Whitepaper
August 29, 2017
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1. State of Blockchain

The industry has spoken, the blockchain platforms of today, and as they are currently built, are not fit for scale or speed, they continue to lack security and they are not designed for the masses in the developer community.

We have all heard of the problems within the ever expanding blockchain space. The fact that scalability isn’t just the giant elephant in the room, it’s that elephant that has taken over the room. They are slow. Security – one needs to look no further than the recent events of not just (Initial Coin Offerings) ICO’s being hacked but exchanges, wallets and entire systems as well. The blockchain space is not for everyone - there a limited few developers in the world today that can build upon any of the existing blockchains.

Imagine if there were a solution that provided the scalability that we all know this sector needs, we’re not talking about 10, 100, or even a thousand transactions being processed per second. What if there was a blockchain that could run a minimum of 40,000 transactions per second with future enhancements that are even higher? What if there were a secure and fundamentally sound platform, built upon the lessons learned from initial efforts of Bitcoin and Ethereum that would allow developers of all mediums and categories to build on that platform? What if that platform were built not on proof of work but proof of stake? Yes – we’ve heard the rumors about groups coming out with bits and pieces of those solutions but there simply isn’t one that can promise all that and be less than a year to market.

Until now.

2. Solution

The RChain platform, is being developed by the Seattle based RChain Cooperative. Working as a co-op, to enable its members equally, it has deep industry roots and arguably more collective years of experience than other blockchain entrants.

Founded by Lucius (Greg) Meredith, RChain is the culmination of a number of innovations he’s developed over time. The core of RChain is based on mobile process calculi, a branch of mathematics with approximately 30 years of history. Greg started at Microsoft and was the Principal Architect of BizTalk Process Orchestration. The first
Internet Scale Smart Contract system, giving rise to the Internet Standards BPML, BEPL, and WS-Choreography as well as influencing the widely used WSDL, of which Greg was a co-author. Greg’s vision and creation were years ahead of its time. So Greg went on his own to work on solving the problem he set out to at Microsoft. Fast forward ten years and we find Greg now designing and building what he has always envisioned – the industry’s first scalable and trustworthy, blockchain technology that will be open and available to all.

The RChain platform is a transformation in blockchain technology as it empowers its users. On the RChain platform smart contracts are concurrent and formally verified by the compiler, so they’re fast, versatile, and secure. Those contracts are written in RhoLang, which is a strongly-typed, concurrent, and correct-by-construction language.


RChain’s platform provides a unique differentiator for the development community. RChain platform supports multiple blockchains, both public and private on the same node. These blockchains can interact securely, predictably and at scale. This is a vision that developers have been hoping to see realized for years. These blockchains are secured by the type of consensus protocol the whole industry has been waiting for proof-of-stake. This is consensus by validators that are more scalable and fault tolerant.

One other, and very valuable, aspect of our platform is our use of LADL = Logic as a Distributive Law. It is a form of compression (more throughput) and can generate type systems for un-typed languages. This is a huge differentiator and is described in greater detail under the “technology” section.

So what’s the big deal? Because the RChain platform enables more trust on the Internet, it’s evolutionary. It enables innovators worldwide to create fast, scalable and decentralized solutions that are far less resource intensive, a key improvement from existing blockchain solutions.

Think new, tamper-proof, financial platforms; social networks and endless other possibilities. Solutions that enable every individual to finally control their own identity, reputation and data.
Also, and not just a side note, is the fact that we are developing a protocol that will allow developers, across multiple languages, can literally press a button and transform their current application/program code over to, and enable the operation on the RChain blockchain. The developer community has been looking for this solution and it is nearly here. A simple “translator” of code that will literally allow just about anyone developing to add their product/service/app onto the RChain blockchain.

3. Vision

The vision of the company and its founders is to help change the world as we live in it today. This is not a small statement by any means, but one that we all believe can be enabled by the proper evolution of blockchain technology. If RChain can participate in just a small portion of that change it could have a profound impact.

