BlockChainMail

Global delivery network of the future

blockchainmail.eth
blockchainmail.net

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***Abstract*—BlockChainMail is the delivery network of the future. Inherently distributed, and built on the *Ethereum* smart contract platform, BlockChainMail provides a revolutionary new way to deliver physical objects. BlockChainMail is a key enabler of tomorrow's internet of value and facilitates the quick, seamless and secure transfer of physical items across the globe.**

1. Introduction

This white paper introduces BlockChainMail, its core mission, the leadership team behind it, its operational plan and most importantly, its cutting edge logistics technology platform and the key value offering available to token sale participants.

2. Core mission and vision

BlockChainMail's mission is to revolutionise the way physical items are transported across the globe and beyond. While existing global distribution networks work tremendously well and with great efficiency, BlockChainMail will operate in parallel to legacy global logistics networks but with many key features and benefits:

- Simpler and easier-to-use
- Optional packaging
- Safe, inherently insured
- All objects fully underwritten with automatic compensation
- Lower cost
- Increased delivery speed
- Full tracibility
- Physical manifestation of the blockchain

BlockChainMail doesn't seek to completely replace legacy logistics networks, but will instead complement legacy postal systems. Not every item will be suitable for transport across the BlockChainMail network (for example: irreplaceable objects, private and sensitive items, mission critical items, etc.) but it will offer organisations and consumers a whole new way to transport their items that suits their needs and opens up a whole new world of possibilities that may not have been possible otherwise.

3. Value proposition

We propose the BCM (BlockChainMail) as a token of exchange in a peer-to-peer global delivery network where all transported objects are securely underwritten. The BCM delivery network provides:

- Users: low cost, secure, easy-to-use delivery that requires no packaging, no address labelling and no paperwork in the event of an insurance claim
- Delivery personnel: improved revenue, work hours flexibility, piggy-back opportunities, no centralised chain of command
- Global organisations: lower cost logistics, easy-to-use, no complex agreements, full tracibility, reduced fraud, less hassle and seamless integration with existing IT systems

4. Project funding via token sale

Seeding the project with an appropriate level of capital is crucial for the project's success. Peer-to-peer delivery is a classic chicken and egg problem - couriers need users needing to delivery items and users need couriers to shift their items. To address this problem, we propose raising $50 to seed the roll-out of BlockChainMail in a regionalised, segmented way. Once the initial roll-out areas are up-and-running, the team will step and repeat as quickly as possible. The ultimate goal is global coverage as quickly as possible.

The team is led by:

- **Eamonn Hynes**, Chief Executive Officer
- **Toni Carradonna**, Advisor
- **Mark Jameson**, Blockchain Developer

This seasoned team is a blend of experience across many dimensions. The team has a proven business and entrepreneurial track-record, experience in the delivery and management of complex projects, technical excellence in the blockchain space and solid marketing and communications know-how. Token sale participants can be confident that they are backing a solid team with the know-how and capability to ensure that this project goes from funding to dividend in a rapid timeframe.

The team will be incorporated in an EU office in Dublin, Ireland. This jursidiction benefits from being in the Eurozone with easy access to the UK and USA markets where there are strong cultural, economic and political links. Significantly the incorporation location benefits from an extremely low corporation tax base and a strong legal system where with a high level of compliance, enforcemennt and honouring of contracts. The location is accessibly globally and is an pleasant place to visit for business or pleasure.

The office itself is in a prime global tech hot-spot and is surrounded by global technology companies and affluent residential buildings.

