

# FARMATRUST

SAVING LIVES | CREATING EFFICIENCIES

## WHITEPAPER | v2.0

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# Summary

FarmaTrust is developing a fast, scalable, and secure blockchain solution that automates end-to-end tracking of medicinal products throughout the pharmaceutical supply chain. By harnessing the growing efficiency of big data, machine learning, blockchain technology and intelligent workflow processing, FarmaTrust both accurately and securely records data relating to serialised packages as they pass through each point in the supply chain lifecycle, in accordance with track and trace regulatory requirements.

“Fraudulent drugs harm or kill millions around the world and inflict serious damage on the brand names and bottom lines of major pharmaceutical manufacturers.” (PWC Study) Pharmaceutical companies and government programmes that provide subsidised medicines are also losing significant revenues and incurring increased costs from counterfeit drugs, returns fraud and the regulatory burden from reporting and compliance.

The FarmaTrust Zoi system helps minimise the cost and resources required to comply with track and trace regulations. In addition, the FarmaTrust system integrates with existing enterprise software solutions, reducing the disruption to business operations and system changes in order to comply with track and trace reporting requirements. Ultimately, the FarmaTrust solution provides a cost-effective and comprehensive option for pharmaceutical companies, supply chain operators and retailers to verify and track genuine products across the lifecycle, down to the individual packet level. FarmaTrust’s Zoi platform not only has pharmaceutical companies as clients, but also includes Ministries of Health, governmental / regulatory bodies, NGOs and law enforcements as its customers. The end users get a free-to-use app.

## Overview

According to a recent PWC report (<https://www.strategyand.pwc.com/reports/counterfeit-pharmaceuticals>), up to 30% of all drugs in circulation are fake, leading to up to a million deaths annually, including 450,000 preventable deaths from malaria alone. Some of these deaths can be attributed directly to the toxic ingredients (such as rat poison, floor wax, industrial chemicals and the like) used to produce counterfeit drugs. Many more are a result of substandard drugs being sold to unsuspecting consumers, with little to no active ingredients present in drugs, which would otherwise have saved the consumers from preventable or curable diseases.

Although less developed markets have long been their stronghold, pharmaceutical counterfeiters are now using digital channels to penetrate developed countries, where traditional physical drug distribution networks are well protected. Exacerbating this issue, the PMMI’s 2016 Brand Protection and Product Traceability report found that “medicines bought over the internet that conceal their physical address are counterfeit in more than half of cases. The reasons that proliferate online sales are mainly due to consumers not being able to afford to visit a doctor or get medicine from a pharmacy.”

Despite the efforts of the pharmaceutical industry, major challenges remain. Such issues related to pharmaceutical products include the differing legislations across jurisdictional borders, compliance thereof, and the enforcement of these rules. In Europe, Directive 2011/62/EC, also known as the Falsified Medicines Directive (FMD), is designed to fight against counterfeit medicines through serialisation and verification of individual packages. This includes important information such as:

- Manufacturer product code
- Serial Number
- National reimbursement number, if present
- Batch Number
- Expiry Date

The US Drug Supply Chain Security Act (DSCSA) specifies more detailed information related to each step of the supply chain including:

- Lot level traceability and verification for manufacturers, wholesalers, re-packagers, and outlets, such as hospitals and retailers;
- Tracking changes of ownership across product batches; and
- Tracing serialised items with full product transaction history back to the original manufacturer.

While both US and European track and trace regulations require detailed and thorough end-to-end compliance and traceability of drugs, different requirements and compliance enforcement policies across jurisdictions around the world limit effective coordination and consistent application of these requirements in a globalised cross-border supply chain.

Similarly, the plethora of legacy systems, technologies and methods used by each supply chain operator for tracking and reporting packages have, to date, prevented the effective coordination and integration required across the whole supply chain. 2D barcodes, QR codes, and a variety of different technical standards mean data is usually held in technology silos, creating opportunities for malevolent actors to easily introduce counterfeit products into the supply chain without being detected. Essentially, this fractured and broken process has meant that the current pharmaceutical supply chain is left exposed to fraud and tampering, and/or restrictively siloed.

## The FarmaTrust solution

The mission of FarmaTrust is to become the provenance system of choice for the pharmaceutical supply chain, by providing an effective and global data verification and coordination layer which enables greater transparency, efficiency, and immutability for the recording of all activities across the supply chain – from the point of manufacture to the end consumer.

FarmaTrust has developed the blockchain-based Zoi Supply Chain Information Exchange platform to securely verify and track the supply of genuine products across a diverse network of pharmaceutical brands, manufacturers, distributors and supply chain operators, providing traceability and data services to governments, law enforcement agencies, NGOs, retailers and end consumers.

FarmaTrust's Zoi provides a secure, interoperable and immutable source of data which allows for tracking of serialised products across an unbroken chain of custody throughout the supply chain. By integrating blockchain technology with big data machine learning and intelligent business logic, the Zoi system helps prevent fake and counterfeit medicines from easily entering the consumer market undetected. In addition, FarmaTrust can provide value-added services such as predictive supplies and the most efficient routes to market.

The Zoi platform is an innovative product tracking and reporting system designed to comply with industry track and trace compliance and reporting requirements. This is achieved through a secure RESTful API interface that integrates with existing supply chain management systems to securely share information about products moving through the supply chain.

