

MATRIX BUSINESS WHITE PAPER

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1. Introduction:

1.1 Background

The invention of Bitcoin in 2008 symbolized the advent of cryptocurrency. The succeeding years witnessed a dramatic advancement of blockchain technologies. The introduction of Ethereum opened the path for supporting complex business behaviors with cryptocurrencies. The overall momentum of development, however, is now facing a series of key challenges. These include: (1) slow transaction speed; (2) programming barrier of smart contracts; (3) lack of security in smart contracts; and (4) inflexibilities in managing and updating blockchains.

1.2 What's MATRIX

Designed to be the new generation blockchain, MATRIX leverages the latest Artificial Intelligence (AI) techniques to revolutionize the landscape of cryptocurrency. MATRIX differentiates itself from previous blockchains by offering breakthrough technologies in building AI-enabled autonomous and self-optimizing blockchain networks, which feature multi-chain collaboration and decoupling of data and control blocks.

2. Features of MATRIX

Positioned as an "Intelligent Blockchain", MATRIX has four important features:

- A . EASIER: Allowing everybody to design smart contracts without explicitly programming;
- B . SAFER: Making blockchains more robust under malicious attacks;
- C . FASTER: Enabling faster applications and transactions;
- D . MORE FLEXIBLE: Integrating public and private chains with the capability of adaptive optimizing.

2.1 MATRIX: An EASIER Blockchain

What is EASIER with MATRIX

With MATRIX, no programming expertise is needed anymore for designing smart contracts. Anyone who needs smart contracts can directly implement them with natural languages.

Why does blockchain need to be EASIER

Among the 7 billion people who can write or speak, less than 20 million can do some kind of programming. MATRIX may address a user base that is 350 times bigger than that of Ethereum.

How to make MATRIX EASIER

The AI techniques in MATRIX upgrade smart contracts to the next generation, intelligent contracts. MATRIX revolutionarily extends the depth and breadth of blockchain applications by automatically generating contracts from prototyping concepts and making smart decisions based on historical data.

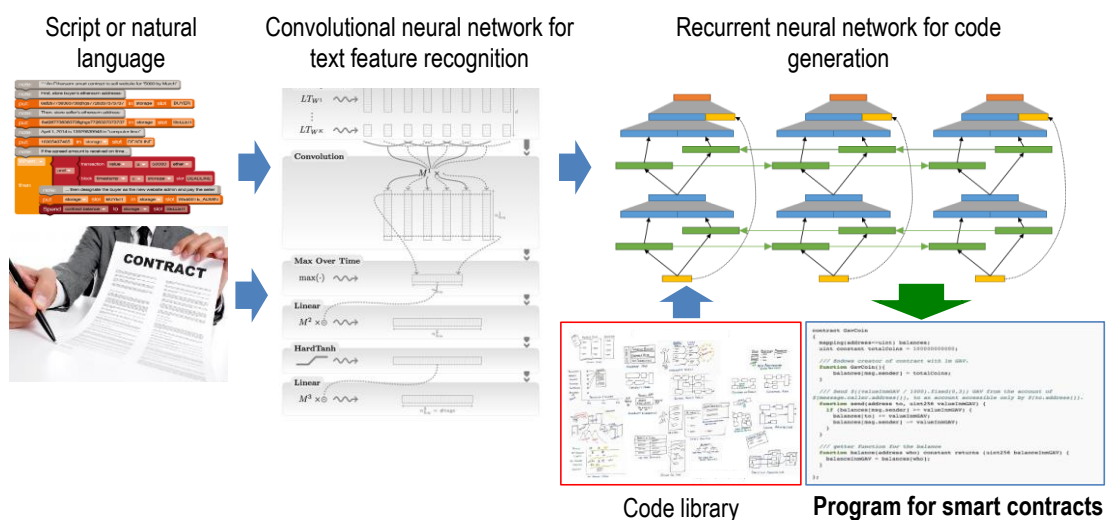


Figure 1. Deep learning based automatic generation of smart contract programs

2.2 MATRIX: A SAFER Blockchain

What is SAFER with MATRIX?

MATRIX leverages the power of AI to build a robust blockchain so as to maintain the safety of digital assets under malicious attacks.

Why does blockchain need to be SAFER?

The irreversibility and anonymity of blockchain transactions suggest that the digital assets can be under serious risk. The DAO attack already demonstrates how smart contracts can be exploited. The MATRIX blockchain is equipped with a powerful AI security engine, which is able to identify bugs and vulnerabilities in intelligent contracts.

