

Embermine White Paper

Part 1 of 3: The Operating System for the Creative Lifestyle

ABSTRACT

Embermine is a complete ecosystem platform designed to give content creators—writers, artists, musicians, app developers, etc.—the means to achieve true agency and control in their creative endeavors. With smart contract-driven revenue channels, a reputation-based collaboration network, transactions supported by a stable and accessible cryptocurrency practice, and state-of-the-art identity protection all backed by a scalable, proof-of-stake blockchain consensus protocol, Embermine brings the advantages and security of these cutting edge, enterprise-grade technologies and puts them, literally, in the hands of everyday people.

INTRODUCTION

The Creative Conundrum

The creative process is ubiquitous. From the microcosmic level of atomic structure to the macrocosmic level of cultural formation, there is a tendency for everything to come together in novel ways. In some processes, such as that which sustains our universe, the source code is a mystery. In others, such as the production and distribution of a creative work, it is easier to parse out specific variables:

- A Creator with specific intent
- Collaborators and Contributors providing talent and resources
- The creative artifact, or Project
- Distribution
- Customers

The challenge is to establish connections between these variables which streamline the end-to-end creative process as much as possible. A sustainable, creative lifestyle is not beyond our means, but why do so many of us deem this an arduous endeavor, one that requires us to *break* into an industry in order achieve any success?

One reason is the myth of the creator. Many romanticize the creative process as a natural gift, or some innate ability. You either have it or you do not. All this creates is a pattern of disenchantment which nullifies individual potential. Creativity is a craft. It requires time and effort to fashion something out of the materials around us. It is no small feat, and various talents do have impact, but it is also not some inaccessible magic. This concept is born of a persistent narrative that some are more fit to create than others, so only they are worthy of access to the trust and resources necessary to compete in the marketplace. This can lead to the conclusion that one should not, or worse, *cannot* try. This is an incredibly pervasive philosophical obstacle encountered by aspiring Creators. When combined with the following systemic obstacles, the result is a potent formula for self-disqualification.

The second reason many are discouraged from pursuing and maintaining their creative endeavors is that there are forces that have dominated various industries, ultimately setting the parameters by which we can succeed through them. They set the game, establish the rules, and expect us to play accordingly.

Amazon is an example of a powerful entity which does not always have a Creator's best interests in mind. Companies like Amazon seek out certain verticals to dominate, and once they do, they move on to the next one. What this creates is a powerful entity motivated almost entirely by market forces. Growth is dogma. Actual prosperity—not so much. Sure, companies like Amazon excel at indulging a worldwide consumer base, but as a business model for emerging or even professional Creators, the result is ultimately triage.

The self-publishing industry went through a paradigm shift with the advent of Kindle. Suddenly, all aspiring writers who either could not get picked up by a publisher or had no desire to do so, could share their works to the world. This created an influx of writers in the publishing space. However, Amazon is ultimately a distributor. Whether it be a digital file in the form of a Kindle book or an ergonomic chair with lumbar support, Amazon's purpose is to gather goods and move them from place to place. Key elements of individual sustainability such as a low-latency royalty payment system or a means of facilitating secure collaborative relationships are completely missing.

The publishing industry is just one example of a space where content collaboration is cumbersome; in fact, dissatisfaction with this space is what ultimately led to Embermine's development, but there are common denominators across any industry wherein two or more individuals want to develop and produce content. The creative industries are due for an alternative model, one in which Creators are empowered rather than hindered by the tools they use to access markets.

In short, here are the problems Embermine will solve:

- professional relationships with high friction powered only by trust
- digital rights management
- high-latency royalty payment systems
- lack of incentivization of community engagement
- impenetrability of creative industries
- lack of sustainability in the creative lifestyle

THE EMBERMINE PLATFORM

Key Components

A brief explanation of the ecosystem's individual components will help in understanding a detailed exploration of the environment's process flow that follows.

USER

Effectively the virtual self within the environment, a User is a unique, verified private identity on Embermine that creates and manages Entities and wallets. This is the sovereign identity within the environment which can only be revealed to others in accordance with the User's wishes. We believe that privacy is not remaining hidden or anonymous all the time, but revealing yourself on your own terms.

