones that generate the most **XP**, which will encourage new solutions to the lack of connection and security of this communities.
5. **Security and Privacy Concerns**
    - **Weaknesses**: While blockchain provides security, there are still risks of breaches, and the need for biometric data for unique authentication raises privacy concerns.
    - **Examples**: Ensuring the security of biometric data, preventing unauthorized access and manipulation.
    - **Mitigants:** The early and solid incorporation of data security will be prioritized in the development of the system.
6. **Resistance to Change**
    - **Weaknesses**: People and institutions may resist changing from familiar traditional systems to a new and innovative system, creating barriers to implementation.
    - **Examples**: Overcoming skepticism from potential users, persuading traditional entities to adopt new practices.

    - **Mitigants:** It will be mitigated if the message is viral enough and some good educational videos are achieved.
7. **Governance and Conflict Resolution**
    - **Weaknesses**: Establishing effective governance structures and conflict resolution mechanisms can be challenging, especially in a decentralized system.
    - **Examples**: Ensuring fair and timely mediation of disputes, maintaining **Trust** in decentralized decision-making processes.
    - **Mitigants:** The work team conflict resolution system can be extrapolated to more areas.
8. **Currency Restrictions**
    - **Weaknesses**: Direct transfers of the currency (**Berries**) are not allowed to ensure transaction integrity within the system, limiting flexibility.
    - **Examples**: Exceptions are made within family groups or a limited list of friends, but overall flexibility in currency transactions is restricted.
    - **Mitigants:** The system will allow the limited exchange of **Berries** into common currencies.

### Conclusion

The **Trust** system presents a forward-thinking and innovative approach to addressing socio-economic challenges, emphasizing transparency, efficiency, and user participation. Its strengths lie in its potential for decentralization, adaptability, and continuous improvement, making it a promising alternative to traditional systems.

However, the system faces significant challenges in terms of complexity, scalability, and initial adoption. Addressing these weaknesses will be crucial for the successful implementation and long-term sustainability of the **Trust** system. By carefully managing these challenges and leveraging its strengths, the **Trust** system has the potential to create a more fair, transparent, and efficient socio-economic environment.

## Possible Projects

1. **Cleaning and Restoration of Ecosystems**:
    - Projects aimed at cleaning and recovering ecosystems damaged by pollution could be financed.
    - **Positive Points**:
        - Significant reduction in environmental pollution.
        - Restoration of biodiversity and natural habitats.
        - Improvement in air and water quality.
        - Enhanced ecological balance and sustainability.
2. **New Recycling Methods**:
    - With more funding, new recycling methods could be developed quickly, even if they are not profitable.
    - **Positive Points**:
        - Reduction in waste and landfill use.

        - Increased efficiency in resource utilization.
        - Innovation in recycling technologies.
        - Job creation in the recycling industry.
3. **Better Public Transportation**:
    - Comprehensive public transportation solutions could be developed, such as long-distance trains, metro systems for cities, buses to support metro systems, cars for less frequented areas, and bicycles for short distances.
    - **Positive Points**:
        - Reduced traffic congestion and pollution.
        - Improved accessibility and mobility for all citizens.
        - Lower transportation costs for individuals.
        - Decreased reliance on fossil fuels.
4. **Improved Public Health System**:
    - As one of the greatest **Needs**, a better public health system could be financed quickly through **Trust**.
    - **Positive Points**:
        - Enhanced access to healthcare for all.
        - Better disease prevention and management.
        - Reduced healthcare costs.
        - Improved public health outcomes and life expectancy.
5. **Standard Products**:
    - Non-disposable products designed to last and be repaired, with recycling instructions and a focus on each part being recyclable.
    - **Positive Points**:
        - Reduced waste and environmental impact.
        - Increased product lifespan and durability.
        - Cost savings for the entire system over time.
        - Promotion of sustainable consumption practices.
6. **Standard Software**:
    - Free software that becomes the standard for use in every home and industry.
    - **Positive Points**:
        - Increased access to technology and information.
        - Reduction in software costs for individuals and projects.
        - Enhanced cybersecurity and data privacy.
        - Promotion of digital literacy and skills.
7. **Renewable Energy Projects**:
    - Development and implementation of renewable energy sources such as solar, wind, and hydroelectric power.
    - **Positive Points**:
        - Reduction in greenhouse gas emissions.
        - Decreased reliance on non-renewable energy sources.
        - Job creation in the renewable energy sector.
        - Promotion of energy independence and sustainability.
8. **Affordable Housing Projects**:
    - Construction of affordable and sustainable housing for low-income families.
    - **Positive Points**:
        - Reduction in homelessness and housing insecurity.