How to make MATRIX SAFER

MATRIX offers an overall security framework consisting of four major components, 1) a rule-based semantic and syntactic analysis engine for smart contracts, 2) a formal

verification toolkit to prove the security properties of smart contracts, 3) an AI-based detection engine for transaction model identification and security checking, and 4) a deep learning based platform for dynamic security verification and enhancement.

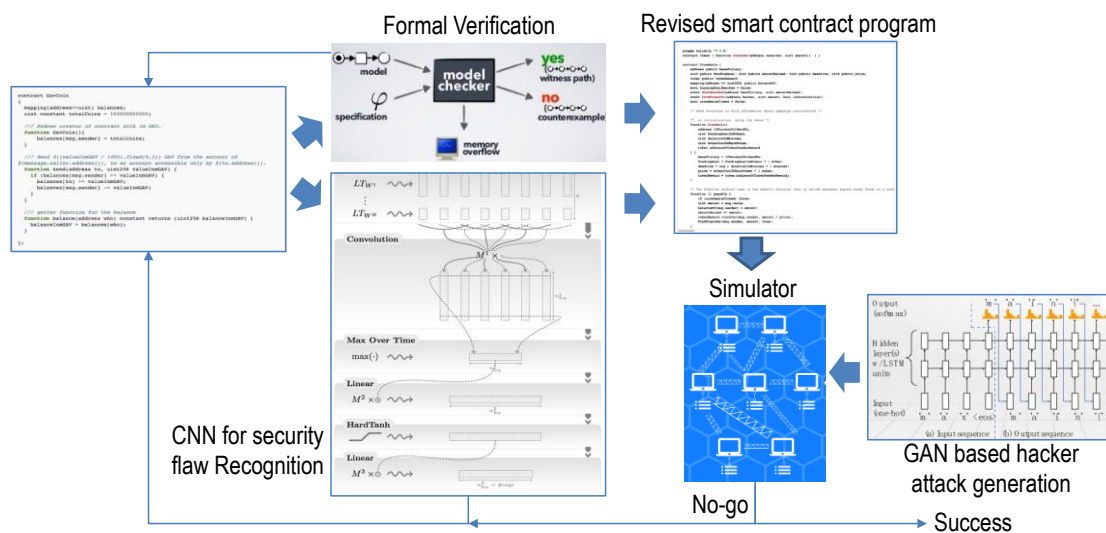


Figure 2. Deep learning based security validation and enhancement of smart contract programs

2.3 MATRIX: A FASTER Blockchain

What is FASTER with MATRIX

The unique dynamic hierarchy generation mechanism of MATRIX enables a blockchain network with superior transaction speed. The ultimate goal is to outperform the leading payment and clearing systems and delivers a throughput of 1M transactions/second.

Why does blockchain need to be FASTER

The transaction speed is the most influential factor on user experience, while the transaction throughput is the most important feature to support large-scale commercial applications. By enabling an unprecedented transaction efficiency, MATRIX is designed to unleash the real power of blockchains.

How to make MATRIX FASTER

MATRIX enables high-speed transactions by dynamically generating a hierarchy in the blockchain network. A distributed clustering algorithm is devised to cluster nodes into disparate groups and a delegate is voted in each group with an evaluation function considering both fairness and randomness. The delegate nodes form a temporary P2P network to exchange transaction information and perform Proof of Work (PoW) computations. The "winner" delegate shares the PoW reward with other nodes in its cluster.