This project will execute in four different stages:

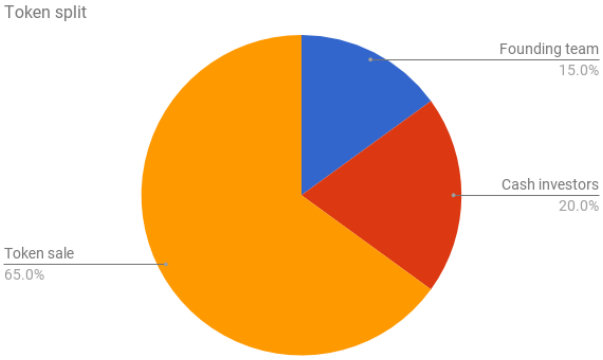
Stage 0: Assemble team

Stage 1: Pre token sale cash investment

Stage 2: Launch token sale on 10th November 2017

Stage 3: Deploy post-ICO operational team and execute business plan

The token split will be as follows:



5. Project roadmap

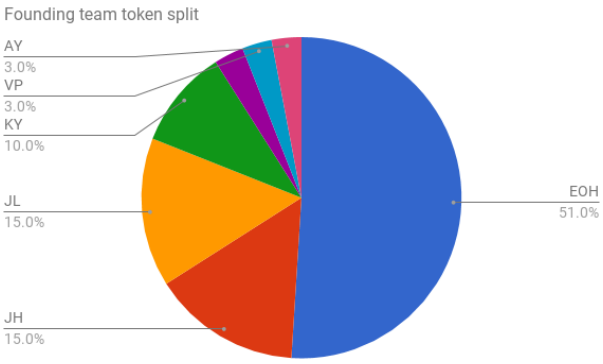
The BlockChainMail project roadmap (Figure 1), while ambitious and aggressive, is realiste and achievable within the timeframes. The team is enthusiastic and determined and will realise its ambitions by combining its experience, skills and passions to create a next-generation, blockchain-enabled global delivery network capable of servicing the needs to tomorrow's economy.

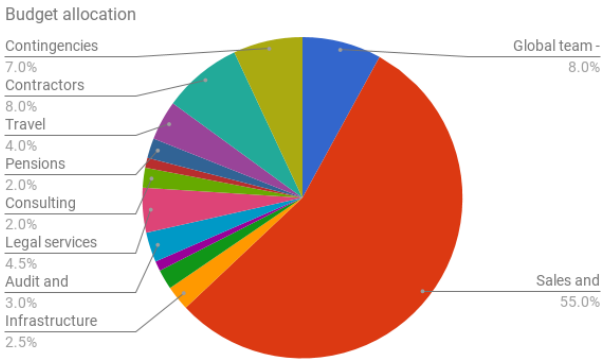
Figure 1. Project roadmap

5.1. Stage 0: Assemble team

A high quality globally distributed team of seasoned business persons, entrepreneurs, technology experts and communications specialists has been assembled. The initial team will be rewarded with an allocation of 8% of all BCM tokens.

The key team members with the business and blockchain experience necessary to drive this project forward benefit the most from the founding members allocation. Those members committing the most time, effort and expertise to the BlockChain project forfeit opportunities on other projects and benefit the most. Secondary and tertiary founding members invest their time and expertise to a lesser extent and are rewarded in a proportionate manner.





5.2. Stage 1: Initial cash investment

Stage underway. We are currently putting in place the funding, people, resources and infrastructure to ensure the token sale goes ahead as planned, is successful and the company moves on to the next stage as quickly and efficiently as possible. Initial investors will be rewarded with an allocation of 20% of all BCM tokens.

The pre-ICO fundraising round is for $1 million. Once this funding round is complete, the project will proceed to ICO launch with there being no further dilution of these 200,000 tokens.

At this stage, we invite interested entities and high net worth individuals to engage with us.

5.3. Stage 2: Launch token sale

The token sale launches on 10th November 2017 close to 00:00 UTC. The exact block number will be published in the smart contract code which will shortly be published, publicly viewable and verifiable.

The token sale will proceed according to the following rules:

- Sell 1 million tokens in exchange for approx. $50 million worth of Ether
- If all tokens are sold within 10 days, proceed to Stage 3
- If all tokens are not sold within 10 days, all Ether is return and project is abandoned
- Token sale is controlled by a smart contract with no warranties or compensation mechanism in the event of unexpected behaviour

5.4. Stage 3: Post-ICO operations

On completion of the token sale, the project fundraising is complete and the deployment phase of the project will begin. At this stage, the operational team will be put in place and the business plan will be executed.