        - Improved living conditions for disadvantaged populations.
        - Promotion of social equity and community development.
        - Increased economic stability and growth.
9. **Urban Green Spaces**:
    - Creation and **Maintenance** of parks, gardens, and green spaces in urban areas.
    - **Positive Points**:
        - Improvement in mental and physical health of residents.
        - Increased biodiversity and urban ecology.
        - Enhancement of community well-being and social cohesion.
        - Reduction in urban heat island effect and air pollution.

## Trace

**Trace** is a joint **Trust** system, created and funded through **Trust** as its first trial project.

The lack of opportunities and corruption in the current system not only affect workplaces and politics but begin with educational foundations for individuals. Those without a great amount of money, which is the majority, face daily struggles due to a lack of resources and poor attention in education.

What good is a fair system if its foundations are not fair?

**Trace** aims to democratize, personalize, and optimize education.

It is called **Trace** because it uses data from the educational and professional paths of previous **Trust** users to show the most common paths taken by experts in an area, the demand for these professionals, the success rate, and the average time for **Level** advancement.

**Trace** will grant badges based on both knowledge and practical tests every 3 months or/and personal achievements made in a **Branch** or **Root**, these badges will give a percentage increase in the **Person's XP** generation when participating in projects that need the tested knowledge.

**Trace** will also assess your educational development to identify latent innate talents dynamically. This will be achieved using Artificial Intelligence, which already identifies patterns in large datasets.

**Trust** will even predict future system **Needs** after a few years by analyzing geographical sectors and their trends. **Trace** will use this information to highlight the professions likely to be in demand throughout a future working life, allowing for dynamic calculations of difficulty, need, and the Base **Level** obtained by meeting educational requirements.

All of this is optional. **Trace** will show several resulting paths in a tree format, along with user-chosen paths, displaying success percentages and demand as estimated by **Trace**.

Training courses can be taught by any **Person** meeting the requirements. Instructors will earn **XP** for each student that succeeds its certification tests, creating a success rate as a tutor. They will also be evaluated by their students.

The enhanced decision-making capacity provided by Big Data and Artificial Intelligence will be available to individuals. This will estimate success probabilities, team compatibility, estimated times, and the advantages and disadvantages of different training paths, presented as an intuitive decision tree with various **Branches** and characteristics.

The gradual loss of **Levels** for inactivity, rather than an immediate drop, allows a **Person** to change professions or specialize while maintaining their **Level** temporarily. This reduces the economic burden of changing professions and increases system flexibility to meet evolving **Needs**. The reasons for this decline could be determined by voting or system statistics, but it will be transparent.

## Integration Between Systems

To manage interactions between various **Trust** systems enabled by Free Code, the system will compare its own code against the one intended for a transaction.

It will show whether it is the same system, a different but known one, or a new one. For known systems, it will provide an analysis including the percentage of difference, expert opinions, and justification for the differences, serving as a "cover letter" with the base code. For new or unknown systems, it will directly show code differences and create a **Need** for analysis, which can be done by qualified individuals, earning them **XP**.

Users will decide whether to proceed with transactions, with analysis priority increasing based on the percentage of differences and interaction **Levels**. Analysts can interrupt interactions if they find them hostile, stopping the analysis and opening a debate for voting. Interactions can be denied, accepted, or an analysis team can be formed to clarify security doubts.

I am unsure whether to make **Needs** internal to each system version, meaning they are only satisfied by the generating system, or independent, allowing the most suitable system to respond. This would require a separate system to manage **Needs**, possibly visualized on a **Needs** map linked to a geographical map, showing different system interactions and growth, and listing system differences to enable switching at the **Person Level**.

## Summary

- Transparent, modifiable, and flexible system, free to use and distribute, with agreed interaction between its different versions by its users.
- Socioeconomic Ladder with margins and subdivisions defined by all **People** or society.
- **People** with educational levels and success statistics in projects determining their Socioeconomic **Level**.

- Open and transparent projects for participation by a holistic system, addressing the **Needs** of all **People**.
- Free ideas open to debate, generating a salary for those who create and improve them.
- Decentralized education financing aimed at personal goals supported by data from previous users and probable future needs.
- Transparent and traceable currency, avoiding corruption and organized crime.
- Durable and ecological products designed to fully satisfy needs with minimal human, energy, and raw material expenditure.

## Closing Words

I do not believe this system is applicable to all possible societies, now or in the future. It would be incredibly arrogant to think that just because I do not see a flaw or essential problem, it doesn't have one. To mitigate this, it will be an open-source project. This means anyone can use it as a basis to create their own version or simply distribute it, with the only condition that their system must also be open source. Additionally, my system will be recursive. It will be financed and developed within itself, as one more **Branch**, applying all the previously shown steps, with specific teams for each step and using the system's **Berries**.

This version includes parameters I find ideal, but they are open to votes for gradual and measured changes. The entire system is open for major and/or immediate changes if necessary.