There is tremendous waste happening in our world today. Waste of energy, waste of government control, waste of mindshare and most importantly a waste of hope in our future. Our outlook is to help ease and eliminate as much of that waste as possible. We believe we can accomplish this by building a blockchain technology that has broader applicability, less resource intensive and is more evenly available to people in every country in the world.

From the small African countries where its citizens will be able to purchase electricity by the kilowatt hour from their mobile device, to the market owner who is selling a handful of eggs in China or to the home purchaser in rural Iowa.

It takes a community to grow and build something with a level of trust and usefulness that everyone, everywhere can utilize.

4. The Cooperative

To turn our vision into reality we needed to set up a mechanism for the RChain platform to live. The RChain Cooperative. Is an entity that is owned and controlled by its members.

The RChain Co-op has a board of directors, with Greg Meredith being the President. Each Co-op member receives one vote – regardless of how many tokens are owned.
The membership fee to belong to the Co-op is purposefully affordable ($20) to allow people from all over the world, regardless of financial situation, drive the vision of the Co-op.

The Co-op entity owns and is responsible for the development and maintenance of the RChain platform. This Private Token Sale is going to fund the development and upkeep of the RChain platform (see use of proceeds).

The Co-op will thrive from the fractions of a cent that it will “cost” to interact within the RChain blockchain. As those transactions increase we’ll collectively decide (via voting) by the Co-op members to lower those fees. With the ultimate goal to make transactions so inexpensive that there isn’t even a thought in the minds of those using the blockchain about cost.

Another smaller portion of revenue will come from the Co-op memberships. During this Private Sale we are requiring purchasers of RHOC to join the Co-op. This enables even greater distribution of the decisions and power of the Co-op.

Should excess income accrue within the Co-op we will have mechanisms in place and voted upon by the Co-op members on how best to distribute that income. It may be in the form of patronage dividends or more likely it will go towards the building and operating of other applications (on the RChain platform) that are meant to progress the word and actions of our ultimate cause – waste and specifically climate change.

During the next 12 months we’ll be engaging the community to start to evangelize and introduce the platform in anticipation of the product launch. Full product launch, named Mercury, is projected by the end of Q3 2018.

“I want to focus on the last mile first. I want to be spending my time enabling and helping the end users and recipients of RChain. The producers at local farmer’s markets. I want work with local physician’s clinic and their patients to set up direct solutions, not sitting in a board room with a bunch of executives”

Greg Meredith – Co-Founder/President RChain
5. Team

Greg Meredith  Slack Profile: @leithaus

Greg is the founder and visionary behind RChain, with a tremendous passion for mathematics and over 30 years of high level experience driving innovative technology projects. Greg is the Co-founder, President and Member of the Board of Directors of The RChain Cooperative. Previously he was the Principal Architect of Microsoft's BizTalk Process Orchestration, Principal Architect of Microsoft's Highwire offering as well as Principal Architect of ATM Network management solution for ATT/NCR and Co-designer and developer of MCC's Rosette/ESS technology. No discussion about Greg would be complete without mentioning his unwavering passion/devotion (understatement) to the environment.
Ed Eykholt  Slack Profile: @ed.eykholt

Ed is a Co-founder, Board Member of RChain Cooperative and the CEO of RChain Holdings Company rchain.io. Ed has worked has led multiple large-scale projects including work with Microsoft and Alstom Grid (acquired by GE), before founding Lively-Gig. Ed is now dedicated to developing the complete RChain ecosystem. Ed has over 30 years’ experience in the technology industry, leading teams in a variety of companies. Ed holds a BS in Electrical Engineering and MS in Management from Purdue University.

Kenny Rowe Slack Profile: @kennyrowe

Kenny, is a Board Member and the Chief Operating Officer. An entrepreneur who brings a focus on governance, community building and collaboration to projects across the blockchain industry. Kenny currently serves as head of operations at MakerDAO as well as a senior consultant at CoinFund. Kenny founded the Seattle Ethereum Meetup group and previously spent eight years working in ecommerce for Newell Brands in various management roles.
Evan Jensen  Slack Profile: @ejensen

Evan is the Secretary of The RChain Cooperative and acts as General Counsel. Evan is an attorney with special interest in progressing crypto-related law. Evan earned a Bachelor’s Degree in Philosophy from University of Washington, and Juris Doctor (J.D.) form Seattle University, Cum Laude and an LLM (Master of Law) in Innovation and Technology, Fintech from Seattle University.