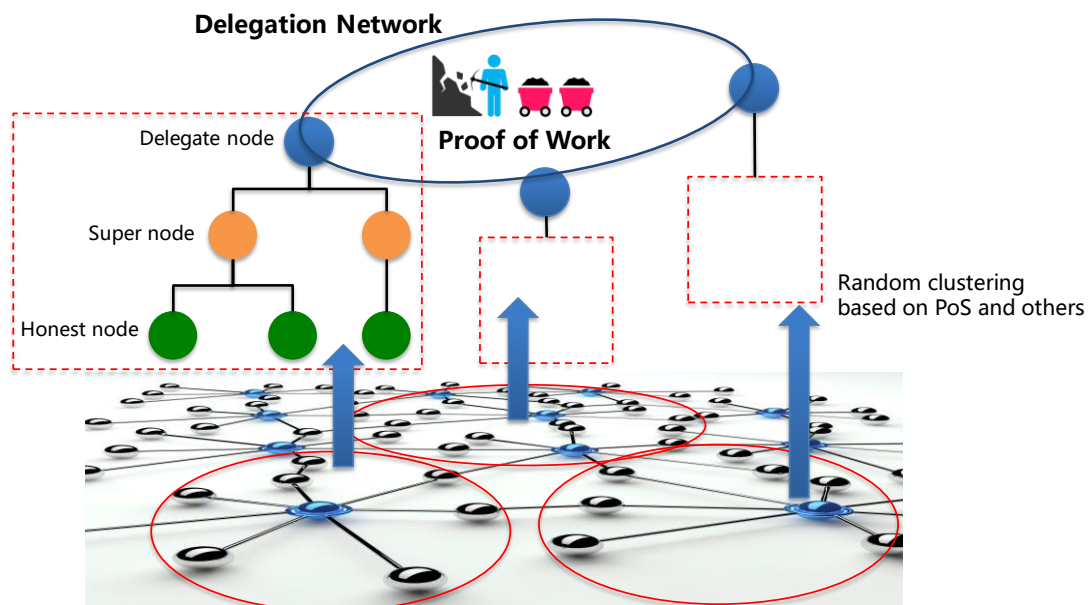


Figure 3. Random clustering based PoS + PoW consensus

2.4 MATRIX: A MORE FLEXIBLE Blockchain

What is MORE FLEXIBLE with MATRIX

Evolutionary parameter optimization without triggering hard fork.

Intelligent integration of public and private chains with AI-based coordination.

Why does blockchain need to be MORE FLEXIBLE

Hard fork, which splits the community and devaluates the digital asset, is destined to happen in most blockchain projects.

The higher "FLEXIBILITY" means that MATRIX can dynamically adjust the parameters as needed so as to adapt to market needs.

The AI-coordinated multi-chain scheme meets different needs at the same time. For instance, MATRIX allows a bank to build a private business chain, which can also get data from and put transaction to the public chain.

How to make MATRIX MORE FLEXIBLE

An evolutionary proactive optimization engine is embedded in the bottom protocol layer of MATRIX so that blockchain parameters are dynamically updated according to external conditions. In addition to maintaining the efficiency and applicability, the dynamic optimization scheme prevents the risk of hard fork in each software release and

parameter update.

Every node in the MATRIX blockchain is associated with one control chain and at least one data chain. Both chains are coordinated by a distributed consensus scheme. The control chain is equipped with a rich set of AI models and behavioral specifications for data chains. The data chain performs data operations and collaborates with other chains and routers under the administration of the control chain. The introduction of the control chain enables MATRIX to exchange data and executes contracts with other blockchains.

3. Ecosystem of MATRIX

3.1 Who will use MATRIX

There are three major groups of users on MATRIX.

Computing Facility

As the heart of MATRIX, the computing facility provides an infrastructure for providing AI services, smart contract execution, application release, and transaction processing. Deploying computing power on the MATRIX blockchain leads to two types of rewards, 1) performing mining for transaction processing and earning MANs, and 2) offering AI services such as renting computing power, executing contracts, and security protection to get payment from third parties.

Application Providers

Applications provide services to customers. MATRIX applications fall into three categories, 1) high-end AI applications such as industry data analytics and large-scale learning tasks, 2) autonomous execution of highly complex smart contracts that require no human intervention, 3) enforcing regular smart contracts to regular, ordinary tasks. All MATRIX applications are based on MANs as circulation medium.

Customers

MATRIX has four major types of customers, 1) owners of computing power who earn rewards through mining or renting out the computing power, 2) users of computing power who need MATRIX's computing power to offer their own AI services/applications, 3) application providers who develop and publicize applications on the blockchain for general users, and 4) ordinary users who purchase applications/services on the blockchain and perform transactions with MANs.

3.2 The generation and circulation of MATRIX Token

The name of MATRIX Token is “MAN”, short for **MATRIX AI Network**.

The Generation of MAN tokens:

Public Sale

Please refer to the MAN Token Sale Information Memorandum.

Mining

MANs can also be generated through mining when the pool is open. The mining will only start when the new, separate MATRIX Blockchain has been developed and deployed.

Community Engagement

MATRIX has a dedicated Foundation for community activities. Contributors for the MATRIX Blockchain development and community services will receive rewards in MANs.

Application/Service Development

Developers who release or sell their applications/services on the MATRIX Blockchain get payments in MANs.

Sale of Computing Power

Owners of computing power on the MATRIX blockchain can sell the computing power to get rewards in MANs.