By making the system free in this way, I hope it can be quickly and easily replaced by a system better adapted to the reality of the moment and sector. Think of it like the cells of a body: each cell has the same base but specializes based on its environment and function. I hope my system acts as the totipotent base cell, evolving and specializing to interact with its clones and variations. People provide the energy for each cell, determining its size and quantity per sector on the interaction map. With this in mind, I designed Trace as a subsystem to quickly and intuitively show the advantages and disadvantages of each "cell," making it easier to decide where to contribute your information, time, and participation.

## Strategy

Here are the possible strategies to carry out this project, along with the modes of financing and implementation:

### 1. Self-Financed
### Chances of Success: Moderate to High

Create a development team and finance the project with rewards in the system's own currency (**Berries**) for those who work on it.

**Strengths:**

- **Control**: Full control over the development process without relying on external funding.
- **Commitment**: Participants who are rewarded with the system's own currency are likely to be highly committed to the project's success.
- **Autonomy**: Freedom to pivot or make changes quickly without needing to get approval from external stakeholders.

**Challenges:**

- **Initial Funding**: Requires an initial investment or sufficient resources to start the project.
- **Scalability**: May struggle to scale quickly if the initial team is small or lacks diverse expertise.
- **Market Acceptance**: Convincing early adopters to join and use a currency with no initial external value can be difficult.

**Mitigation Strategies:**

- Start with a small, dedicated team and scale up gradually.
- Focus on creating a strong, clear value proposition for early adopters.
- Develop a phased approach to increase the system’s visibility and user base over time.

## 2. Crowdfunded
## Chances of Success: High

Use a crowdfunding platform to finance the initial development.

**Strengths:**

- **Funding**: Access to a large pool of potential backers who can provide necessary funds.
- **Community Engagement**: Early backers are often enthusiastic and can become advocates for the system.
- **Visibility**: Successful crowdfunding campaigns can generate significant publicity and interest.

**Challenges:**

- **Initial Appeal**: Requires a compelling campaign to attract backers.
- **Expectation Management**: Backers expect transparency and progress updates, which can add pressure.
- **Fulfillment Risk**: Failure to deliver on promises can damage reputation and future funding opportunities.

**Mitigation Strategies:**

- Create a detailed and compelling crowdfunding campaign with clear goals and rewards.
- Regularly update backers on progress and be transparent about challenges.
- Set realistic funding goals and stretch goals to manage expectations and ensure feasibility.

## 3. Open Development
## Chances of Success: Moderate

Focus on communicating the idea by providing a GIT repository as a seed with only the guidelines to follow, leaving development to independent communities.

**Strengths:**

- **Innovation**: Leveraging the collective intelligence of independent communities can drive innovation.
- **Cost Efficiency**: Reduced initial costs as development is distributed among volunteers.
- **Flexibility**: Open-source nature allows for continuous improvement and adaptation.

**Challenges:**

- **Coordination**: Managing contributions from a dispersed group of developers can be challenging.
- **Quality Control**: Ensuring consistent quality and integration of diverse contributions.
- **Sustainability**: Maintaining long-term commitment from contributors without financial incentives.

**Mitigation Strategies:**

- Establish a core team to oversee and coordinate development efforts.
- Implement strict quality control and code review processes.
- Foster a strong community culture with recognition and non-monetary rewards for contributions.

## 4. Traditional Funding
## Chances of Success: High

Seek financing through public or private funds.

**Strengths:**

- **Resources**: Access to significant financial resources from public or private funds.

- **Credibility**: Being backed by established institutions can lend credibility to the project.
- **Scale**: Potential to scale quickly with sufficient funding.

**Challenges:**

- **Dependency**: Reliance on external stakeholders who may have their own agendas or requirements.
- **Bureaucracy**: Possible delays and complications due to bureaucratic processes.
- **Flexibility**: Less flexibility to pivot or make changes without stakeholder approval.

**Mitigation Strategies:**

- Clearly align the project's goals with those of potential funders to ensure mutual benefits.
- Maintain transparency and regular communication with stakeholders to build trust.
- Develop contingency plans to address potential delays or changes in funding.

## 5. Mix Strategies

**Chances of Success: Highest**

Combine multiple strategies to leverage their collective strengths, starting with Open Development and Crowdfunding, then transitioning to Self-Financed operations as the project matures.