Aleksandr Bulkin  Slack Profile: @alex

Alex is a Co-Founder and Managing Partner at CoinFund LLC. He is a multidisciplinary thinker with a special interest in social and technological innovation. He holds a dual degree in Mathematics and Computer Science from New York University and a Masters Degree in Organizational Psychology from Process Work Institute in Portland, Oregon. Alex bridges technological insight with social science and psychology.
Ian Bloom  Slack Profile: @ian

Ian is a Linux, Open Source, and Crypto currency enthusiast with a finance degree from the University of Baltimore. He has been actively supporting the development of RChain since April 2015 and was a member of Synereo’s core team, helping with systems admin, marketing, website development, and hosting. He worked as a Microsoft Systems Engineer (MCSE) for AEGON, Computer Security Specialist for Fortress Technologies (now General Dynamics), & Kroll. He currently lives in Bethesda, MD.

Lisa Rice
Chief Financial Officer for RChain Cooperative. She has over 20 years of finance experience in accounting, financial planning, budgeting and corporate treasury. Her experience includes a broad range of businesses and industries from both public and private equity held companies. Lisa holds a MBA in Finance from the University of California, Los Angeles and a BBA in Accounting from the University of Michigan. She’s a licensed CPA in the state of Washington.

In addition to the Board of Directors and Management team, RChain is fortunate to have a skilled group of development partners and key advisors:
4.1) Key Advisors and partners

Partners:

Pyrofex is one of our key development partners; we have been working hand in hand with their team and feel they bring the type of innovation and knowledge that fits with our vision. The two key leaders are:

**Mike Stay**
Mike received his Ph.D. in Computer Science from the University of Auckland in 2015 with a specialization in category theory. Before Pyrofex, Mike worked on software security tools for Google's Ads team.

**Nash E. Foster**
Nash has over 20 years of experience in the computing industry and has served on the engineering staffs of Google, Oracle, Counterpane, iBiblio, and many others. Nash studied mathematics and the theory of computation at the University of North Carolina and George Mason University.

Key Advisors:

**David Otto**, Outside General Counsel;
David M. Otto has twenty-eight years of experience in corporate finance, securities, mergers and acquisitions, and corporate law and governance. In addition to his law practice, Mr. Otto founded Otto Capital, LLC to identify and secure private equity, venture capital, and debt financing for start-up and emerging growth companies. He grew up in Seattle and enjoys being involved in projects and activities that support the community.
Bar Admissions: Washington and New York
Fordham University School of Law, J.D., Commentary Editor, Fordham International Law Journal, 1987
Steve Careaga has more than 20 years of extensive experience in the areas of business management, venture capital, private equity, project management and business development. Steve has worked with many start-ups and emerging growth companies, started several successful ventures and has served both private and public companies at the CEO, COO and Director level. Steve also has extensive experience in China and Hong Kong working with companies in the real estate development, commercial construction, environmental, and technology sectors in Asia. Steve is also very active in the blockchain community heading up a team at Otto Capital LLC, specializing in funding for blockchain startups.

Greg Heuss, As a serial entrepreneur Greg has been involved with technology companies for over 20 years and has helped build some of the largest brands in the world. He got his first taste of the start-up world in 1998 when Amazon was still a start-up where he led the sales and marketing efforts of new product, brand and special events. Greg went on to help create Kiss.com which he sold, to Match.com. He later helped build and direct multiple companies to a point of merger, sale and/or public offering. He has a deep background in data analytics, AI and image recognition along with a diverse and deep understanding of the music industry. Greg has always been on the cutting edge of consumer trends and technology. His most recent venture has led to specializing in the structure, go-to-market and fund raising efforts within the blockchain community. Greg, holds a degree in Business and Marketing from Washington State University.

