



Dragonchain Commercial Platform
Version 6
September 2017
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Background

Dragonchain was originally developed at Disney's Seattle office in 2015 and 2016 as the *Disney Private Blockchain Platform*. Over 20 use cases and applications¹ were explored and documented publicly via the W3C Blockchain Community Group². The platform was later released as open source software under the Apache 2 license in October of 2016.

Dragonchain simplifies the integration of real business applications onto a blockchain and provides features such as easy integration, protection of business data and operations, currency agnosticism, and multi-currency support.

The Dragonchain Foundation, a Non-Profit Corporation was created in January of 2017 to maintain ownership and responsibility of the open source code.

The Dragonchain team is now in the process of launching a commercial entity to build a serverless architecture blockchain platform, and an incubator. The combination of serverless and blockchain technologies is unique and tremendously valuable. The timing of the Dragonchain platform launch is highly strategic to benefit from explosive growth of cloud computing over the last few years and the emerging wave of Blockchain solutions entering proof of concept stage across enterprises.

Vision

The Dragonchain team will launch Dragonchain, Inc., as a commercial entity to provide an array of products and services to the community. Our vision supports areas of the market that are underserved with strong demand and projected growth in the blockchain industry (\$7.7b by 2024³) across an array of multi-billion dollar sectors such as Arts, Wine, Automotive, Legal, Digital Marketing, etc. These sectors and more will experience market disruption with blockchain

¹ W3C - Disney Dragonchain - Blockchain Use Cases - <https://dragonchain.github.io/blockchain-use-cases>

² W3C Blockchain Community Group - <https://www.w3.org/community/blockchain/>

³ Grand View Research <http://www.grandviewresearch.com/press-release/global-blockchain-technology-market>

capabilities shifting the value proposition into decentralized environments. Dragonchain platform will support these needs.

A Turnkey Blockchain Platform for Business

Dragonchain provides a commercial platform for application developers to rapidly and securely deploy Blockchain applications while maintaining existing language development environments (e.g. Java, Python, Node, C#, Go); **a tremendous costing and speed to market advantage**. The Dragonchain architecture is also designed to allow nodes to handle approval of transactions based upon **five levels of network consensus** to provide a spectrum of trust to data consumers; a level of security and flexibility unseen in the market by current blockchain solution providers. **These design attributes position Dragonchain for exponential growth.**

- Serverless system and smart contracts
- Established language support for smart contracts (Java, Python, Node, C#, Go, etc.)
- Scalable - Amazon AWS and Google deployments
- Secure - Protection of business data and operations
- Advanced currency implementations
- Smart contract libraries
- Currency Agnostic

Benefits

- Lower development cost utilizing existing development languages
- Faster speed to market
- Significantly higher levels of security
- Higher scalability

DragonFund Incubator

Dragonchain will provide project incubation as well as professional services with strategic partnerships to develop successful tokenization ecosystems focusing on long term value. This includes;

- Standard processes for the incubation of blockchain startups and new integrations
- Marketplace dashboard for community engagement to monitor and compare projects
- Direct access to **legal, technical, marketing, and economic subject matter experts** as partners for advice and support
- Dragonchain platform team to model digital economics aligned with token model; business design, user acquisition and retention, lifetime value, creation of network effects, monetization models, data strategy, and KPI's.
- Expedited launch cycles
- Sustainable token marketplaces

Problem

Security on a Blockchain Platform

Data exposure and security is a known issue to large institutions wanting to leverage blockchain technology, as they typically have very sensitive customer data that sometimes has regulatory or legal risks associated (e.g. banking, health, identity, etc.). The data exposure risk can be somewhat alleviated by either obfuscation or separation, however, in both cases, this requires extra design and development work up front, as well as reduces somewhat the utility of the blockchain system itself.