A large proportion of the budget will be allocated to advertising and marketing.

6. How it works

Consumers and businesses interact with delivery companies in a similar way - typically this behaviour involves logging in to a centralised web application, selecting a delivery option, paying for the service, printing a label, packaging the item and arranging the physical hand-over to either a courier or a drop-off location. It's important not to underestimate the power and efficiency of today's global delivery network. It's an amazing system that allows anyone to transport items across the globe in a rapid period time and at scale, the deliver can be done for a very low cost. BlockChainMail seeks to augment and enhance the global delivery network, not replace today's successful logistics companies. BlockChainMail will require a change in user behaviour - interacting with the distributed web (or *web3*) is currently not seamless, but a huge amount of progress has been made over recent weeks and months. The BlockChainMail website and mobile application has been designed to make interaction with the smart contract as easy-to-use, quick, fast and as similar to current user behaviours as possible. The BlockChainMail development team are up-to-date on *web3* developments and are ready to rapidly deploy new features to users as they become available.

The process of sending an object is as follows:

1) New delivery request
2) Handover object
3) Repeat step 2 *n* times
4) Deliver object to final destination

6.1. New delivery request

The first step is to create a new delivery request. This process is very easy to do using the mobile phone app (iPhone or Android). A new delivery request can also be done by uploading a photo via the web application.

- Enter the source GPS coordinates
- Enter the designation GPS coordinates
- Take a photograph of the item
- Add a delivery note
- Enter time constraints
- Specify insurance level required
- Pay for the deliver

6.2. Collect an object

Once the object is broadcast for delivery on the BlockChainMail, a courier will arrive to collect the item at a convenient time and location.

6.3. Handover an object

Handover is simple - the object is inspected so that the new courier or object recipient is happy that the item hasn't been damaged or tampered with. Once both parties are happy, a QR code is presented and scanned and the object is deemed transferred (i.e. the object moves one step along to the chain and the insurance liability is transferred to the new holder of the object).

6.4. Finalise delivery

Once the object is with the recipient, the delivery is complete - all insurance liabilities are removed and the smart contract is deemed complete. The Ethereum addresses used by the sender, recipient and all couriers are publicly viewable and future BlockChainMail participants can see that these participants have a track-record in successful deliveries. This reputation is stored natively on the blockchain, cannot be tampered with, interfered with or censored. If a user does mess up, they can decide to create a new address and begin building their reputation again. We believe the untamperable annd irreversible reputation features of BlockChainMail is a key feature that's unavailable with centralised delivery systems and will help BlockChainMail drive growth, quality and global adoption.

6.5. Delivery exceptions and insurance claims

In the event of a delivery exception (i.e. item doesn't arrive or does not arrive within the required time constraint), an insurance claim is initiated against the address which is currently responsbile for the object's delivery. All couriers understand that once they accept an item for deliver, they are responsible for it, must have an insurance policy (a smart contract escrow) for the required amount and must deliver within the time constraint. If this agreement is not adhered to (for whatever reason), the smart contract will execute (the operation of the smart contract is irreversible) and the courier will bear the cost of the agreed insurance contract.

7. Technology

The core technology of BlockChainMail is a smart contract written for execution on the Ethereum Virtual Machine (EVM). The smart contract facilitates the hand-over of physical objects between two parties (human or non-human) and in the event of the object not being delivered as agreed, an insurance claim is automatically initiated and paid without any human intervention. The smart contract is developed and currently undergoing testing and verification. The smart contract will be updated regularly in accordance with changing business needs. New smart contracts will be published on the BlockChainMail public repo, with the number of version updates being kept to a bare minimum.

The smart contract will shortly be published and will be available for inspection and testing by all token sale investors. We are confident in the code and in the Ethereum blockchain and look forward to many years of secure operation of the BlockChaimMail contract.

Simplicity is key with the BlockChaimMail smart contract and simplicity is the key design theme. The number of features has been kept to a bare minimum so as to ensure that the code can quickly and easily be examined, understood, tested and verified. Not just for the BlockChainMail development team, but also for those members of the public (including white-hat and black-hat hackers) interested in probing the contract.

