

BLOCKCHAIN FOR FOOD TRACEABILITY
AND
SUPPLY CHAIN MANAGEMENT INNOVATION

SPEAKER

Anndy Lian

CEO, LINFINITY

Blockchain Advisor for the Asian Productivity Organization

Member of Gyeongsangbuk-do Blockchain Special Committee

- More than 15 years of experience in Asia
- Provided advisory across a variety of industries for local, international & public listed companies
- Key management role in not-for-profit and quasi government linked organizations
- A true believer in incubating startups and has since invested in a few health related companies




ABOUT LINFINITY

Based on Blockchain, Internet of Things, and Big Data technology, LINFINITY establishes a stable distributed business platform with reliable data, transparent information, efficient cooperation, and an interconnected network tailored to cope with the practical business pain points and developing demand of corporate users.



e and
chain



All people, at all times, have physical, social, and economic access to sufficient, safe, and nutritious food that meets their food preferences and dietary needs for an active and healthy life.

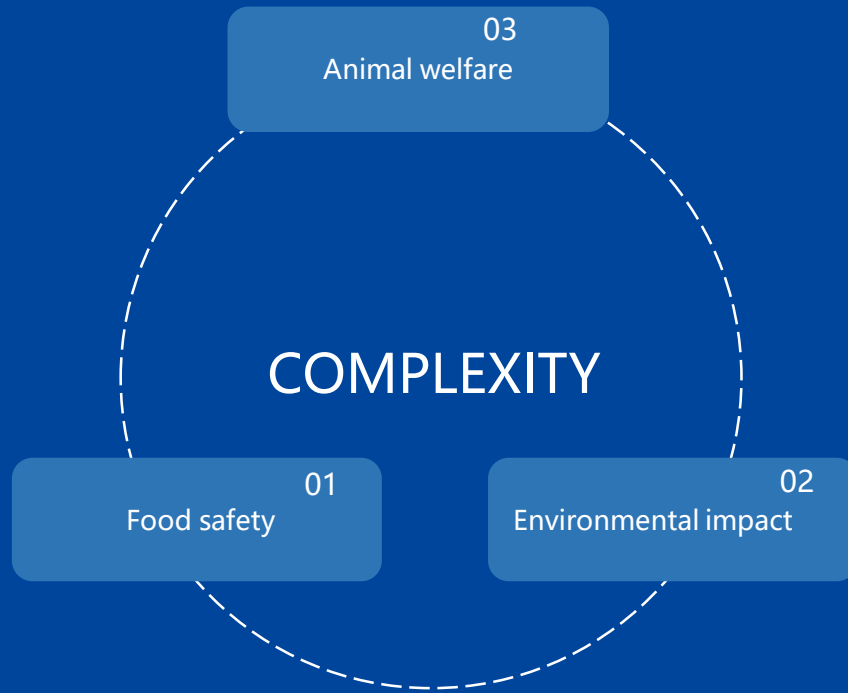
the United Nations' Committee

FOOD SECURITY



The global food supply chain is rife with complexities.
A proliferation of available food products combined with the rapid growth of diversified markets has resulted in disparate global flows of raw materials.

THE PROBLEM



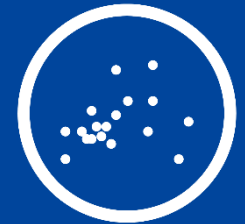
NON
TRANSPARENT



FOOD
SECURITY



NON
REGULATED



CASE STUDY

Outbreak of *Salmonella* Infections Linked to Pre-Cut Melons

93

A total of 93 people infected with the outbreak strain of *Salmonella* Carrau have been reported from 9 states.

23

23 people have been hospitalized. No deaths have been reported.



On April 12, 2019, Caito Foods LLC recalled External pre-cut watermelon, honeydew melon, cantaloupe, and pre-cut fruit medley products containing one of these melons produced at the Caito Foods LLC facility in Indianapolis, Indiana.