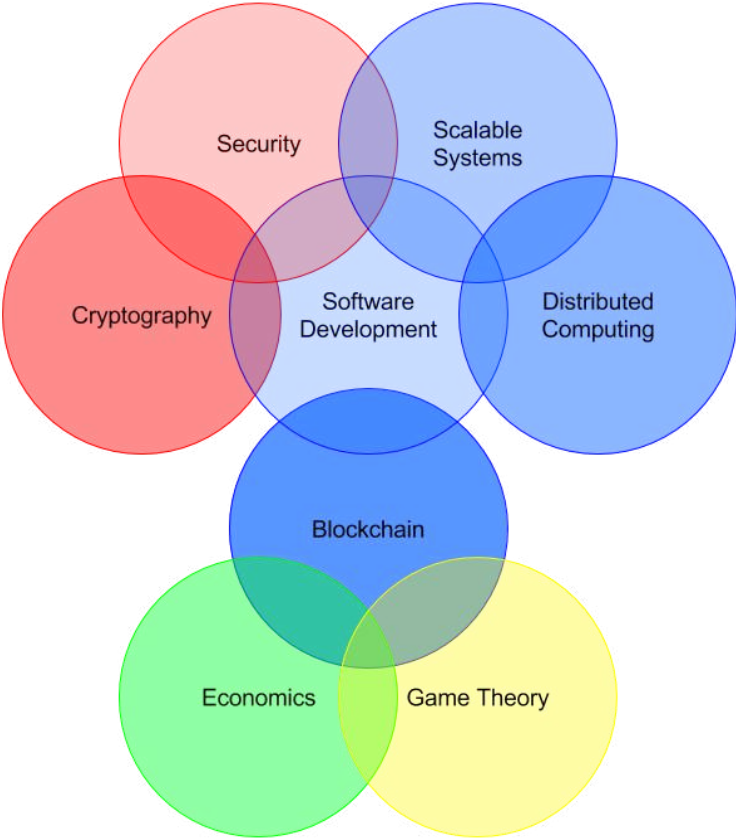
A so far generally unrecognized risk in the use of blockchain technology is that associated with the public exposure of smart contract logic as necessary on most blockchain platforms. The smart contract is exposed and transparent which means that the team must implement very sensitive proprietary business logic in a separate system. Also, any obfuscated data may be unraveled by an interested viewer of transactions.

Most important however is the combined risk of exposed data and business logic, as it is the equivalent of placing your operational system, all of your data, and a bounty of funds in the public domain. Unlike the well understood and successful open source model, where the discoverer of a flaw or vulnerability in utility software is incentivized to fix the issue or notify the community of its existence, in the case of a discovered vulnerability on a blockchain, the discoverer is actually incentivized to attack the smart contract and withdraw funds or valuable information.

Skill Set Challenge

Leveraging blockchain technology for real business initiatives is expensive and very risky in an operational environment. This can be expected to result in low success rates as creation of software without blockchain technology is already fraught with difficulty and the addition of a relatively new technology such as blockchain with features such as cryptography, Proof of work, economics, currency modeling, game theory, and custom programming languages is sure to cause more trouble for a team as the overlap of these skills is particularly rare.

Dragonchain solves this problem by allowing development and integration before the economic model is known. Monetization can be applied after a system is functioning and enough real data is available for analysis.



Solution & Business Focus

When Dragonchain was originally launched, the team had several goals in mind based upon past experience developing blockchain solutions:

- Protection of Business Data and Processes
- Ease of Integration
- Simplified Development
- RESTful Interfaces
- Simple Architecture
- Short, Fixed Length Block Time
- No Base Currency
- Currency Agnostic with Multi-Currency Support
- Interoperability with other Blockchains
- Adoption of Standards

The platform was designed for use in a wide variety of use cases and applications. It is particularly useful in non-financial systems and in monetization and modeling of micro-economies for example to replace political economies within an organization with transparent rules to incentivize productive or otherwise valued behavior.