6. Member Community

The Co-op is the organization that develops the open-source RChain platform software. It’s an open and community-driven initiative with multiple communication channels through which all are welcome to participate. The Co-op is dependent on participation from its members. This will be crucial for governance, innovation and adoption. We want our members to be active evangelists for the community. We strive to create an environment where developers will be excited and committed to the project and will only want to develop their dApps on the RChain platform. This way of thinking affords us the opportunity to make a positive change in the world.
7. The RChain difference and why we'll win

RChain has a tremendous advantage over other current and up and coming blockchain technologies, below are four areas that we are different, better, and will win versus any competitors.

One) The team. Experience and knowledge like the founders and the staff are attracting are second to none. As we all know the blockchain community is small. By simply asking around in the space who the greatest influencers are you’d be hard pressed to find anyone that doesn’t have knowledge about the team of advisors and contributors that RChain has been able to bring to the table. For this team it isn’t about building a technology and company for the first or second time – our developers have done it multiple times and have been in and around the blockchain space longer than just about anyone in the spectrum.

“Greg Meredith is a logician and mathematician with an astounding grasp of concurrency, formal verification, language design, and computer science. His knowledge is not compartmentalized, but rather reflects his holistic understanding of the fundamentals of theoretical computer science.”

Vlad Zamfir, Ethereum Foundation Researcher

Two) Speed and Scale. This is a technology (blockchain) that can not only scale but can accommodate tens of thousands of transactions per second. The goal is to launch with the capacity to handle 40,000+ transaction per second and it won’t be long until the platform can withstand, with ease, 100,000+ transactions per second. This of course is what is holding up and hindering the existing platforms (Bitcoin and Ethereum). For RChain to “win” and make a significant mark in this space scalability and speed are crucial.

Three) Tools. The developer tools that will come along with the RChain platform have not yet been achieved in the market place. We are building a blockchain that developers of various skill-sets within multiple code languages can easily and functionally connect their app’s/product to the RChain blockchain. Yes, this has been tried and others say they are working on this – we’ve already mastered this issue and are proud to offer it within the RChain platform.
The current software tool industry is quite large with Mathematica alone claiming over $1B in revenue. When we add in Matlab, the CRAN, and other financial and biological modeling platforms we are looking at 10's of B's of $. These should all be blockchain enabled and RhoLang and RChain is poised to provide those capabilities and interfaces.

**Four) The Co-op.** The way in which we have set up this membership and allowed accessibility to the code/blockchain is unique, transparent and open to the community. All of the blockchain code is open-source. The membership fee to join the Co-Op and to have a deciding vote is set at a low enough price that practically anyone from anywhere in the world will have a say in the future of the RChain blockchain technology.

“When we link our message and vision with higher purpose collaboration is much easier. In the end we are all in this together.”

*Greg Meredith – President and Co-founder of RChain Co-op.*

**8. Go to Market Strategy**

How are we going to pull this off? With the help of the community. It does sound cliché, overdone and everyone seems to be saying it.

We’ll be different in that we’ll have a product that when looked at will be an obvious game changer. Upon further review developers will see that we have made it easier than any other platform in existence to transfer your app/product/code over to the RChain platform via our “push a button” translator.

We plan to follow that initial thrust of attention by partnering with other entities on-boarding at a minimum ten key enterprise accounts that will push applications out on the RChain platform as it launches in 2018. This will insure we have a solid footing of developers from the enterprise level using the platform.

Where the bulk of our support will come from is the thousands of other developers that are seeking the next iteration of the blockchain, one that scales, is secure, fast and that they can easily build upon. With a portion of the funds raised from this Private Sale an outreach of domestic and international meet-up’s, hack-a-thons and RChain promotions will ensure that the developer community knows about RChain and its capabilities.
As we’ve seen from the many ICO’s and blockchain products that have come before us – publicity can only go so far. The key is to have a strong message but more importantly is to have a strong platform that is being used and has been proven to be the obvious choice out there for the developer world.