CASE STUDY

What is the source of this outbreak.



Epidemiologic and traceback evidence indicates that pre-cut melons supplied by Caito Foods LLC are the likely source of this outbreak.

CASE STUDY

How traditional source-tracking



CASE STUDY

Steps in a Foodborne Outbreak Investigation



Step 1: Detect a Possible Outbreak



Step 2: Define and Find Cases



Step 3: Generate Hypotheses about Likely Sources



Step 4: Test Hypotheses



Step 5: Solve Point of Contamination and Source of the Food



Step 6: Control an Outbreak



Step 7: Decide an Outbreak is Over

CASE STUDY

Disadvantages of traditional measures



Too much info to collect

PFGE&WGS ----- DNA



Long time to complete

2019-04-02 TO 2019-04-12



Hard to locate the problem



Info gather too subjective

LINAFINITY

TECH
SOLUTION



RAW MATERIAL



FACTORY



TRANSPORTATION



EXPORT



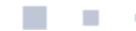
RECYCLE



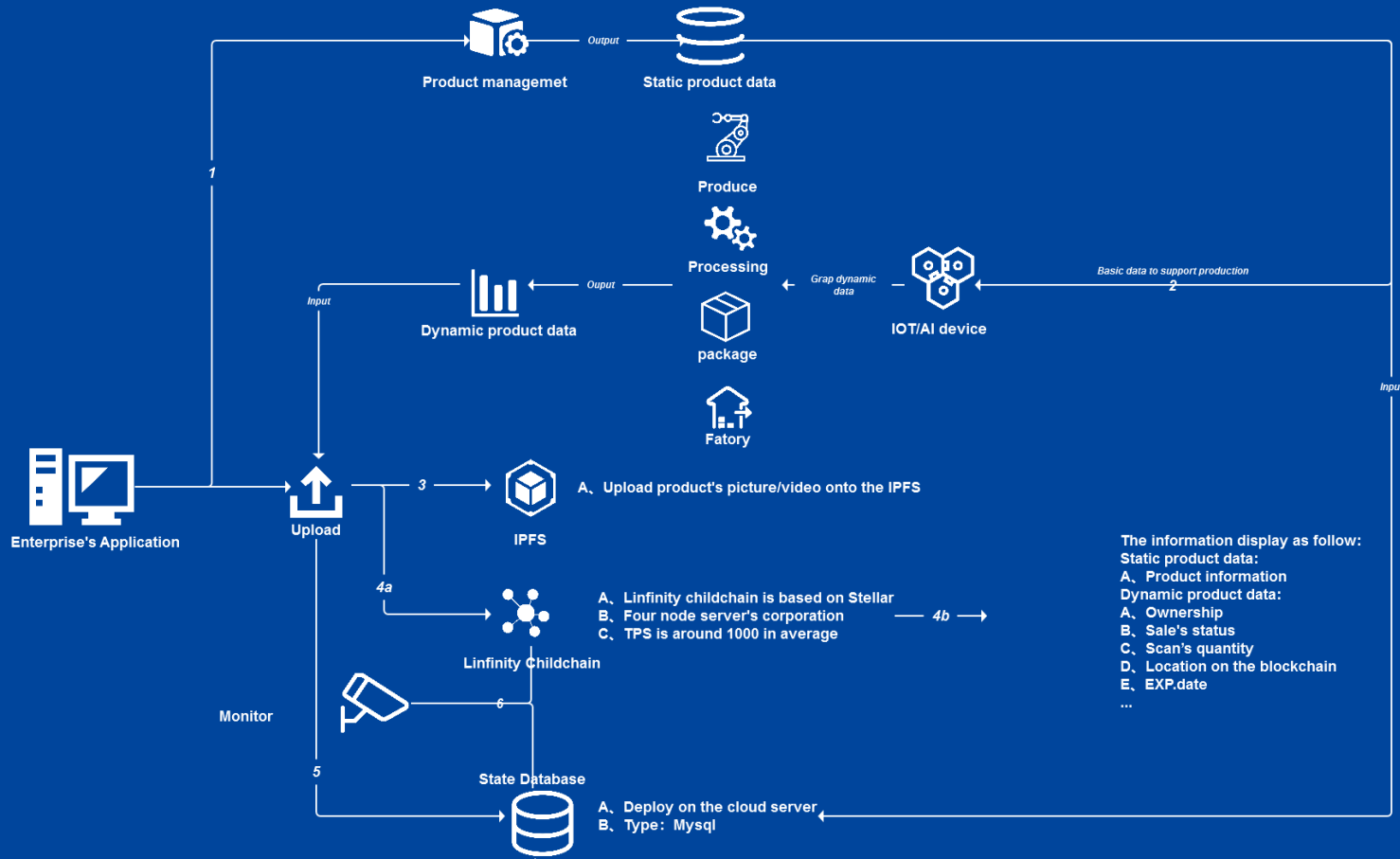
CONSUMER



RETAILER

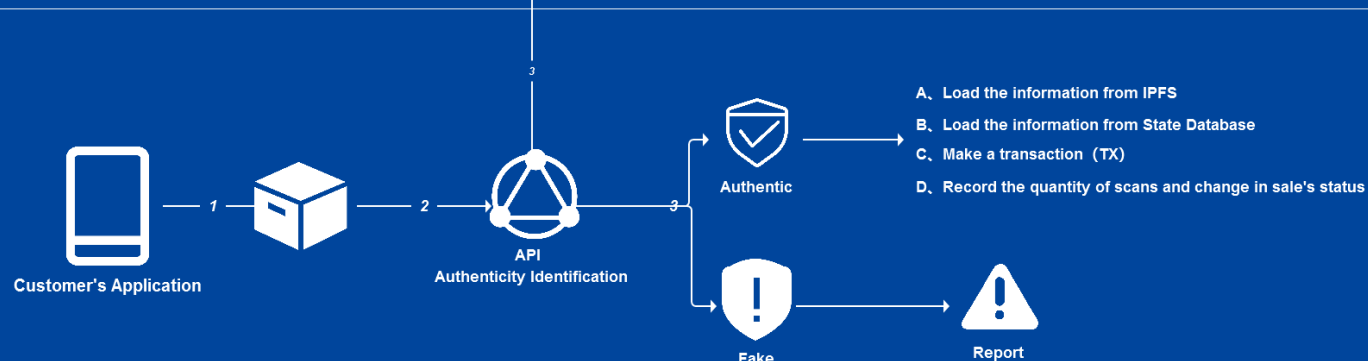


DISTRIBUTOR



STEP:

- 1, Create the static product data
- 2, Grap the Dynamic product data by IOT
- 3, Upload onto the IPFS
- 4,
 - a.Upload onto the Linfity Childchain
 - b.Generate the product QR code
- 5, Synchronous data to the state database
- 6, Monitor the data between Linfity Childchain and state database