Verification and Consensus

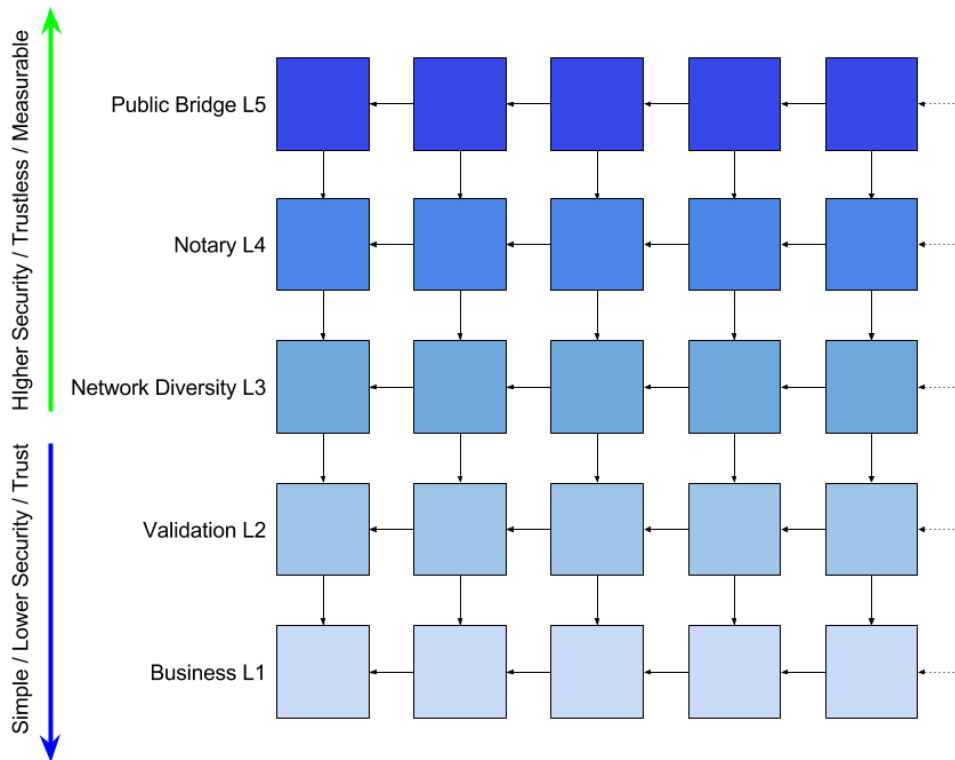
In the open source Dragonchain Architecture document⁴, we introduced the concept of "context based verification" wherein Dragonchain adds another dimension to the common blockchain model. This new structure may be best thought of as a "blockchain of blockchains," where business nodes handle approval of transactions based upon local and sometimes proprietary business logic.

The Dragonchain architecture provides **five standardized levels of consensus** to provide a spectrum of trust to consumers of data;

1. Business (Approval) Verification
2. Enterprise (Validation) Verification
3. Network Diversity Verification
4. External Partner (Notary) Verification
5. Public Checkpoint Verification

⁴ Dragonchain Architecture - <https://dragonchain.github.io/architecture>

As the verification level increases for a block, security increases, risk decreases, and measure of risk becomes possible.



Level 1 Business Verification (Approval)

Analogous to other blockchain systems, the business context provides localized approval of transactions and operates primarily on a trust basis. Although a proof algorithm can be applied, it is not necessary as data approved at this level can be considered trusted by the team that owns the data and any other team that decides to trust that data. This may best be viewed as web services on a blockchain, where developers familiar with web services or similar traditional services development may productively leverage blockchain technology.

Use of this model has been shown to improve the blockchain technology learning curve, as well as lower the risk of decentralized system development. A team can build atop the Dragonchain system to integrate existing systems or add new capabilities without a full understanding of the economic modeling that may later become valuable. That is, many projects have seen value by starting with data transparency as a goal, followed by late binding to an economic model based upon historical evidence.

Note that any data contained in the business defined payload of a transaction will not move across the network unless explicitly authorized by the owner of a node(s).

Level 2 Enterprise Verification (Validation)

This context is defined Enterprise or network wide, and checks for block and individual transaction validity in form, signature, and required data elements. This can be considered as providing “Real-time Enterprise Governance” with rules defined at the Enterprise level for validation of all transactions regardless of the local business data.

Level 3 Network Diversity Verification

A Level 3 node will verify diversity of validation (Level 2) verifications. This verification context will ensure that validations of transactions are coming from a sufficiently diverse set of distributed sources. It also provides control and measurement of network effect and provides distributed security as an attacker would be required to attack multiple systems, businesses, and data centers in order to tamper with existing data.