The platform solves current track and trace challenges by creating a unique digital token to reference every Serialized Product Key from point of manufacture to point of sale or return. Zoi utilises blockchain technology to capture and create an immutable record of product data across multiple differing supply chain systems, ensuring transparency and compliance at each stage. The scalability of Zoi platform is designed to handle millions of transactions using various techniques such as caching, data sharing, multi-processing, horizontal scaling, high capacity servers and with utilisation of side-chains where applicable without compromising performance and security. We will ensure that sensitive data will be encrypted and only decrypted by the owner of the data via secret seed provided. We have a solution based on multi-sig transaction model. We will use side-chain, permissioned blockchain which will provide full control of data to the stakeholders and with dedicated servers hosted on highly secured network to communicate with the blockchain peer-to-peer network.

FarmaTrust works with all parties in the supply chain to securely connect and streamline the sharing of data, minimising the cost and risk associated with building new and complex systems in order to meet track and trace regulatory requirements. The entirety of this system provides safe, secure, encrypted and immutable data for all parties in the supply chain (from pharmaceutical companies, to manufacturers, logistics and supply, governments, regulators, law enforcement) and most importantly, the end consumers.

# FarmaTrust Product Features and Benefits

## Supply Chain Data Automation

FarmaTrust has developed a neutral, inter-operable, and secure data exchange system that is scalable, flexible and modular. The technical architecture uses RESTful API calls to coordinate data communication across existing Supply Chain Management Systems (SCMS) and the Zoi information exchange network. This enables both synchronous and asynchronous data connectivity across different organisations and handles the complex task of coordinating systems in the pharmaceutical supply chain, removing the need for system harmonisation.

The smart contract ability of the blockchain that FarmaTrust is currently using allows the automating of some pharmaceutical process capabilities and thereby gives our customers greater efficiencies. FarmaTrust has the ability to automate payment processes, regulatory reportings, as well as audit trail requirements within and between companies and as imposed by law. Such services will be developed on an on-going basis and through customisation.

## Smart Contracts and Intelligent Processing

Leveraging the capabilities of the Ethereum blockchain network, FarmaTrust partners with pharmaceutical companies, government agencies and law enforcement to develop robust and intelligent data processes that meet the track and trace compliance requirements. These include:

- Verifying the traceability of individual product packets, as required by track and trace regulation;
- Tracking a product's journey through the supply chain;
- Real time tracking of product ownership and chain of custody;
- Data assurance and verification across the supply chain;
- Rules-based digital workflow processing;
- Inventory monitoring and surveillance; and
- Product authentication.

## Data Security and Confidentiality

Communicating and sharing supply chain information may contain commercially sensitive or confidential product information. FarmaTrust encrypts all datasets sent across the network. In addition, zero-knowledge proof mechanisms ensure confidential and commercial data can be verified across different entities and regions without exposing the information.

## Packet Level Tracking and Traceability

Meeting track and trace regulatory requirements is difficult in a globalised supply chain. The DSCSA enacted in the US requires more thorough traceability of prescription drugs within the supply chain compared to the FMD within the European Union. The FarmaTrust Compliant Product (CP) tracking token is specifically designed to digitally track genuine products that have been packed with unique Serialized Product Keys. This provides packet level tracking and traceability of genuine products through its supply chain lifecycle.

## Artificial Intelligence

Using blockchain as a base, and providing the value-added services listed above, we anticipate the expansion of our services into machine learning. Currently, FarmaTrust plans to provide services which will allow pharmaceutical companies to have predictive supply level information thereby reducing waste through expired or non-use in a particular territory, improving 'just in time' supplier methodologies, and mitigating price spikes. We also anticipate using AI to find the most efficient routes to market.

# Advantages of the FarmaTrust System

## Pharmaceutical companies

- Cost effective approach to meet track and trace regulatory compliance.
- Lightweight API driven system that is simple to integrate into supply chains.
- Minimal impact or disruption to existing systems.
- Low maintenance and overhead costs required to scale the system.
- Provides data transparency across the supply chain.
- Zero-knowledge proofs mean data can be kept confidential and different pricing regimes for different customers.
- Machine learning services in respect to efficient routes to market.
- Predictive supply services in respect to providing information on which medicines to supply where, when and the required quantities.

## Supply chain companies

- Quick and cost effective to implement.
- Minimal impact and disruption to systems and processes.
- Easily integrates with existing supply chain management systems.
- Scalable, flexible, and robust enough to handle complex supply chain workflows.
- Zero-knowledge proofs mean data can be kept confidential.

## Regulators and law enforcement

- Convenient access to real time information about medicinal products in the supply chain.
- A quick and easy method to verify status of genuine pharmaceutical products.
- Streamlined digital workflow and immutable record of data history minimises risk of manual errors.
- Instant access to accurate and complete product history.

Many countries now have regulators which monitor the pharmaceutical industry. This includes ensuring pharmaceutical companies meeting minimum standards as well as having stringent reporting requirements. FarmaTrust provides Regulators a data dashboard with an overview of the operations of the pharmaceutical companies, their drugs, and activities in the territories that they manage and further ensure that they are compliant with such regulations.

## Governments / Ministries of Health

- Provides holistic view of medicines within the territory.
- Accurate and easy access to where state subsidies are being spent.
- Allows for financial and/or budget forecasting.
- Allows accountability of governmental bodies, spending and waste.
- Provides significant transparency in respect to State finances in healthcare.

In many countries, drugs are subsidised by the the government through tax payers. This national subsidised system requires that public finances are auditable and spend efficiently. FarmaTrust gives governmental organisations complete visibility across their territories, thereby allowing for future planning, budgeting and use of funds, as well as waste, through expired drugs or “leakage”.

## Retailers and consumers

- Confidence in the genuine source of pharmaceuticals.
- Increase confidence in purchasing online medicines.
- Reduced risk of purchasing fake or counterfeit products.
- Ability to quickly verify genuine products.