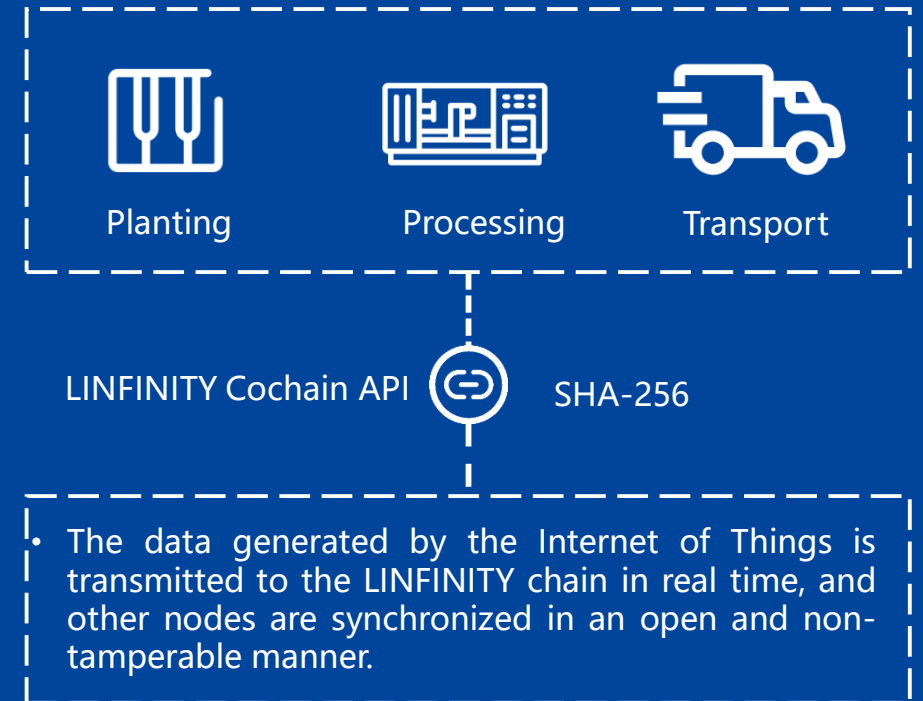
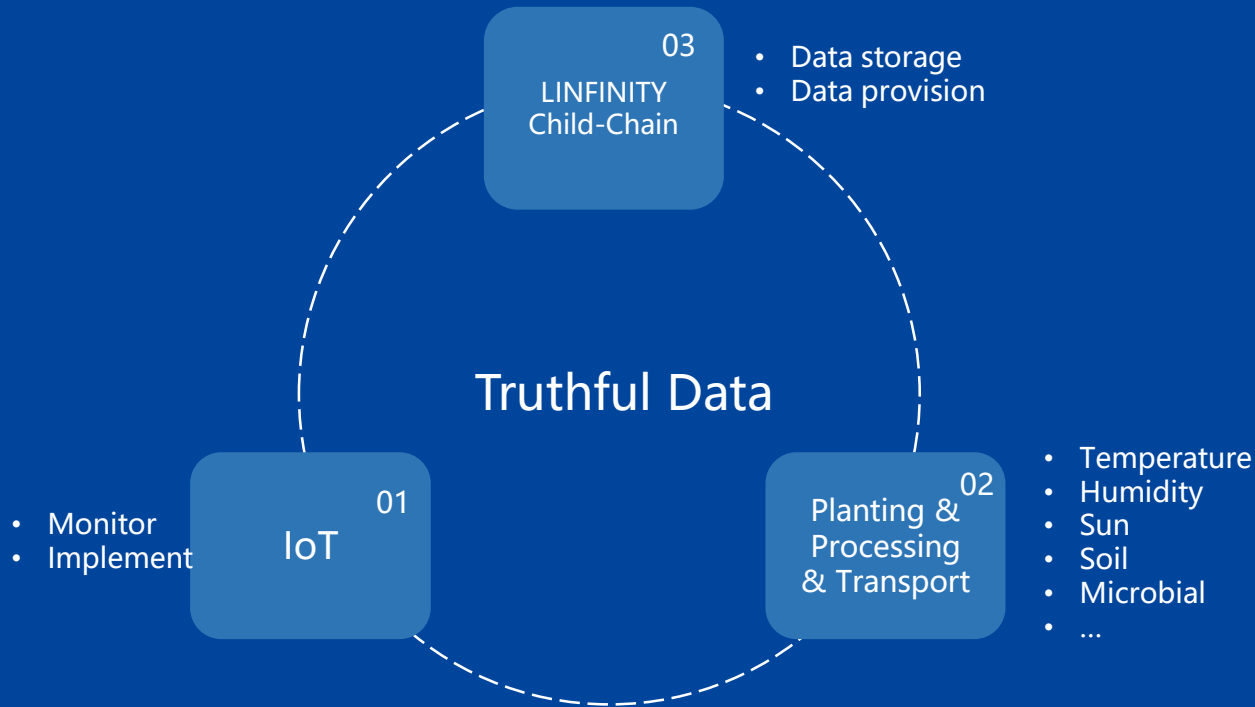