Trading

It is also possible to purchase MANs on cryptocurrency exchanges or from other MAN owners.

The Circulation of MAN:

Transaction and Fees

All transactions on the MATRIX Blockchain are conducted in MANs. Similar to Ethereum's Gas, every transaction incurs a fee when it is permanently recorded in a block.

Service/Applications Purchase

Customers purchase any applications and services publicized on the MATRIX Blockchain with MANs.

Chanel of Payment

MAN can also serve as a means of payment for both online and offline transactions.

Computing Power Acquisition

Professional customers having demands for large scale computation can purchase the computing power from providers on MATRIX with MANs.

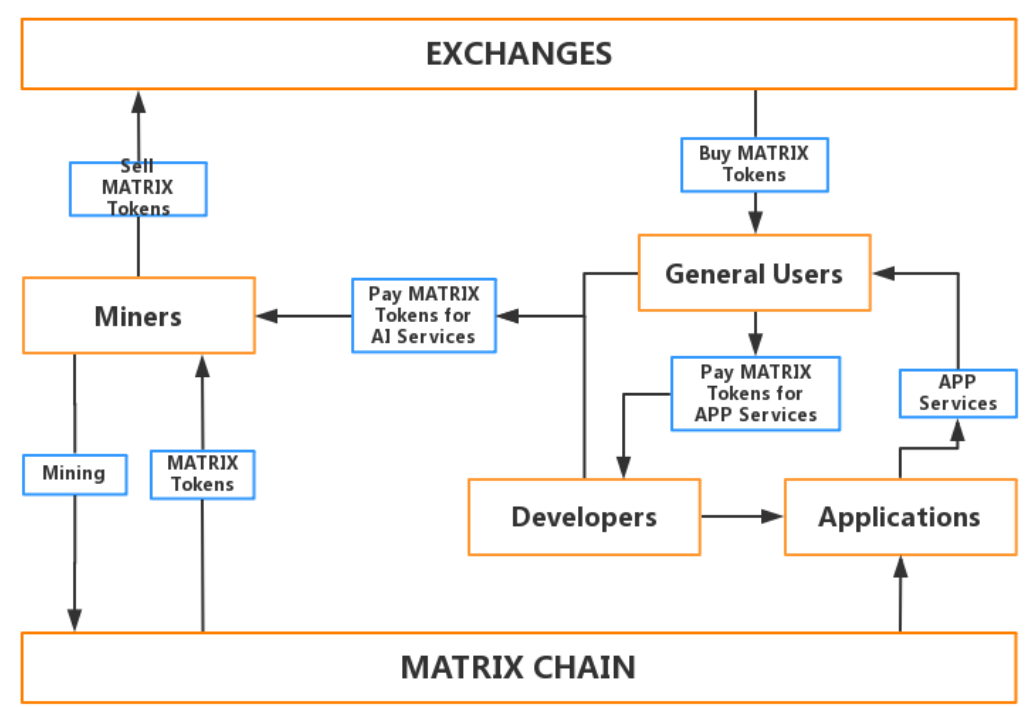


Figure 4. Ecosystem of MATRIX

4. MATRIX Foundation

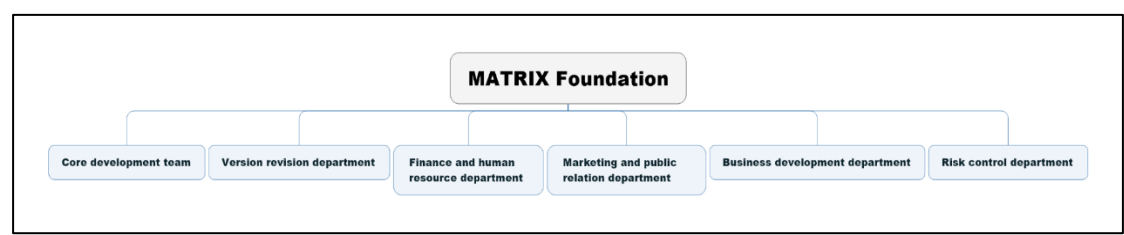


Figure 5. Organizational structure of MATRIX Foundation

The Matrix team is of the view that it would be beneficial for the Matrix project if a non-profit foundation could guide the early steps and stages of development and complement the decentralization nature of its governance model.

As a company limited by guarantee established in Hong Kong, MATRIX Foundation (the “Foundation”) is a non-profit organization. The Foundation is dedicated to supervising

the development of the MATRIX project and promoting the transparency of governance. It is also responsible for improving the collaboration, regulating the fund usage, and project operation.