Level 4 External Partner Verification (Notary)

A level 4 node will provide a notary functionality to the consensus process. Hosted by an external partner, a level 4 node cryptographically signs any level 3 verification records that it receives. This function allows the Level 4 node to act as an independent witness to level 3 verifications.

Level 5 Public Verification (Public Checkpoint)

A Level 5 node will provide a bridge to one or more public blockchains and allow clients to interact with them (e.g. Bitcoin, Ethereum, Litecoin, etc.).

With this, Dragonchain is able to provide a spectrum of trust for the consumer of blockchain data, where risk is accepted based upon a combination of real world contracts, reputation of nodes, and trustless system assertions. That is, one may trust one’s own data as valid, but require varying levels of consensus verification before accepting a partner or foreign node for use. The system will provide a human readable report as well as API access to this capability.

Currency

Dragonchain is intentionally “currency agnostic”. That is, the architecture defines the ability to create a blockchain without currency, or with one or more currencies in place. We’ve experimented with and expect to make available interesting currency features.

See the Dragonchain open source architecture document for a full description of the currency architecture.

Serverless Deployment

With the commercial launch of Dragonchain, Inc., we are leveraging the architecture of the Dragonchain platform to provide a serverless blockchain platform for business use. Dragonchain's hybrid model allows a serverless approach, because the smart contracts are executed in a traditional model and on a trusted node. A team can productively use the talents of a traditional software engineer, along with best practices devops to build a system, whilst leveraging the capabilities of blockchain technology.

We will initially launch on Amazon AWS, with the entire system using AWS Lambda services, and with all user provisioned smart contracts deployed as Lambda services. Deployment in this manner will provide to the user the full scaling capacity of the AWS platform as well as all available services. In the future, we expect to port the system for deployment to Google App Engine and Apache OpenWhisk for internal datacenter deployment.

Availability of Established Languages

With this arrangement, and due to the abstraction of trust provided by the Dragonchain architecture, the user has access to multiple full languages as supported by AWS⁵:

- Python
- Java
- Node.js
- C#

These languages are consistently ranked in the top 10 for usage in the real world in such surveys and studies as *Redmonk Programming Language Ratings*⁶, *Stack Overflow Developer Survey*⁷, *Github Language Trends*⁸, and *PYPL Programming Language Popularity Index*⁹. Availability of popular, established, and well understood languages for safe and secure use on a blockchain is a valuable capability in convenience and risk to the team and for adoption of the Dragonchain platform. Millions of active developers currently code fluently in one or more of these languages and Dragonchain will provide an easy path for these developers toward the use of blockchain technology.

Dragon Tokens

Dragon tokens (AKA Dragons) represent a tokenized license for interaction with Dragonchain commercial platform services. The tokens will be issued and provided to the public via an open

⁵ AWS Lambda FAQs - <https://aws.amazon.com/lambda/faqs/>

⁶ Redmonk Programming Language Ratings - <http://redmonk.com/sograde/2017/03/17/language-rankings-1-17/>

⁷ Stack Overflow Developer Survey 2017 - <https://insights.stackoverflow.com/survey/2017#technology>

⁸ The State of the Octoverse 2016 - <https://octoverse.github.com/>

⁹ PYPL Programming Language Popularity Index - <http://pypl.github.io/PYPL.html>

sale in 2017. For more information, check the official token sale page: <https://dragonchain.com/tokensale>.

Utility

Dragons will be used by developers and organizations to interact with the Dragonchain commercial platform products and services (e.g. launch nodes, provision smart contracts, access incubator dashboard, etc.). As a tokenized license with value in utility service rights, the tokens will further allow individuals or organization to be rewarded in an open market for running public or private nodes for network consensus.

Dragons will also be used to support projects in the DragonFund Incubator. They will provide early access to technology and data from the projects, as well as allow first access to purchase tokens for use on the developed platforms.