# FarmaTrust Token Model

## FTT Tokens

FarmaTrust will issue FTT tokens (an ERC20 standard token). The FTT token is the publicly tradable digital asset that allows all users to access and participate in the Zoi ecosystem.

## ZOI Tokens

- FTT token holders can stake their FTT tokens to receive ZOI tokens, utility tokens used to fuel transactions and payments on the Zoi platform.
- 500 ZOI tokens are generated every 7 days when 100 FTT tokens are staked.
- ZOI tokens allow account holders, pharmaceutical companies, supply chain companies, government, NGOs and law enforcement entities, and end users to access information of products generated on the Zoi platform.
- ZOI tokens are only available to use on the Zoi platform, and can be bought and sold on the FarmaTrust Zoi Exchange.
- ZOI tokens are burnt when used on the platform.

## Compliance Tracking Token

To meet track and trace regulatory requirements, pharmaceutical companies can stake 100 FTT tokens to generate a batch\*\*\* of Compliance Tracking tokens. Pharmaceutical companies can stake 100 FTT tokens in Compliance Tracking Token Smart Bond. Smart Bond is a smart contract that binds the FTT tokens to a new batch of Serialized Product Keys generated by a package manufacturer to meet track and trace compliance requirements. Compliance Tracking token characteristics listed below:

- Each Compliance Tracking token digitally tracks an individual product packet that has been assigned a unique Serialized Product Key through the supply chain and product lifecycle
- Compliance Tracking tokens are burnt when the packets are sold, or have been returned and destroyed
- Compliance Tracking Token data is archived on the system

Once all Compliance Tracking tokens from one batch are burnt, the Compliance Tracking Token Smart Bond releases the 100 FTT tokens originally staked, allowing the tokens to be re-used to track a new batch of packets.











NOTE: A Compliance Tracking token is not a cryptocurrency, but a digital reference of a Serialized Product Key on its own blockchain.

If pharmaceutical companies cannot acquire a sufficient number of FTT tokens (i.e. 100 FTT) to stake a batch of Compliance Tracking tokens, ZOI tokens can be purchased and burnt instead, at a 1:1 ratio. In this case, pharmaceutical companies must obtain sufficient ZOI tokens to cover a full batch.

Example: if a product batch produces 100,000 Serialized Product Keys, then 100,000 ZOI tokens must be burnt to produce 100,000 Compliance Tracking tracking tokens.

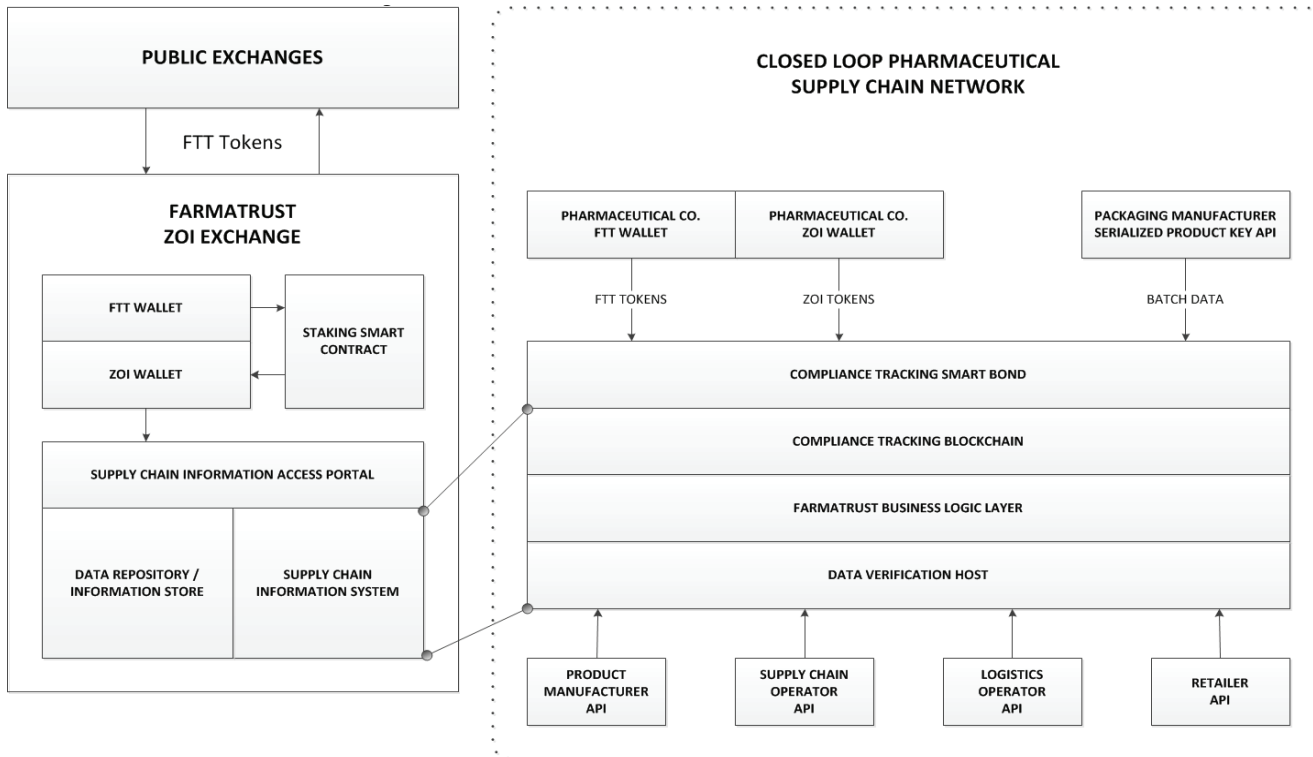
\*\*\*Batch sizes may vary across manufacturer and product lines