The governance structure of the Foundation is designed to promote sustainable development, effective project execution, and financial security. The departmental structure consists of core system development, system release and version control, finance and human resource, marketing and public relation department, business development, and risk control.

The Foundation will fund the development of the MATRIX platform discussed in this paper through the issuance of MAN tokens. These tokens will run natively on the Ethereum blockchain and will be offered to backers and potential customers of the MATRIX project via a token sale. The token sale will be launched on or about 16th January 2018. When a new separate Matrix Blockchain has been developed and deployed, the MAN tokens will be swapped on a one-to-one basis to the new MAN token on this new blockchain. Then, subsequent token sale may take place to fund the ongoing developments and promote the applications on the Matrix Blockchain.

Founders and advisors of the Foundation are:

Michael Lai-Yick Ng

Michael co-founded Lenovo Group Limited in 1988 and Asia Online Limited in 1993. In 2000, he founded North 22 Technology Services Group. As an IT and Internet veteran, Mr. Ng has over 35 years of experience in the technology sector in Greater China.

Benedict Tai

Mr. Tai is a retired partner of a major US law firm with over 30 years of experience specializing in cross-border corporate finance. He was also an investment banker with Lehman Brothers specializing in TMT. He was one of the founders of Latitude Capital, a boutique merchant bank with offices in Beijing, Shanghai and Hong Kong. He is a member of the New York Bar Association and a member of the Hong Kong Law Society.

Ignatius Cheng Kwok-Lap

Ignatius Cheng was the Chief Financial Officer ("CFO") and Company Secretary of Lenovo Group Limited (Stock Code: 992), a company listed on the Stock Exchange of Hong Kong in 1994, since the company's inception in 1988 to 1998. As the CFO and the Company Secretary of Lenovo, Ignatius Cheng was responsible for its accounting, treasury, legal and corporate financing activities. He was actively involved in the flotation of Lenovo in 1994 and its subsequent acquisition exercises.

From 2002 onwards, Ignatius Cheng co-founded InnoState Holdings Limited (“InnoState”), which is a private equity investment company. Ignatius is the Executive Director of InnoState and advises on its equity investment strategies.

Ignatius Cheng is a fellow member of The Association of Chartered Certified Accountants, United Kingdom and an associate member of The Hong Kong Institute of Certified Public Accountants.

Legal Advisor to the Foundation

ReedSmith Richards Butler (as to Hong Kong law)

5. Team of MATRIX

5.1 Development Team

Artificial Intelligence Team: Headed by leading AI scientists, the team members have extensive experiences in AI and Blockchain technologies. The team has made contributions in over 10 PRC national level research projects and won numerous awards in international AI challenges.

Prof. Steve Deng - Chief AI Scientist

Prof. Deng is an associate professor of School of Software, Tsinghua University, where he has been a faculty member since 2008. Prior to Tsinghua, he was with Magma Design Automation as a consulting technical staff. He received his Ph.D. degree from Carnegie Mellon University and completed his ME and BE studies at Tsinghua University.

His research interests include machine learning, industry data analytics, and computer architecture. He has been the Project leader or Co-Project leader for numerous national level research projects. Since 2016, he has been the Deputy Principal Architect of China Railway Rollingstock Corporation's Prognostics Health Management for High-Speed Trains Project, which focuses on leveraging modern machine learning techniques to revolutionize the operation and maintenance of railway vehicles. His book, Structural Integrated Circuits (IC) Design and High Level Synthesis, was adopted as the textbook of IC design by Tsinghua and many other universities. His work on deep learning based image detection was ranked #1 in many prestigious challenges (e.g. PASCAL VOC and COCO). He is the author or co-author of over 50 papers. He received many awards, including a best paper award on International Conference on Computer Design 2013, NVIDIA partnership professor Award, and Tsinghua Key Talent Award. He is in charge of designing machine learning algorithms and hardware architectures for the MATRIX blockchain.

Blockchain Development Team: Headed by leading communication and software experts, the team is comprised of industry veterans with rich experience in networked software and cryptocurrencies.

Bill Li - Chief Network Architect

Mr. Li is a leading expert of communication and IC design. He is a major contributor of many 4G, 4.5G(NB-IoT) and 5G standards of China. He was the chief architect of China's first WiFi transceiver IC. As a Co-Project leader, he led the design of the dispatch communication system of China's first aircraft carrier. His work on communication IC designs won numerous national awards. His book, Communication IC Design, was one of the best-selling textbooks in this area and is used by many prestigious universities. He will lead the architecture design of the MATRIX block chain.