For the Dragonchain Foundation, the maintainer of the Dragonchain open source code, Dragons will be used to reward and incentivize developers contributing to the open source project and related projects. The tokens will be used to increase adoption in the developer community with rewards and training. Community members will be able to contribute on issues and designs, and reward active participation in the development of important functionality anywhere in the world.

Team

[Joe Roets](#) - CEO / Principal Architect / Vision

Dragonchain Foundation, Disney, Lockheed Martin, FBI, DoD, Symbiont, Overstock : 25+ Years Software Development Design and Architecture.

[George Sarhanis](#) - Chief Business Officer / Business Strategist / Partnering

Dragonchain Foundation, Digital Ventures Group, Big Fish Games, Sega of America, Googlet : 17+ Years Business Management, Strategy, Finance, Partnerships

[Brandon Kite](#) - Lead Developer - Open Source

Dragonchain Foundation, Disney

[Dylan Yelton](#) - Developer

Dragonchain Foundation, Disney

[Alex Benedetto](#) - Developer

Dragonchain Foundation, Disney

[Chin-One Chan](#) - Marketing Manager Asia / Evangelist

Microsoft Corporation, Buzz Bee Marketing, 8ninths, Accessor Capital, Potomac Capital

[Sabrina Gasson](#) - Marketing Manager Europe / Evangelist

Kuju Entertainment, Testronic Labs, Konami Digital, Big Fish Games

[Mike Grabham](#) - Incubation Lead

Start-up Grind NW Chapter Director, Start-IT TV Host, Founder of multiple successful start-ups

[Chelsea Anderson](#) - General Counsel

GSB Law, Seattle WA US

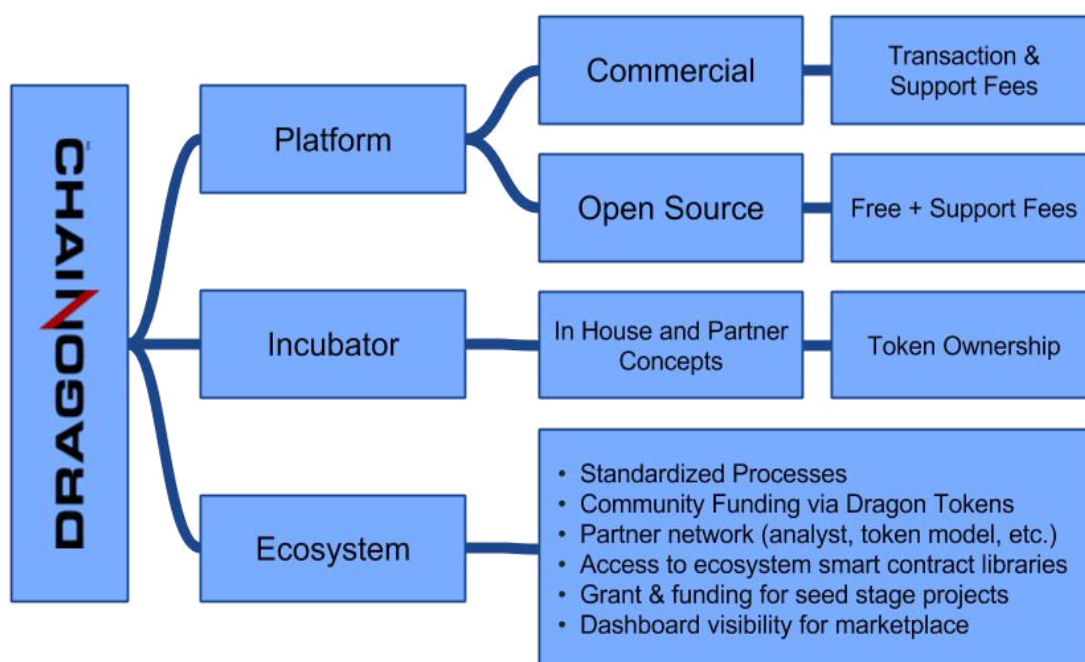
[Scott Warner](#) - IP Attorney

GSB Law, Seattle WA US

Go To Market Strategy

Dragonchain will penetrate the market through developer relations, corporate sales, and start-up services ranging from advisory to financing to development. To achieve this, the team and go to market protocols are assigned across a geographic emphasis with market managers across 3 separate regions; Asia, USA, Europe. The role of the market manager is primarily concerned with localization issues and second the specific market tailored offerings.