Transactions: Activities on Embermine that require both SPARK and HEAT to execute such as Purchases, Smart Contracts, and Entity Creation.

Interactions: Activities on Embermine that require only HEAT to execute, such as posting comments, following a Creator, or rating products.

ENTITIES

An Entity is a User-created public identity used to conduct both types of activities in Embermine: Transactions and Interactions.

Types of Entities include:

Creator: An entity that creates and manages Projects and Smart Contracts. They can hire Collaborators and interact with Customers.

Collaborator: An Entity that works on Projects and accepts Smart Contracts. They work with Creators and interact with Customers.

Project: An Entity that can create Project Compacts (compiled Smart Contracts) as well as create and sell Products. Directed by the Creator.

Customers: An Entity that purchases Products and interacts with Creators, Collaborators, and other Customers.

Constructors: A special Entity that provides block "mining", IPFS data storage, and User identity confirmation services for the Embermine platform in exchange for SPARK, EMB, and HEAT. Constructors only conduct activities with Users, other Constructors, Projects, and the Ecosystem itself. They do not interact with other Entity types.

Composite Entity: An encrypted group of Entities bound by a Project Compact which transact and interact as one unit with other Entities, but maintain autonomy within the Composite. Cornerstone of enterprise use case.

The Units of Value

SPARK: The token of value used to conduct Embermine transactions including purchases of digital goods, smart contracts, and other applications and services provided by Embermine and its third-party developers. Its value is pegged to bitUSD.

EMB, or Embers: The cryptocurrency used for User account creation and participation in the Proof-of-Stake consensus protocol. The token is encrypted to the User account and removed from circulation. The token's encryption provides the User account access to the Embermine Platform and grants voting rights regarding any proposed changes to the Embermine Platform. The token cannot be returned to circulation, sold, or transferred without permanently retiring the active User account. Until all tokens have been mined, they are also included as part of the rewards given to Constructors and are traded on public exchanges.

HEAT: A unit of "energy" used to execute activities within Embermine. It is also used to measure the amount of User activity surrounding any Entity.

A WALKTHROUGH

User Account Creation

For anyone to access the Embermine environment, he or she must first create a User identity. This is the nexus from which Creator, Collaborator, and Constructor Entities are later created. This virtual self is an encrypted and verified private identity which remains unique and constant amidst the numerous activities and roles engaged by the User's Entities throughout the environment. The User account is tied to key real world identifiers which can be used to create one, and only one, User account. This initial onboarding process is facilitated by technology provided to us by our partner network of digital identity verifiers.

It costs one EMB to create a User account. When the User account is created, that EMB is removed from circulation and encrypted to that User identity. That EMB token will only be released back into circulation when the User account is retired.

Every User account has a wallet with an encrypted address where cryptocurrencies are stored and received during its respective Entities' activities. The Embermine wallet will also be connected to a decentralized exchange layer powered by BitShares, so Users can easily utilize the fruits of their labor for their day-to-day expenses. Embermine, Inc. will never hold any User's USD (or other fiat currency) for any length of time.

A sovereign identity becomes increasingly important within a platform that encourages connections and strands to form between numerous Entities. The social and business practices that will occur as a result of these connections could result in weak accountability if one could simply put on a mask, generate toxicity, and come out unscathed. Connections are comprised of interactions and transactions between Entities—which generate HEAT. In physical space we identify people by the actions they take and the connections they form. What a User profile allows is the formation of a closed-loop control system in which everything ultimately feeds back to the source of the output—the User.

While the system knows how Entities are tied to a core User, that knowledge is not automatically explicit to the rest of the environment. While many Users will choose to implement a universal identification across all Entities i.e. have the Creator, Collaborator, and Customer Entities branded with the same name, some may choose to have different personas in different circumstances. This allows pen names for writers or stage names for musicians and actors. Famous Users who do not want to leverage their fame may choose to operate for a while under a different Customer name. Others may choose to use their status to add more HEAT to a Project. The intent is to give Users the ability to shape their social/professional presence, however multifaceted, without compromising accountability or security.