STEP:

- 1, Scan the QR code onto the product
- 2, Interface calling for API for graping the data from state database
- 3, Return the result
 - A, Load the information from IPFS
 - B, Load the information from State Database
 - C, Make a transaction (TX) ,Transfer ownership onto the Linfity Childchain
 - D, Record the quantity of scans and change in sale's status

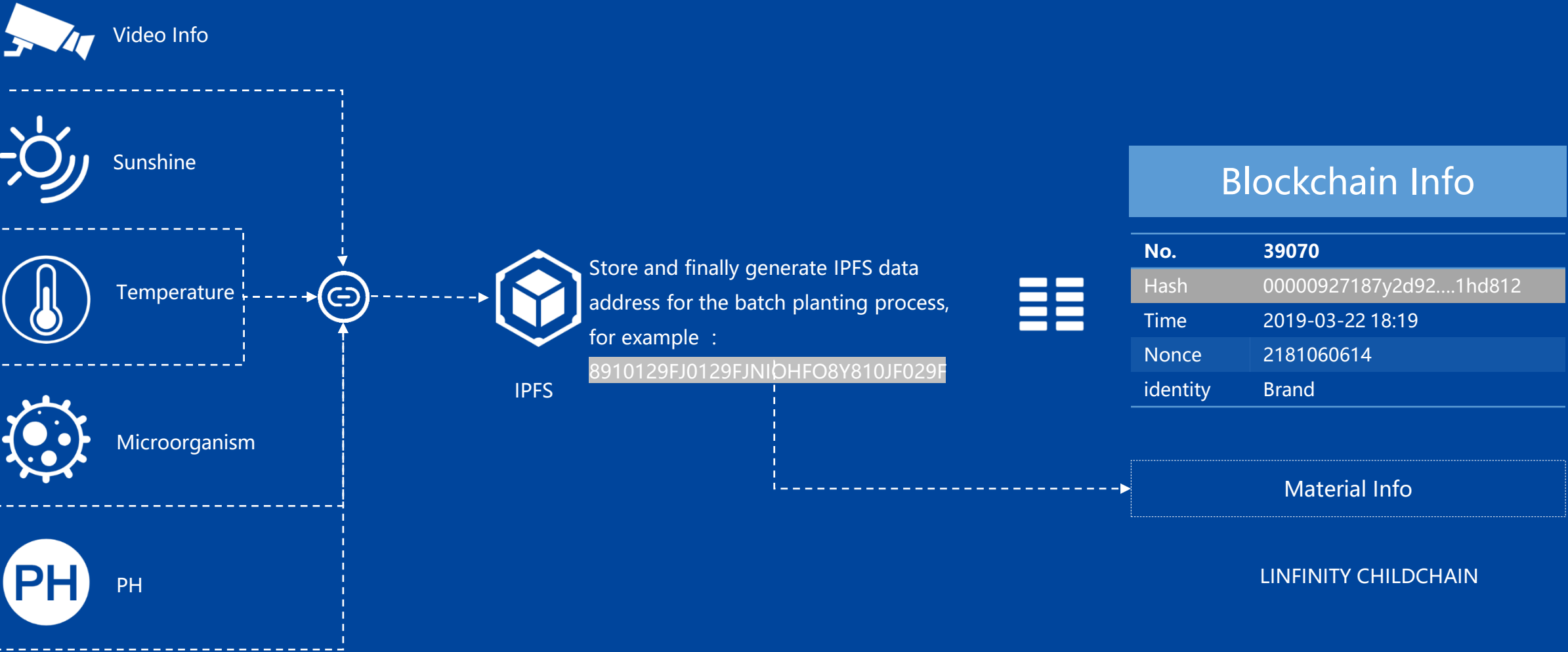
BLOCKCHAIN AND IOT

Assist in collecting and storing data in the production process to ensure the authenticity of data flow