The nucleus of Dragonchain's growth will stem from a blend of technology and incubation services. The technology model is similar to Amazon's AWS model, and the incubation model is similar to Y-Combinator. Both highly prominent organizations that are deep rooted with community and market success.



Professional Services

Dragonchain will provide two levels of professional services, those offered by company staff and those provided by qualified preferred vendors. This will be for the purpose of helping new offerings into the world of blockchain and token offerings to successfully launch that allow for value creation, operational flexibility, and competitive advantage.

Services will span across legal, strategic, marketing, development, and finance. Assigning preferred vendors will allow Dragonchain to reach and support an international audience.

Incubator

Incubator & Fund : DragonFund works with companies to help them identify how blockchain technology and smart contracts can advance their mission, and in select cases to build-out token marketplace environments that will build and increase long term value. Dragonchain will benefit from licensing fees and token ownership. We will also provide access to strategic resources to advance an incubated project.

Projects Under Incubation

Look Lateral - Liquid Art

Blockchain based arts Provenance and Liquid marketplace. Provides market based Provenance in advance of a service to securitize rare assets for a liquid market.

Website: <http://www.looklateral.com>

Location: Mantova, Italy & San Francisco, USA

Seed2You

Company in the cannabis sector that has commissioned Dragonchain with building out a suite of smart contract applications to support the state laws in tandem with operator needs and finance from banking and private financiers. Initially for Washington state, and then for all 9 states that have legalized industry.

Website: <http://seed2you.biz/index.html>

Location: Seattle, WA

LifeID

lifeID is developing a blockchain-based open identity platform that allows users to manage a digital identity and how it can be used to interact with both the digital and physical world, all without relying on the oversight or control of a large social network, company, or government. Identities on this blockchain are created and managed via a system of smart contracts on a permissionless blockchain that will be governed by identity holders. This means anyone can

create one digital identity to use for his/her entire life and everything in it. Using this blockchain and a biometric-capable smartphone app such as lifeID for iOS, users can safely and securely identify themselves, taking the place of a login and password online or a card key in the physical world, all while giving the user complete control over his/her privacy.

The team at lifeID is investigating the use of Dragonchain's tokenized micro-license for the software that bridges the lifeID blockchain with the Web 2.0 applications that will use it.

Website: <https://lifeid.io/>

Location: Bellevue, WA

IDPay

Existing company providing solutions for Government Treasury, including Budget optimization, Payroll, and Social funds optimization. The Costa Rican Government Treasury, has been using the software for 8 years, and saved hundreds of millions of dollars. Project will build on existing product onto Dragonchain platform.

Location: San Jose, Costa Rica.

ClevX

An intellectual development and licensing firm focused in the area of security offerings.

Maintains a strong dominance in government accounts through value-added resellers for their FIPS Level 3 authentication designs.

Website: <http://www.clevx.com>

Location: Kirkland WA USA

Legal

A Dragon token represents a tokenized license for interaction with Dragonchain commercial platform services. A Dragon token does not represent ownership or equity in any company and as such should not be considered for potential increase in value, but rather for its utility value as described in the Dragonchain White Paper.

Location: US based sale

Legal Representation by [GSB Law](#)

See [token sale page](#) for detailed information.

Contact Information & References

Telegram: [Announcements Channel](#) & [Discussion Group](#)

General Inquiries: info@dragonchain.com

Token sale questions: tokensale@dragonchain.com

Technical Support: support@dragonchain.org

Press Inquiries: press@dragonchain.com

Twitter: [@dragonchaingang](#)

Dragonchain Foundation - <https://dragonchain.github.io/>

Dragonchain Architecture - <https://dragonchain.github.io/architecture>

Blockchain Use Cases Document - <https://dragonchain.github.io/blockchain-use-cases>

Dragonchain Github - <https://github.com/dragonchain/dragonchain>

News Articles - <https://dragonchain.github.io/blog/>