Ethan Tian - Chief R & D Engineer

Mr. Tian received his BS degree from Peking University. Prior joining MATRIX, he was a Senior R&D Engineer of Microsoft, where he was responsible for developing several major software systems and computing platforms. He has extensive experiences in building blockchains and related tools. Mr. Tian will lead the software design and implementation of the MARTIX Blockchain.

Hardware Team: Equipped with rich commercial IC development experiences, the team members will design world-class AI and mining VLSI under the supervision of leading IC architects.

Dr. Tim Shi - Chief Hardware Scientist

Dr. Shi is a veteran of the semiconductor industry. Prior to joining MATRIX, he was a Principal System Architect of AMD and was also responsible for the technology partnership of AMD with companies and universities in Greater China. Before this position, he held various positions at different leading international IC companies such as Synopsys and ARM. Dr. Shi was also with Samsung Semiconductor as a senior chip design engineer (based at Samsung's headquarters in Korea). Dr. Shi received his Ph.D. degree from the Chinese Academy of Science in 2005.

5.2 Business and Marketing Team

Owen Tao - CEO

Mr. Tao received the bachelor degree in the double-major (physics and economics) program of Peking University. Holding the CEO positions in several high-tech startup companies, he has rich experience in managing product development. He supervised the development of the 3D virtual community, China's first embedded game advertising system and other Internet technology products. He also has strong skills in product operation and promotion. He led the development and operation of China's first cross-border e-commerce platform, which attracted 20 million users around the world. As the

CEO of MATRIX, Mr. Tao is responsible for strategic decision making and product positioning.

John Zhu - Senior VP

Mr. Zhu received his M.D. degree from Beijing University of Posts and Telecommunications, and EMBA degree from University of Minnesota. He has over 20 years of experience in management, marketing, and government relation. Mr. Zhu supervised the construction of a multi-satellite ground station for the Moon Discovery Project. He will be in charge of ecosystem construction, application deployment, and marketing operation.

5.3 Project Advisors

Dr. Donglin Wang - Chief Advisor of Artificial Intelligence

Dr. Wang is the director of National ASIC Design Center, Institute of Automation, Chinese Academy of Science. From 2009 to 2015, he served as the president of Institute of Automation, Chinese Academy of Science. He was also on the advisory board of China's Core Electronic Devices, High-end Generic Chips and Basic Software Project. He received two Second Class National Science and Technology Progress Awards and one First Class Defense Science and Technology Progress Awards. He was voted as the Expert with Outstanding Contributions to China's Defense Science and Technology. Dr. Wang will provide strategic and technical advisory services to MATRIX's AI algorithms and chip development.

Tony Surtees – Business Development

Mr. Surtees is the founder and CEO of cloud-based content management platform Hyperlocalizer Pty Ltd. He has a high profile in the media, consumer and B2B industry sectors, he plays. His roles have included general management, strategy, marketing and operations in large public companies in Australia, Asia and the United States. He has also been an investor and mentor to managers in early stage private internet and technology businesses. At Yahoo Inc. (USA), Mr. Surtees launched new Commerce Group business units across 13 countries and was responsible for the launch of Yahoo Shopping. Mr. Surtees has a Master of Science in Management from the Stanford Graduate School of Business, a Bachelor of Commerce (B.Com) marketing major from the University of New South Wales, and a Company Director Diploma from the University of New England.

6. Road Map and Planned Usage of MATRIX Fund

6.1 Road map of MATRIX

Age of Genesis

2018.6- Initialization

- *Infrastructure
- *Private chain
- *Inter-chain transaction

Age of Speed

2018.9: Light Speed Network

- *AI-enabled PoS+PoW consensus
- *Random generation of delegates nodes
- *Evolutionary parameter optimization

Age of Civilization

2018.12: AI-secured Intelligent Contracts

- *Formal verification
- *AI based proactive protection
- *AI created autonomous constitution

Age of Wonder

2019.12: Mining & Applications

- *Mining ICs
- *Computing/mining facility
- *Big data applications

6.2 Usage of MATRIX Fund

Expenditure	Budget
R&D of blockchain technologies	15%
R&D of AI technologies	15%

R&D of the 1st generation of ASIC and mining machine (Bayesian computer)	20%
Initial deployment of computing power on the blockchain	20%
Marketing and development of ecosystems	15%
R&D of applications	10%
Investment on related R&D activities and projects	5%
Total	100%