# How the FarmaTrust Token model works

	<p>FTT token holders create an account on the Zoi platform</p>
	<p>Token holders load FTT tokens into their Staking wallet on Zoi platform</p>
	<p>Staking wallets earn 500 ZOI tokens each 7 days for every 100 FTT tokens staked</p>
	<p>Pharmaceutical companies acquire FTT or ZOI tokens from Zoi Exchange</p>
	<p>Pharmaceutical companies stake FTT tokens to digitally pair batches of Serialized Product Keys that meet track and trace regulation</p>
	<p>Each unique Serialized Product Key is tokenized with one Compliance Tracking token</p>
	<p>Compliance Tracking tokens track product compliance across the supply chain and are burnt when packets are sold or returned</p>
	<p>Government departments, customs and law enforcement agencies use Compliance Tracking tokens to track genuine products in real time</p>
	<p>ZOI tokens are used to access and pay for data requests on the Zoi platform including reports, product audits, packet history, notifications and alerts</p>
	<p>Consumers, hospitals, NGOs and retailers can scan products and verify that a packet is genuine using the Serialized Product Key</p>



# FarmaTrust Token Ecosystem

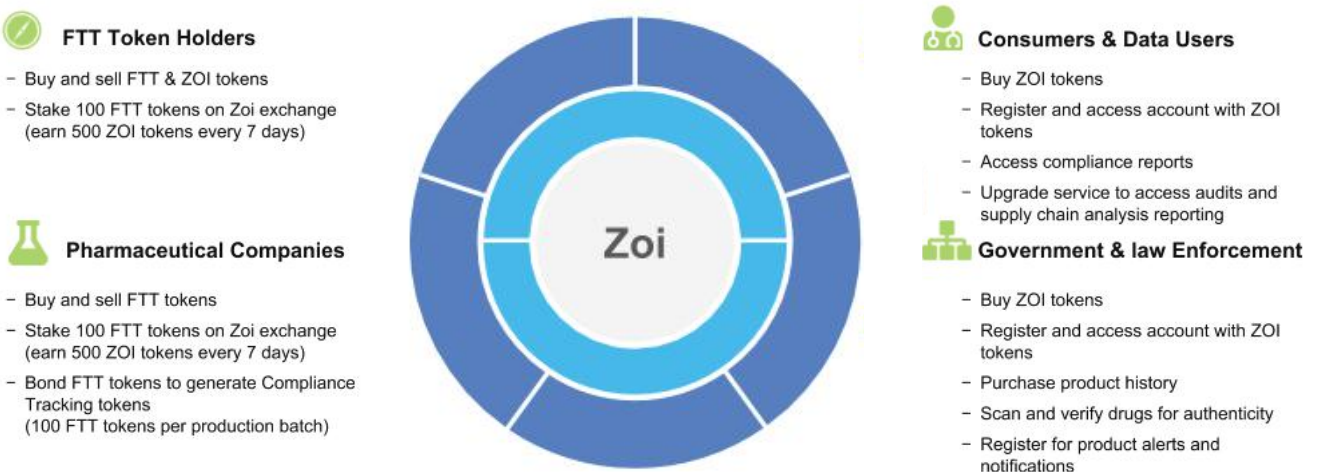


**Figure 1: FarmaTrust supply chain data interaction and verification process**

In Figure 1, FarmaTrust’s Zoi Exchange will allow pharmaceuticals and participants to buy ZOI tokens from the exchange. Once registered, users will be able to purchase FTT tokens and store them in their FTT wallet. With business rules embedded in the Staking Smart Contract, they can stake ZOI tokens and lock them in their Zoi wallet. This allows them to access our supply chain portal to reap the benefits of the Zoi platform. Initially, the Compliance Tracking tokens will be on Ethereum blockchain, but the framework will enable interoperability with other blockchains in the near future. As our business model is primarily a B2B model, it is a closed loop pharmaceutical supply chain network. Each network will be customised according to the unique business needs of the stakeholders involved, such as Manufacturer, Supply Chain Operator, Logistics Provider, and Retailer.

## Zoi Supply Chain Information Exchange Platform

The Zoi system provides pharmaceutical companies, supply chain operators and partner organisations with track and trace information that meet regulatory requirements.



**Figure 2: FarmaTrust Zoi platform token functionality**

Figure 2 explains how new customer or existing token holders can participate in the FarmaTrust ecosystem.

# Sample use case scenario - ABC Pharmaceutical Co.

ABC Pharmaceutical Co. (not a real company) is a pharmaceutical company with 3 product brands, and 20 product lines that are produced by a contract manufacturer, ACME Medical Products Ltd (also not a real company) in 4 factories in Ireland.

ABC Pharmaceutical Co. produces generic medicines for the North American, European and Asian markets, and is working with ACME Medical Products to implement a new Serialized Product Labelling system to help them meet the track and trace regulation compliance requirements from the US and Europe. ABC Pharmaceutical Co. has recently partnered with FarmaTrust to trial the Zoi Supply Chain Information Exchange platform.

FarmaTrust works with both ABC Pharmaceutical Co. and ACME Medical Products Ltd to integrate its API clients and agents onto both company's internal Supply Chain Management (SCM) systems. They also work with the downstream supply chain operators, logistics partners, hospitals and retail chains to integrate the FarmaTrust API clients into their systems.