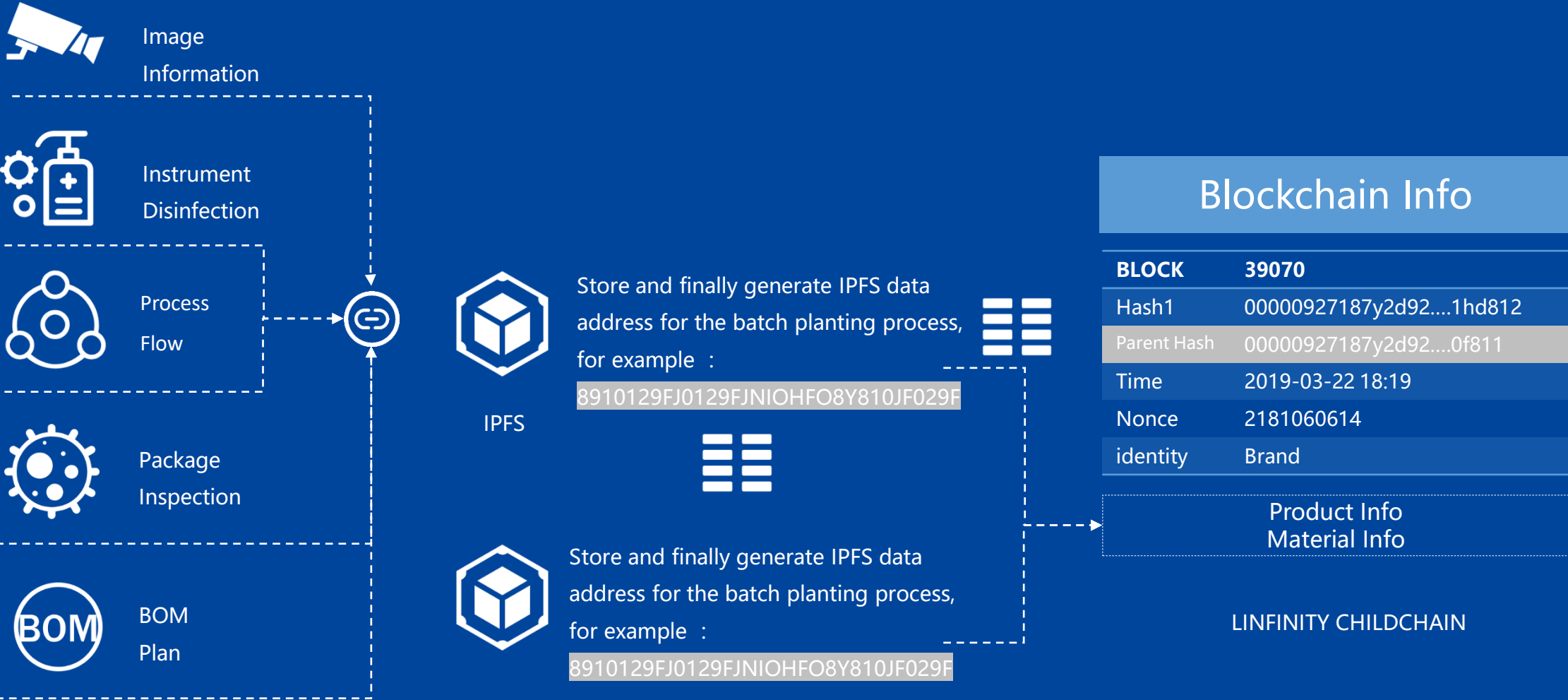
BLOCKCHAIN AND IOT

How do we collect information through IoT in the planting process and finally carry it on the chain?