A set of milestones and goals has been set (see them here) so it will be easy for the community to follow the progress and the adoption that the RChain blockchain is gaining.

9. Technology

The RChain Blockchain Basics:

RChain Overview Video

A Turing-complete and Byzantine fault-tolerant, replicated virtual machine:

The heart of an RChain is the Rho Virtual Machine (RhoVM) Execution Environment, which runs multiple RhoVM’s which are each executing a smart contract. These execute concurrently and are multi-threaded. This concurrency, which is designed around on the formal models of mobile process calculi, along with an application of compositional namespaces, allows for what are in effect multiple blockchains per node. This multi-chain, independently executing virtual machine instances is in sharp contrast to a “global compute” design which constrains transactions to be executed sequentially, on a single virtual machine. In addition, each node can be configured to subscribe to and process the namespaces (blockchains) in which it is interested. “ The RChain decentralized applications platform is powered by the Rho Virtual Machine.
Independence. Each instance of RhoVM executes an independent set of smart contracts on an independent blockchain and networks only when necessary. This means that RChain is partitioned (sharded) by default, resulting in a network of coordinated and parallel blockchains. This well sought-after "multi-chain" design is built with self-sufficiency in mind, and it represents a victory unique to RChain.

Scalability. As the platform grows, nodes simply initialize new instances of RhoVM to manage the load. This allows the platform to scale linearly while keeping performance, consistency, and code complexity constant.

Performance. Each instance of RhoVM is lightweight and multi-threaded, so multiple high-performance instances can exist on a single node. Thus, applications on RChain achieve unprecedented throughput, availability, and response time, opening a new landscape of decentralized applications suitable for the modern market.

Dynamic and Composable Address Spaces

The visibility of a blockchain and its smart contracts, to other contracts on the network, is determined by the blockchain’s namespace.

Namespaces offer developers a semi-automated framework to collocate and execute sets of contracts based on their features, dependencies, and behavioral patterns.

These properties can be checked statically to help developers construct type-safe environmental policies on encryption, supported interfaces, economic protocols, identity, and much more.

A scalable and concurrent language for the blockchain

RChain contracts are internally concurrent. They leverage a message-passing paradigm to optimize responsiveness, offering a more dynamic and sophisticated smart contract ecosystem.

In addition to concurrency, smart contracts enjoy a number of industry-leading functions:
As a result, RChain contracts are matchless in throughput and programmability. What's more, every line of code on RChain obeys a well-tested, formal model of concurrent computation, allowing automatic formal verification for highly scalable contracts.

Correct-by-construction is a software engineering approach whereby each step of software development strives to assure a reasoned progression from a correct model and framework toward the executable code. Since the contract language and its VM are built from the formal specifications of provable mathematics, and since the compiler pipeline and engineering approach is correct by construction, we expect the platform will be regarded as trustworthy.

Developer Tools: We are currently developing a complete set of RhoLang developer tools and expect to launch them within three months after the launch of Mercury. These tools will include blockchain based pipelines for compiler optimization and other key solutions (SAT solvers, simplex, etc.), as well as relationships with IntelliJ, Eclipse Foundation, and other major tool vendors.

LADL: On the forefront and something we believe at RChain, that will be a game-changer, is our use of LADL = Logic as a Distributive Law. It is a form of compression (more throughput), could have prevented the DAO bug, can generate type systems for un-typed languages and that barely scratches the surface of the scope of the application of the LADL algorithm.

Because of the broad scope of this application, the Co-op fundamentally believes this algorithm belongs in the public domain and the algorithm is part of the intellectual property commons that the Co-op is set up to protect for the community.

This is a huge differentiator and deserves far more detail than included here.

LADL - characterizes what a logic or a type system is in terms of a mathematical formalism called category theory. The algorithm describes how a predicate or type corresponds to the computations that satisfy the predicate, this can be used as a form of compression. Predicates and types can be used to succinctly denote large or even
infinite collections of data or programs. RChain is using this aspect of LADL to get increased throughput on the blockchain. Instead of having blocks include transactions; they include rules, i.e. predicates, saying which transactions are allowed in this block. This makes it possible for a massive number of transactions to be represented by a small set of rules. These rules are expanded to the transactions they include only at the time the block is ratified by the validators.