ABC Pharmaceutical Co. runs a trial on 2 product lines in one of their factories: one product line produces 20,000 packets of generic brand aspirin tablets a week in 4 batches of 5,000 packets; the second line produces 10,000 bottles of generic brand cough syrup a week in 5 batches of 2,000.

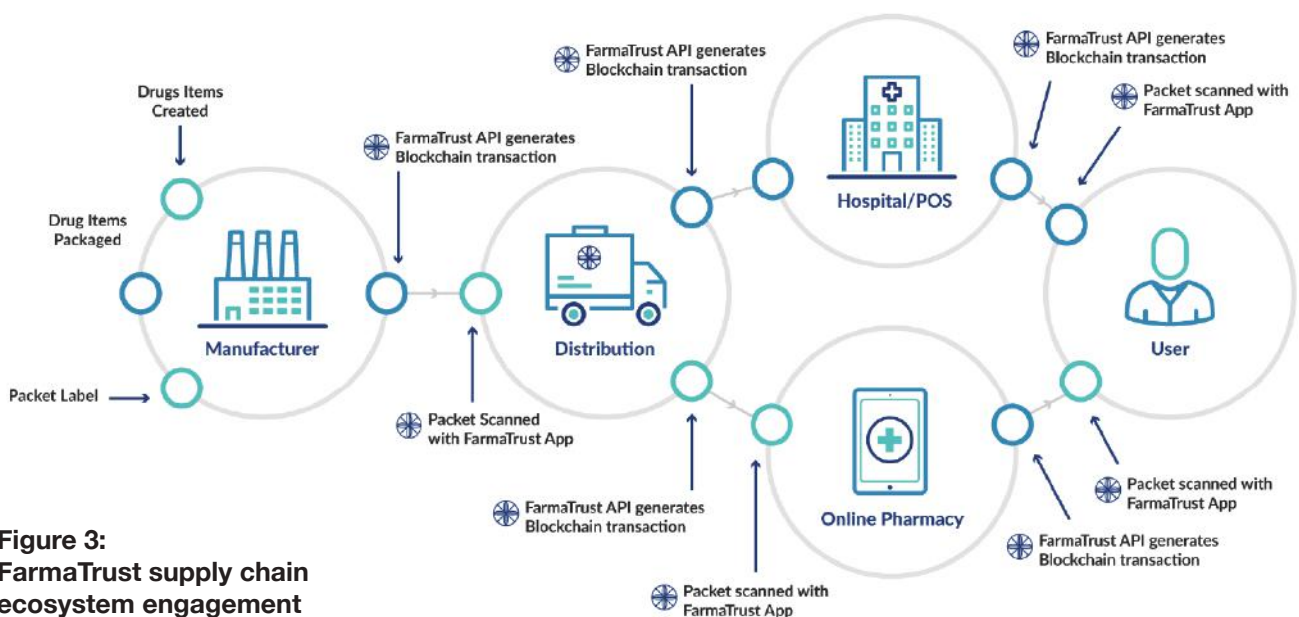
For the trial, ABC Pharmaceutical Co. buys 100,000 FTT tokens from the Zoi platform and stores them in the company FTT wallet. 100 FTT tokens are withdrawn from the FTT wallet for each batch produced and deposited into the Compliance Tracking Token Smart Bond. Each week, a total of 900 FTT tokens are bonded.

Each batch of aspirin packets requires 5,000 unique Compliance Tracking tokens, corresponding to each individual serialized packet of aspirin, while each batch of cough syrup requires 2,000 unique Compliance Tracking tokens, which correspond to each serialized bottle.

As the aspirin packets and cough medicine bottles move through the supply chain, the FarmaTrust API registers, validates and confirms the details of each exchange, tracking and matching the data from the various SCM systems as the products move from one entity to the next, and are subdivided into lots, and consignments, that ultimately get delivered to the hospitals and retailers.

Compliance Tracking tokens are updated on the blockchain with a reference to the relevant event details including Batch, Lot and Consignment information. When packets are sold by the retailer or dispensed by the hospital, or returned for disposal, the corresponding Compliance Tracking tokens are burnt.

The initial bond is released once all Compliance Tracking tokens belonging to a batch are burnt.



**Figure 3:**  
FarmaTrust supply chain ecosystem engagement

# Token Distribution Event details

**Token Name:** FarmaTrust Token  
**Token Symbol:** FTT  
**Type:** ERC20  
**Utility:** FTT  
**Total Supply:** 1,000,000,000 (1 Billion)  
**Token Sale:** 600,000,000 (600 Million)  
**Listing Price:** USD \$0.05  
**TDE Soft Cap:** USD \$7,000,000  
**Sale Hard Cap:** USD \$20,250,000

**Allocation\*:**

200,000,000 tokens - Tranche 1 (Private Sale - 40% discount)  
150,000,000 tokens - Tranche 2 (Institutional Investors - 30% discount)  
100,000,000 tokens - Tranche 3 (Pre-Sale - 20% discount)  
100,000,000 tokens - Tranche 4 (Public Sale - 0% discount)  
50,000,000 tokens - Bounty and referral program