Finding Collaborators

Once a User account and Creator Entity have been established, it is now time to get to work. The following is based on a fresh Project, although it is possible and recommended to import Projects that were previously in development outside of the ecosystem. Although solo efforts benefit from this system quite well, outlining the environment from the collaborative perspective emphasizes key features.

The first action a Creator must take to commence development on a Project is to give it a working title and follow this with a Statement of Intent. It is important for the Creator to be bold and concise as it also acts as an affirmation that time and energy will be exerted to actualize this Project. After this is done, it is now time to bring together the materials and various Entities.

A key element of the Embermine ecosystem is the social network that allows Creators to seek out Collaborators or have Collaborators come to them. Novelty and innovation occur when individuals and concepts strike sparks off one another. Making it easier for Creators to "find the others," as Timothy Leary once said, will allow project Creators to fill in the missing variables and align themselves with the right mindsets and skillsets necessary for the Project to reach completion.

Embermine aims to develop and cultivate a connective culture that yields results. Having a resource like HEAT allows us to imbue value in the User's movements within the network. More on HEAT later.

Project Announcement

There are multiple ways a Creator can approach this.

Announce a Project. Add HEAT. Let the Project accumulate HEAT from the community. Creator can then open up correspondence with interested Collaborators.

Seek out Collaborators before Project announcement. Creator and Collaborators add HEAT to the Project immediately upon announcement to generate more HEAT in return, thereby boosting their signal.

Create the Project Compact

Once a Project is announced, the Creator creates the initial Project Compact. The purpose of the Compact is to act as the connective tissue between all Entities involved in a Project's development. Essentially, it is a compiled file containing Project Objectives, Project Settings, and the smart contracts generated between the Entities. It is an ongoing, transparent record of the Project's state.

A Project Compact's information includes:

Revenue share percentages as agreed upon by the Creator and various Collaborators

Project Objectives

Project Settings

Various Contributors

One of the key tools within the Embermine ecosystem is the smart contract, more specifically, a user-friendly WYSIWYS (What You See Is What You Sign) smart contract generator. Having the smart contract code (in Solidity) invisible to the User under the surface of the interface is important to reach a mass market audience. A simple WYSIWYS contract interface with the contract variables prepopulating the fields is an easy and familiar interface well within the reach of even mobile technology.

The Creator's input of specific contract terms is then sent to the Collaborator for approval, who can then review the terms and negotiate or approve them. Once approved, the terms are rendered into executable code and submitted to the Project Compact for vote by the Project's Entities. The Project Compact is then recompiled and installed to the blockchain.

Being open source, we will stay true to transparency, allowing others to peek under the hood, even while we ensure the code remains invisible to those using it. The smart contract is one of the most exciting innovations to emerge from the blockchain space, but if the average User remains intimidated by the technology, they will never be able to harness its ultimate potential. Today, mass market adoption is constrained. Tomorrow, Embermine will open it up for everyone. Everywhere.

People already have the power of the executable in the palm of their hand. Giving Creators the ability to wield this power and take control of their professional and creative lifestyles is the main goal of the entire Embermine Project.

The Project Compact, in short, is the methodology for Entities to achieve and maintain consensus within a Project.

Now, when a Project goes live—when the album, e-book, or application is complete—it is now available for purchase.

Publish to the Marketplace

Once a Project is published and available for sale, the content and its optional file formats are stored on the Inter Planetary File System (IPFS) which also holds the encrypted Embermine application data. This reduces the storage load on the blockchain itself while granting decentralization benefits such as redundancy, encryption, and version history management.

When a Customer purchases content (with SPARK and HEAT), the transaction is not between the Customer and the Creator, but rather the Customer and the content's Project Compact. This ensures privacy on behalf of the Customer since he or she does not need to share information with any specific individual. When the transaction goes through, the Project Compact allocates the revenue shares according to the set percentages.