Compression isn't the only application. It can also be used to constrain the shape of computations. For example, the LADL algorithm was used on RhoLang to generate the type system. As a result, the RhoLang types are very rich and can capture information about programs that other modern programming languages such as Haskell or Scala cannot. For example, RhoLang types can detect race conditions. This is important because when you rewrite the famously buggy DAO contract in RhoLang, the bug manifests as a race condition. The type for the contract catches this race condition and as a result the buggy contract doesn't pass the compilation step, let alone being checked into a repo and deployed.

The scope of LADL extends far beyond these applications. LADL can be used to generate type systems for famously un-typed languages, such as JavaScript. To get a sense of the cost of using JavaScript in production, each of the big three, Microsoft, Google, and Facebook, produced a typed version of the language for use in production. Each effort represented hundreds of millions of dollars. Each effort was a handcrafted design. The LADL algorithm automates the process reducing the cost to much more manageable efforts achievable by small teams in short periods of time. Further, armed with these type systems repositories of code can be searched on the basis both of how code is structured and what code does. Imagine a decentralized GitHub equipped with a search language that makes it possible to search for components on the basis of what they do. This could be applied to just-in-time linking of components, service discovery, and many other elements of smart contract and software assembly more generally.

System Architecture

The complete architecture can be found here: Architecture Document
10. Private Token Sale

The Co-op board has authorized a private token sale to fund the continued development of the RChain Platform. These tokens will be ERC20 tokens; called RHOC. Upon the launch of the RChain blockchain they will be converted to another token called REV. These tokens convert on a 1:1 basis, and used to operate on the RChain platform as a native staking token.

Why a private token sale? It’s an effort by the Co-op Board to attract early adopters, developers, industry leaders and evangelists to the project. The private token sale proceeds will be used for the operation of the co-op and development of the platform. In the current ICO market companies are raising millions of dollars on very thin plans thus attracting a lot of crypto currency speculators and manipulators. Holding a private token sale to a small group of active supporters/developers that have been prequalified is best for the long term health of the RChain community.

Is an ICO coming? RChain may consider an "Initial Coin Offering" as the launch of Mercury approaches. If the board/membership decides to proceed with an ICO it would be fully executed on the RChain platform using an RChain wallet and smart contract.

Private Token Sale Detail

RHOC: The name of the individual token for sale from RChain Co-op.

The purchasers of RHOC are called “Participants”. IMPORTANT NOTE: This is NOT an investment into a security it is the purchase of an asset.

There are 750,528,767 RHOC in the Co-op's inventory as of August 3rd, 2017.

RHOC price: $.20 per token (RHOC)
Sale date: Begins Tuesday, August 29, 2017 at 8AM PDT. Closes on Thursday September 28th, 2017 at 5:00PM PDT.

Amount of raise: $10,000,000 USD, with a max total raise of $15,000,000 USD.

Who can purchase: Accredited participants (if USA based) no accreditation necessary if you are not a resident or legal citizen of the USA. KYC form is required to be filled out by all participants – all nationalities.

Purchase amount: Minimum participation of $50,000 USD, no maximum amount.

Purchase discount: Discount of 10% if purchasing $100,000 or more in RHOC. If purchasing $1,000,000 or more of RHOC a discount of 15% will be applied. (i.e. – with a $200,000 purchase you will receive $220,000 worth of RHOC, a $1,000,000 purchase you would receive $1,150,000 worth of RHOC.)

Requirements: To purchase RHOC one must first join the RChain Co-op with the purchase of a membership. The membership is priced at $20.

Participants will be required to engage with the RChain project by doing some type of action. Examples could be to: stand up a node, become a validator, promote RChain Co-op via social media, introduce developers or evangelizers. There is a check-list of various “actions” one can take on the participation validation and purchase agreement.