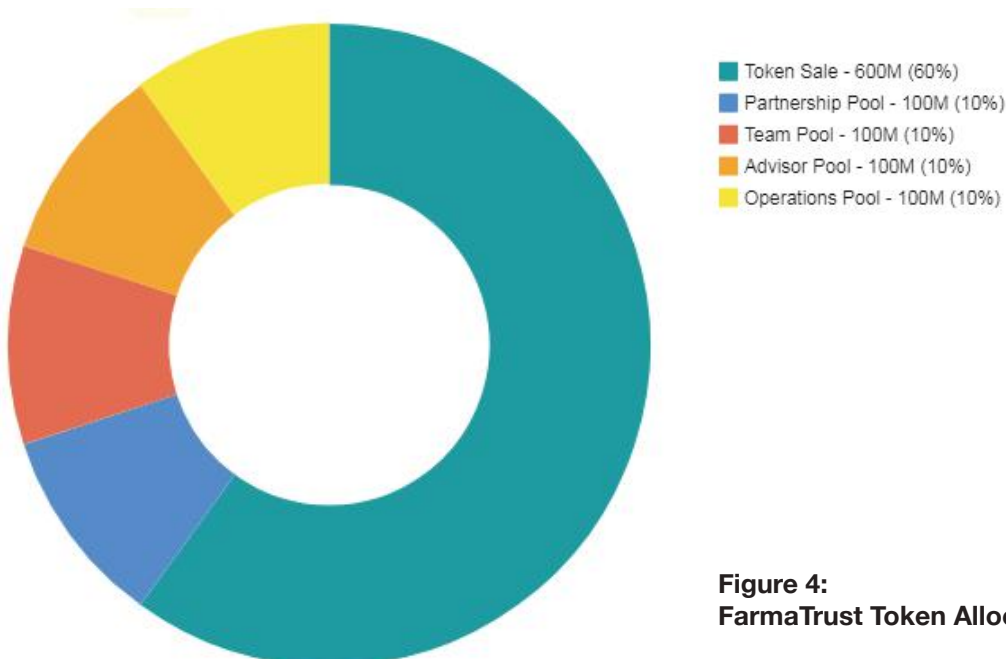
\*Any unsold FTT tokens from the TDE will be added to the Partnership pool or other pools as required by the management at their discretion.

**Partnership pool** - 100 million FTT tokens will be reserved as an incentive pool to attract partner supply chain companies and government regulators to participate on the platform.

**Team pool** - 100 million FTT tokens will be reserved for the team, which will be vested. The vesting structure will be:  
- 50 million FTT tokens will be released after 6 months.  
- The remaining 50 million released at the end of 12 months.

**Advisor pool** - 100 million FTT tokens will be reserved for Advisors. Advisor pool tokens have the same vesting structure as the Team pool.

**Operations pool** - The remaining 100 million FTT tokens will be reserved for covering operational costs.



**Figure 4:**  
**FarmaTrust Token Allocation**

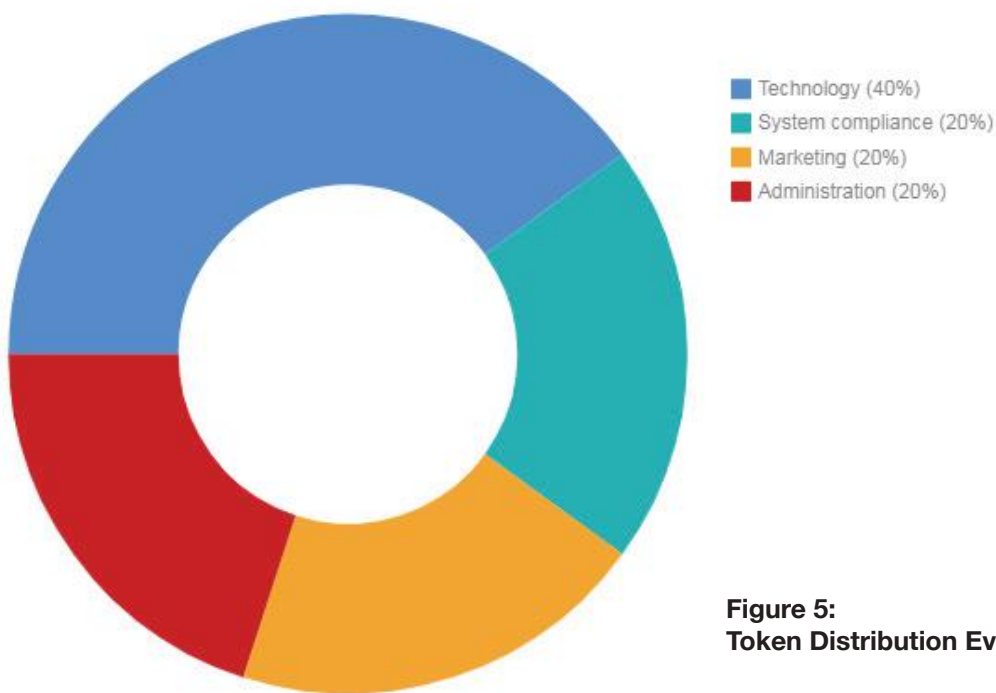
# Distribution of Proceeds

**Technology and ecosystem development** - 40% of the funds raised will be used to develop the full stack Zoi exchange network, platform and ecosystem.

**System security, auditing and compliance reporting** - 20% of the funds raised will be used to secure the communication and endpoint systems that interact with the Zoi platform, as well as develop the necessary reporting and compliance backend infrastructure, to enable near real time system reporting, auditing and compliance reporting.

**Marketing and business development** - 20% of funds raised will be used to drive marketing initiatives to raise the profile of FarmaTrust and attract participants across the global pharmaceutical and logistics supply chain.

**Legal, accounting and administration** - 20% of funds will be allocated to cover operational, legal, accounting and overhead costs associated with complying with professional.



**Figure 5:**  
Token Distribution Event Proceeds

# Business Development Strategy and Direction

FarmaTrust has already developed a functional Alpha product that is undergoing robust private testing. FarmaTrust is actively signing agreements and formal partnerships with international pharmaceutical companies, government and law enforcement organisations.