### Strengths:

- **Diversified Funding Sources:**
  - **Reduced Financial Risk:** By not relying on a single source of funding, the project is less vulnerable to setbacks.
  - **Increased Capital:** Combining crowdfunding with initial investments can provide more substantial funding for development.
- **Community Engagement and Ownership:**
  - **Early Buy-In:** Crowdfunding and open development engage the community from the outset, fostering a sense of ownership and loyalty.
  - **User-Centric Development:** Direct input from a broad base of contributors can lead to a product that better meets user needs.
- **Rapid Development and Innovation:**
  - **Open Collaboration:** Leveraging the talents of independent developers can accelerate innovation and problem-solving.
  - **Resource Optimization:** Combining resources from different strategies can lead to more efficient use of funds and talents.
- **Scalability and Sustainability:**

    - **Smooth Transition to Self-Financing:** As the project grows, revenue generated can sustain operations without external funding.
    - **Adaptability:** Flexibility to adjust strategies based on project phase and market feedback.
- **Enhanced Credibility and Visibility:**
    - **Public Support:** Successful crowdfunding campaigns can attract media attention and increase public awareness.
    - **Investor Confidence:** Demonstrated community support can make the project more attractive to potential investors or partners.

## Challenges:

- **Complex Coordination:**
    - **Management Overhead:** Balancing multiple funding sources and development models can increase complexity.
    - **Alignment of Interests:** Ensuring that the goals of contributors, backers, and developers are aligned.
- **Resource Allocation:**
    - **Budgeting:** Determining how to allocate funds efficiently across different areas like development, marketing, and community management.
    - **Prioritization:** Balancing immediate development needs with long-term sustainability goals.
- **Maintaining Engagement:**
    - **Contributor Retention:** Keeping volunteer developers motivated over time without direct financial incentives.
    - **Backer Expectations:** Managing the expectations of crowdfunding supporters while transitioning to a self-financed model.
- **Integration of Contributions:**
    - **Quality Control:** Ensuring that contributions from diverse sources meet project standards.
    - **Technical Compatibility:** Integrating code and ideas from various contributors can pose technical challenges.
- **Regulatory and Compliance Issues:**
    - **Legal Obligations:** Navigating the legal requirements of crowdfunding, open-source contributions, and financial operations.
    - **Transparency Requirements:** Meeting the transparency expectations of backers and contributors, which can be time-consuming.

## Mitigation Strategies:

- **Establish Strong Governance Structures:**
    - **Core Team Formation:** Create a dedicated core team responsible for decision-making, coordination, and quality control.
    - **Clear Guidelines:** Develop comprehensive contribution guidelines and coding standards to streamline integration.
- **Effective Communication Plans:**

    - **Regular Updates:** Maintain consistent communication with backers, contributors, and the community to build trust.
    - **Feedback Mechanisms:** Implement channels for stakeholders to provide input and feedback.
- **Strategic Financial Planning:**
    - **Phased Funding Goals:** Set clear, achievable milestones for crowdfunding campaigns to manage backer expectations.
    - **Transparent Budgeting:** Provide detailed budget plans to ensure accountability and efficient resource allocation.
- **Community Building Efforts:**
    - **Recognition Programs:** Acknowledge and reward contributors through recognition, certifications, or token incentives.
    - **Engagement Activities:** Host webinars, workshops, or hackathons to keep the community active and invested.
- **Risk Management Practices:**
    - **Contingency Plans:** Prepare backup plans for potential funding shortfalls or delays in development.
    - **Legal Consultation:** Engage legal experts to ensure compliance with crowdfunding regulations and intellectual property laws.
- **Gradual Transition Planning:**
    - **Timeline for Self-Financing:** Develop a clear roadmap for transitioning from external funding to self-sufficiency.
    - **Revenue Generation Strategies:** Explore monetization options such as premium features, partnerships, or service offerings.

## Implementation Approach:

1. **Initiate with Open Development:**
    - **Seed the Project:** Release initial guidelines and a repository to attract early contributors.
    - **Build Community:** Focus on creating a strong, collaborative community culture.
2. **Launch Crowdfunding Campaign:**
    - **Create Compelling Content:** Develop a persuasive campaign highlighting the project's vision and community support.
    - **Leverage Community:** Utilize the initial contributor base to promote the campaign and extend reach.
3. **Develop in Parallel:**
    - **Combine Efforts:** Use funds raised to support the core team while continuing to incorporate open-source contributions.
    - **Iterative Releases:** Regularly release updates to maintain momentum and demonstrate progress.
4. **Transition to Self-Financing:**
    - **Implement Monetization:** Introduce revenue streams aligned with the project's values and user expectations.

    - **Scale Operations:** Reinvest earnings to expand the team, enhance features, and grow the user base.
5. **Continuous Evaluation and Adaptation:**
    - **Monitor Performance:** Regularly assess the effectiveness of each strategy component and make adjustments as needed.
    - **Stakeholder Engagement:** Keep backers and contributors informed and involved in the project's evolution.

## Conclusion:

By integrating multiple strategies, the project can harness the advantages of each while mitigating their individual drawbacks. This holistic approach maximizes resources, fosters a robust community, and enhances the project's adaptability and resilience. The combined strengths of Open Development, Crowdfunding, and Self-Financing create a synergistic effect that can propel the project toward sustained success.