Currency: Accepted currencies for the purchase of RHOC are: BTC, ETH, and USD.
11) Use of Proceeds

Currently the RChain Co-op has a small group of dedicated developers, managers as well as contractors working on various components of the platform. It will be critical to reach our first fundraising goal so we can build out our team and continue our journey to the launch of Mercury thus ensuring we reach our goals.

We intend to use the net proceeds of the private sale as detailed below. The following allocation of the funds shown in the table below is based on the company’s present operating plan and its estimates of many factors, including general economic and industry conditions and the company’s future revenues and expenditures. If these factors change or actual circumstances differ from those estimated or expected, the company reserves the right to use portions of the proceeds for other purposes:

There are two scenarios via this Private Token Sale. The minimum is a raise of $10,000,000 the stretch goal is $15,000,000.

<table>
<thead>
<tr>
<th>Description</th>
<th>10M Minimum</th>
<th>15M Maximum</th>
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<tbody>
<tr>
<td>General Administration and Operations</td>
<td>$1,100,000</td>
<td>$1,100,000</td>
</tr>
<tr>
<td>Deploy Dev. Team to complete and launch Mercury (1)</td>
<td>$5,300,000</td>
<td>$7,300,000</td>
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<tr>
<td>Deploy Dev. Team to develop Dev. Tools (2)</td>
<td>$1,300,000</td>
<td>$1,800,000</td>
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<tr>
<td>Marketing and sales (3)</td>
<td>$1,000,000</td>
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<tr>
<td>Computer Equipment and Cloud Services (4)</td>
<td>$300,000</td>
<td>$300,000</td>
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<tr>
<td>Support the Dev. of Key dApps to operate on RChain Blockchain (5)</td>
<td>$500,000</td>
<td>$2,500,000</td>
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<tr>
<td>Community Adoption and Support (6)</td>
<td>$500,000</td>
<td>$500,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$10,000,000</strong></td>
<td><strong>$15,000,000</strong></td>
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1) Deploy Dev. Team to complete and launch of Mercury on the RChain Blockchain. All though the development of the RChain platform is well underway having sufficient financial resources to add to our current development team is critical to achieving our milestones and the successful launch of Mercury – which will happen in approximately 12 months (end of Q3 2018). During this phase RChain will deploy a significant amount of non-FTE developers to better manage our near term costs. We have already started working with key development contractors and expect to significantly expand those relationships.

2) Deploy Dev. team to develop a tool-kit, these development tools will assist all RChain blockchain developers to develop dApps to run on the RChain blockchain. Having a suite of highly useful and essential dev. tools will encourage developers to adopt.

3) Sales and Marketing; grass roots sales and awareness with strong focus on the community adoption, development dApps, attracting enterprise clients and encouraging our members to actively participate and innovate. Implement a industry specific media based awareness campaign.

4) Cost associated with building out a development team to scale with the size and scope of the RChain project.

5) Supporting the dApp development community, having dApps running on the RChain immediately upon launch of Mercury is critical to our success. We intend to assist in the incubation and to provide seed capital for the development of a suite of key dApps.

6) Critical to the success of RChain Co-op is the adoption and support of the greater blockchain community. An aggressive and continual campaign to attract new members, encourage participation and innovation within the community will be key ingredients to our success.

The amount of the actual expenditures will depend upon numerous factors. The foregoing discussion represents the best estimate of the allocation of the net proceeds of the offering based upon RChain Co-op’s current plans and estimates regarding anticipated capital expenditures. Actual expenditures may vary substantially from these estimates, and we it may be necessary or advisable to reallocate the net proceeds within the above-described uses or for other purposes.
12. Development Timeline
This timeline is for informational purposes only; we’ve done our best to provide accurate estimates which may be subject to change.

<table>
<thead>
<tr>
<th>Technology Timeline</th>
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<tbody>
<tr>
<td>Q4 2017</td>
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<tr>
<td>Q1 2018</td>
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<tr>
<td>Q2 2018</td>
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<td>Sept. 2018</td>
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Appendix A

RChain Architecture

Authors: Ed Eykholt, Lucius Meredith, Joseph Denman