HEAT: A DEEPER EXPLANATION

HEAT is a unit of "energy" used to execute activities on Embermine while also measuring the amount of User activity surround any Entity. HEAT units are first introduced in the Embermine Ecosystem as a reward to Users when they successfully meet particular objectives or accomplish special achievements. The very first accomplishment is creating a User account, upon which a set amount of HEAT is rewarded. This allows the environment to maintain equilibrium with scale.

Users then allocate any HEAT they receive to the Entities that they create. All interactions on Embermine cost a base amount of HEAT in order to execute, with the ability to add extra HEAT to the cost as a "donation" to the receiving Entity. The amount of HEAT added to the Entity's Total HEAT is equal to the amount spent by the User, less the portion of HEAT lost as Radiance.

All Entities have Radiance, with is the amount of HEAT sent into the environment during HEAT transfer and over the course of time. Radiance is represented as a percentage, increasing with low activity and decreasing with higher activity. The amount of HEAT sent out is absorbed by the Ecosystem and other "nearby" Entities.

The HEAT Index is a number representing a User or Entity's level of HEAT relative to other Users and similar Entities. A higher HEAT Index effects an Entity's visibility throughout the environment, such as giving it greater weight relative to similar Entities in search results, project announcements, and product recommendations.

The goal of HEAT is to further incentivize Users to be active within the Ecosystem, engaging with it on multiple levels. It also provides a way to add services and interactions into the platform that require resources to help establish value to the activity without effecting the User's bottom line. Since HEAT cannot be bought, but is earned through consistent community interaction, the problem of "purchased reputation" often found on other incentivized platforms is minimized.

EMBERMINE IN PRACTICE: THE USE CASES

The Embermine Project is an effort to not only provide content creators a versatile operating system for their endeavors, but all Users interested in frictionless collaboration. Within the Ecosystem are Entities which connect to each other, resulting in constant change within the environment. While we may provide a variety of use cases up front, we encourage the entrepreneurial spirit to experiment. Not only do we want our Users to experiment with the tools available, we also encourage our third-party developers to create apps and plugins which integrate directly within Embermine Space, our collaboration area holding all the files and productivity tools required to complete the Project. This effort will open Embermine's platform capabilities to allow for almost unlimited flexibility required for advanced, custom, and even Enterprise-level uses.

POSSIBLE USES CASES INCLUDE:

Novelist	Musician	Graphic Designer	Cover Artist	Editor
Web Design	App Developer	Photographer	Online Periodicals	Fantasy Sports
MMORPG	eSports Teams	Streaming Service	Fundraisers	Accountant
Models	Courier service	Indie Ride Service	IOT Service Contracts	Publicist
Online Church	Online College	Instrument Lessons	Laundromat	Digital Lawyer
Architect	Research	True ROI Advertising	Decentralized YouTube	Philanthropy

OUR APPROACH TO THE MASS MARKET

The key to Embermine's sustainability after beta and official launch is to grow a dedicated user base. In order to accomplish this, we cannot wait for the entire development cycle of an initial wave of Projects. So how do we grow our user base and generate activity on the site without relying entirely on "homegrown" content?

With our Payment Capture Technology, revenues which occur on other marketplaces such as Amazon, Google Play, or iTunes can be intercepted and processed by the Project Compact within Embermine, bringing some of the novel functionality of the platform to Users' products in existing marketplaces. While it is not an ideal system as some percentage of the product revenues are still lost to these markets, it brings these established markets within reach of the smart contracts created in Embermine to govern those products. More importantly, it helps maintain open markets and freedom of choice for those committed to a sustainable lifestyle.

With a decentralized design focused upon providing redundancy, accessibility, and versatility, Embermine will become the operating system for one's creative lifestyle. An easy alternative to the dis-empowering, centralized systems currently available, Embermine removes nearly all financial and legal friction that significantly encumbers most individual and collaborative efforts.

Coming Soon: Part 2 of 3 – The Embermine Technology Roadmap

[This document is subject to change. All edits will be reflected on the website and PDF versions.
Recent update: 4/13/17, 14:00 CST]

The Embermine Platform Development Timeline