The primary focus is to develop a strong, robust and complete system that will provide a compelling compliance offering for the pharmaceutical industry and supply chain operators.

## **Strategy includes:**

1. Exploring partnership opportunities in the US and EU
2. Expanding service offerings to developing markets in Asia and Africa
3. Providing data products and services for government and law enforcement
4. Develop and deliver mobile applications and responsive client interfaces
5. Collaborate with cross-border and health industry bodies to expand service offering

# FarmaTrust Team



## **Lord Anthony St John of Bletso**

Chairman

Lord Anthony St John of Bletso is a Crossbench/Independent Member of the House of Lords, he was brought up in South Africa, where he qualified as a solicitor. After completing his Masters in Law at London University, he worked as legal counsel for Shell and then an oil analyst/specialist sales for several institutions in the City, including Merrill Lynch, focusing on Sub-Saharan African and the Far East. He is currently Chairman of Strand Hanson and Integrated Diagnostic Holdings plc and serves on the board of several public and private companies and has recently become a member of the House of Lords Ad Hoc Select Committee on Artificial Intelligence. His specialist interests are cyber security, financial services and life sciences.



## **Raja Sharif**

CEO and Founder

Raja Sharif is the Founder and CEO of FarmaTrust. He is driving the company's vision and mission of protecting the vulnerable by eliminating deadly counterfeit medications on a global scale and providing data services to the pharmaceutical industry. He is a corporate and commercial Barrister by background, having worked as General Counsel and company secretary managing legal affairs, risk and good corporate governance. He has sat on the Boards of most of the companies and was usually involved in M&A activity as well as listing Raja has managed a number of technology and media projects worldwide for some of the best known brands, including British Telecom and Al Jazeera. He established FarmaTrust after researching and developing the blockchain service.



## **Peter Bryant**

COO

As COO of FarmaTrust, Peter works on planning, coordinating and managing the company's strategic business operations. Before joining the Board of FarmaTrust, Peter has successfully created and grown businesses, realised value through trade sales and been involved in a Management Buy In (MBI) of Guardian IT which later resulted in a full market flotation on the London Stock Exchange. He is familiar with obligations of operating a company, directors duties and holds a number of Chairman and Non-executive directorships of technology companies.





### **Shahnawaz Aziz**

CTO

Shahnawaz is a senior technologist with over 21 years of IT experience in managing, architecting, designing and developing software applications across Financial Services, Investment Banking, Shipping & Logistics and Government projects. He has been involved in blockchain for a number of years. Shahnawaz has a visionary ability to solve complex solutions using Blockchain, Social, Cloud, Mobile, AI and Big Data. Recently he successfully launched HD bitcoin wallet and blockchain platform, showcased via nTrust.com. He also delivered global bitcoin trading platform earlier this year. He also has a number of patents including patent rights assigned: "Secure Multiparty loss resistant Storage and Transfer of Cryptographic Keys for blockchain



### **Alan Palmer**

CFO

Alan is a career 'C' level finance professional, with an entrepreneurial IT track record from start up to SME to full listed experiences. He has 25 plus years of directorship roles in corporate finance, general and financial management and operations. Sub sector experiences include IT Services, IT Software, and 'Low' Technologies [primarily in energy efficiency 'green' technologies]. Geographic regions of experience include UK, Europe, Africa and the USA. Alan is a Chartered Accountant by profession with an honours business and finance degree.



### **Steve Mcavoy**

Head of Implementation

Steve comes from a software engineering background. His expertise lies in the installation of large scale systems from the point of analysis, implementation and then testing. He has worked for some of the largest brand names in the financial sector such as Investec, Royal Bank of Scotland, Lloyds, UBS and Barclays, ensuring the integrity of data and meeting service level agreements. He has also worked in the governmental and defense sectors.



### **Eszter Bohus**

Head of Global Brand Marketing & Communications

As Head of Global Brand & MarComms of FarnaTrust, Eszter is planning, coordinating and managing the company's marketing communication activities and consistent brand presence on all platforms. Eszter has worked in a number of marketing roles, internationally, which most recently have included Al Jazeera Media Network. She has worked for a number of international bodies and has organised a number of events with attendees from around the world. Core skills and professional experiences include but are not limited to managing diverse departments parallel on a number of projects and multi-million dollar budgets globally, with strong focus on brand identity development to meet corporate development vision and strategy. Eszter is a passionate activist and advocate for environmental issues and wildlife protection, enjoys diving, kitesurfing and beach tennis.



**Mike Barbarelli**

Senior Software Developer & Product Development

Mike Barbarelli is a senior software developer for FarmaTrust. He plays a role in software requirements analysis, design, testing and deployment. He has over a decade of experience in full stack web development, has been involved with blockchain technology since 2016 and is a certified Ethereum developer.



**Dr. Jenny Lee**

Social Media Lead

Jenny is the social media lead for FarmaTrust. Before joining FarmaTrust, she has previous experience in digital marketing and Financial Public Relations. She holds an MSc in Strategic Marketing from Imperial College London and prior to her Master's degree Jenny studied Bachelor in Medicine, Bachelor in Surgery and Bachelor in Obstetrics at the Royal College of Surgeons in Ireland, gaining an MB, BCh, BAO (NUI) and historical LRCP & SI. Jenny is a native Mandarin speaker and brings her skills to FarmaTrust.



**Jeffrey Middelbos**

Community Manager

Jeffrey Middelbos is the community manager for FarmaTrust. He manages bitcointalk, Reddit and Telegram channels as well as ICO communications. By background Jeffrey is an IT engineer and works for the 'Vrije Universiteit in Amsterdam'. Jeffrey is an enthusiastic member of the crypto community and is active on several crypto related forums. He has significant understanding of how cryptocurrencies work and also the importance of transparency and trust between the crypto community.