7.1. Web application

The blockchainmail web application is a state-of-the-art, easy-to-use and high quality, design-orientated website that links seamlessly with the Ethereum blockchain. The site is designed in such a way that everyday users can interact with the Ethereum blockchain the way they would interact with any other payment layer or internet web application. The technology used to build the site is JavaScript, with a React.js front-end.

The site is multi-lingual in English, Russian, Chinese, Japanese, Spanish and Portugese.

7.2. Mobile apps

An easy-to-use iPhone and Android app is available. While both apps are "walled garden" type applications, all delivery data (GPS coordinates, delivery notes, photographs) are stored on and served from a blockchain-based distributed filesystem (Swarm).

Emphasis is on high quality user interface and mass-market adoption. Eventually, the promoters envisaged all transactions being intiated from a web browser (including mobile web browser) that is free from walled garden - type constraints. There is a risk that the app store owner could restrict BlockChainMail due to its inherent reliance on blockchain payments as opposed to app store payments.

7.3. web3 application

blockchainmail.eth (chainmail.eth is also available) will be the home for BlockChainMail on the distributed web (also known as "web3").

The web3 application is the exact same as the blockchainmail.net web application but deployed to the *Swarm* distributed filesystem and connected to the .eth domain name.

7.4. Design

Design led from day zero, design is not just about a website or an app, it's the manifestation of our identity, our business plan, the ambitions of the leadership team. BlockChainMail revolutionises global delivery. By leveraging blockchain and smart contract technology, blockchainmail enables users to deliver physical objects in a quick, easy, effortless, time sensitive and cost-effective manner.

Core words which spring to mind when describing identity:

blockchain, ethereum, network, interconnected, hive, bees, future, technology, advanced, smart contract, object, physical object

The BlockChainMail theme is inspired by nature and technology. The technology is blockchain (specifically, Ethereum and its smart contract platform) and the natural inspiration comes from mathematics (ordered, hexagonal shapes and patterns) and insects (specifically, bees with their advanced, social, collective behaviour and their beautiful, awe-inspiring colours).

BlockChainMail

8. Leadership team

Eamonn Hynes MA MPhil
Eamonn Hynes is a software engineer and blockchain expert. Based in the UK, Eamonn has been involved in the Ethereum blockchain community for the last number of years. A business owner and entrepreneur, Eamonn built a successful multi-million Euro recruitment company. Eamonn has a master's degree in Computer Science from Cambridge University.

Toni Carradonna
Based in Switzerland, Toni has many years of experience in delivering complex software projects.

Mark Jameson
Heavyweight software developer with a specialism in smart contract development. Born in Dublin, deployed globally.

9. Disclaimer

All participants in BlockChainMail should know that no warranty, guarantee or refund is available under any circumstances. No individual team member or corporate entity can be held responsible for any software bug, oversight, error, mistake, hack, etc. While a good effort has been made to debug, test, verify and ensure that the program will run as expected, no individual BlockChainMail member or corporate entity or otherwise can be held responsible for any loss or damages. Should loss or damage occur that is as a result of some action that is deliberate, malicious or otherwise; no compensation, recompsense or rectification is available under any circumstances. Smart contract technology is embryonic and we urge all token sale participants to do their own due diligence, examine all software codes and satisfy themselves that the smart contract will execute as expected.

10. Conclusion

This white paper details how BlockChainMail will revolutionise global delivery. We have assembled a high quality globally distributed team with the technological know-how, experience in building successful businesses, in raising millions of dollars in financing and in championing disruptive b2b and b2c technologies.

We invite interested parties to get in touch as soon as possible to discuss opportunities at token sale stage and pre token sale stage. We are happy to arrange meetings onsite where we can introduce the team and demonstrate our capabilities.

Acknowledgments

The authors of this white paper would like to thank the Ethereum Foundation for creating such a visionary protocol and smart contract platform. This project would not be possible from a business or technical perspective without access to this free and open technology stack.

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