# FarmaTrust Advisors



**David Allen Cohen**  
Chief Technology Advisor

David A. Cohen is the Chief Technology Adviser at FarmaTrust. David is internationally renowned for his pioneering work in the Decentralized Software industry, Digital Currency and Blockchain industry. David was named as one of the Top 100 Movers and Shakers in the SmartGrid by Greentech Media. He was the founder and CEO of Infotility where he pioneered the “Grid Edge” creating the industries first artificial intelligence-based software platform - GridAgents™. David is a thought leader, speaking in venues such as MIT, TEDx, Consensus, Blockchain 100X and Singularity University. He is an expert on Blockchain, Artificial Intelligence, Cybersecurity, and Edge Computing. He is a former IOTA Foundation member. David is currently founder and Chairman of dcntral, a blockchain-based Cybersecurity company as well as advisor on the Machine Economy for Hashgraph.



**Peter MacLean**  
Advisor

Peter MacLean is a successful entrepreneur with more than 45 years of experience in the IT industry and the profitable development of high growth technology businesses. Peter has many years board level experience as a chairman, chief executive and non-executive director of private, venture capital / private equity backed and publicly quoted businesses and has also acted on the advisory boards of a number of private equity funds. He has considerable experience of providing IT services to enterprise and mid market companies, direct and channel partner sales strategies, software design and development, the building and management of large scale data centres, including the provision of hosting and cloud based services, and of joint ventures and mergers and acquisitions having led more than 20 transactions across Europe, Scandinavia, South Africa and Japan.



**Kate Enright**  
Advisor

Kate completed her pharmacy training with Pfizer, before commissioning into the British Army in 2006. Achieving the rank of Major, her diverse roles included tours of Iraq, Afghanistan and British Forces Cyprus where, as Head of Medical Logistics, she led the pharmaceutical supply chain planning for the Volcanic Ash Cloud crisis.



### **Professor Timothy Mackey**

Advisor

Tim Ken Mackey is the Director of the Global Health Policy Institute, an Associate Professor of Anesthesiology and Global Public Health at UC San Diego School of Medicine, and is the Director for Healthcare Research & Policy at UC San Diego Extension. He holds a BA in Political Science-International Relations, a Masters Degree in Health Policy & Law and also earned his PhD in Global Public Health from the joint doctoral program at UC San Diego - San Diego State University.



### **Chris Saynor**

Advisor

Chris pioneers innovative marketing strategies to reach the supply chain and logistics industry. As the former CEO of eyefortransport, Chris developed eft into the world's leading logistics business intelligence company, organizing CEO-level events around the world and specializing in cutting edge supply chain research. Chris is now a regular keynote speaker and event Chairman at Supply Chain conferences in both Europe and North America the world. Chris also sits on the Advisory Board of Lanetix, a San Francisco technology company that provides workflow and collaboration solutions to the Logistics industry. He is also an active Advisor to WTA, a 104 year old London based Logistics company.



### **Stephen Cole**

Advisor

Stephen Cole is a well known international television news anchor for almost three decades. He has conducted network interviews with Presidents, Prime Ministers and film stars. He hosted and produced the Oscars Special programme on BBC World for six years. Stephen successfully launched 4 of the world's main news channels, Sky News, CNN International, BBC World and Al Jazeera International. Stephen is also Chairman and Moderator at World Economic Forum at Davos, Eurasian Media Forum in Astana and the World Science Forum. Stephen is a judge at the British Academy of Film and Television Arts, a Board member of the Global Thinkers Forum and a former Director of the world-famous Premiership London Welsh rugby club. He is currently Chairman of the Institute of Diplomacy and Business.



### **Desmond Marshall**

Advisor

Desmond Marshall is the founder of Rouge Ventures, an investment and strategic consulting firm in Asia, that serves numerous Fortune 500, governments, traditional and new global companies. They conduct capital raising and advisory on investments, IPO/ICO/Blockchain projects, and other multi-industry businesses, for strategic repackaging and operational enhancements. He serves on a number of ICO advisory boards. Mr Marshall is one of the very first individuals in Asia to be a member of the global Enterprise Ethereum Alliance, joining fellow ranks like Accenture, BP British Petroleum, Credit Suisse, JP Morgan, Microsoft, UBS, and many other Fortune 500 companies. Mr Marshall has numerous experiences in reviewing and vetting blockchain related investment projects since 2012 long before it became popular, and has an in-depth understanding of how investors and companies should operate under such a new trend.



**Changki Park**

Advisor

Changki is one of the foremost blockchain evangelists in Korea. Not only has he founded one of the earliest Korean cryptocurrencies, he is also a prominent blockchain speaker at congress-level conferences. Before founded Paxnet, Inc., one of the largest securities information portals in Korea as well as Finger, Inc., a major fintech company in Korea. Previously he worked for Samsung for 14 years. He is the former head of the Financial Engineering Research Center at the State University of New York's Korea campus.



**George Han**

Advisor

George Han has extensive experience in the tech startup scene in Singapore, having run the incubator for a top Singapore university. He is familiar with the startup investment scene and has helped created over 90 tech startups over 5 years. Presently he is a Managing Partner at SNAP Ventures, a Singapore-based funds management firm that invests in Blockchain, AI, Fintech, Healthcare and Cryptocurrencies. He takes a deep interest in Fintech companies and selectively advises ICOs of promising tech businesses. George has a Bachelor Arts from Asia's top university - National University of Singapore and a MBA from the Hull Business School