BLOCKCHAIN AND IOT

How do we collect information through IoT and wind up new processed products?



BLOCKCHAIN AND IOT

Products to processed finished products, recording parent-child relationships between them on-chain



Salmonella

Pre-Cut Melons

Blockchain Info

Block	39070
Hash	00000927187y2d92....1hd812
Time	2019-03-22 18:19
Nonce	2181060614
identity	Brand

Material Info

LINFINITY CHILDCHAIN

Blockchain Info

Block	39070
Hash	00000927187y2d92....1hd812
Parent Hash	00000927187y2d92....0f811
Time	2019-03-22 18:19
Nonce	2181060614
identity	Brand

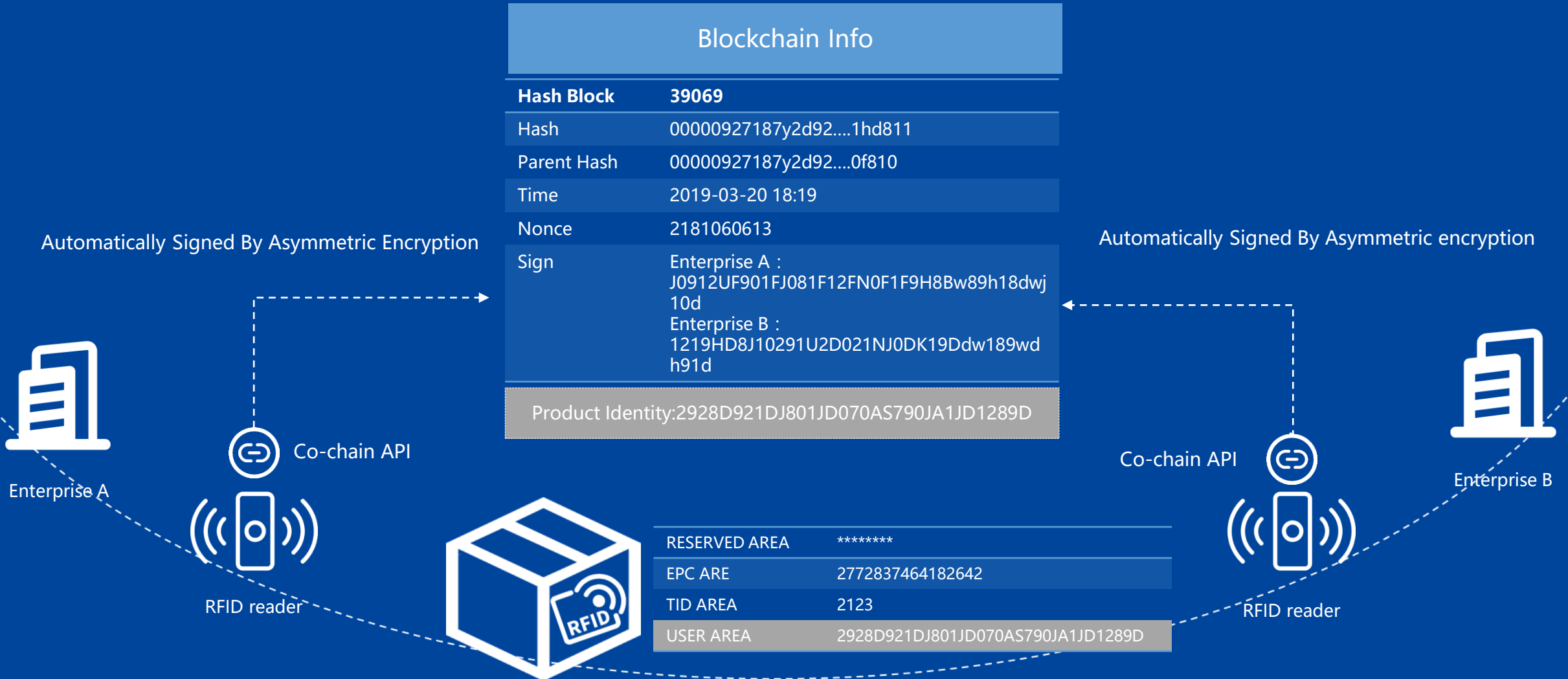
Product Info
Material Info

LINFINITY CHILDCHAIN



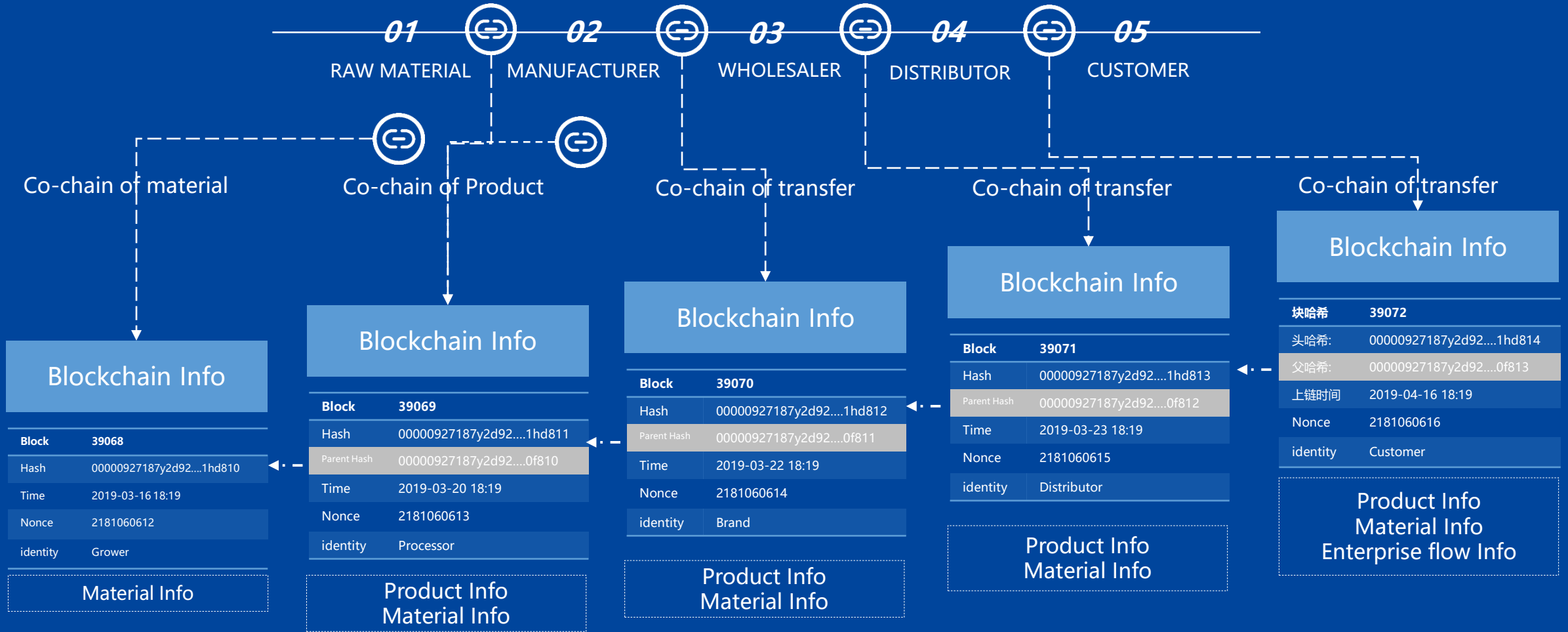
BLOCKCHAIN AND IOT

How do we combine the Internet of Things to get the flow information of products and finally get on the chain?



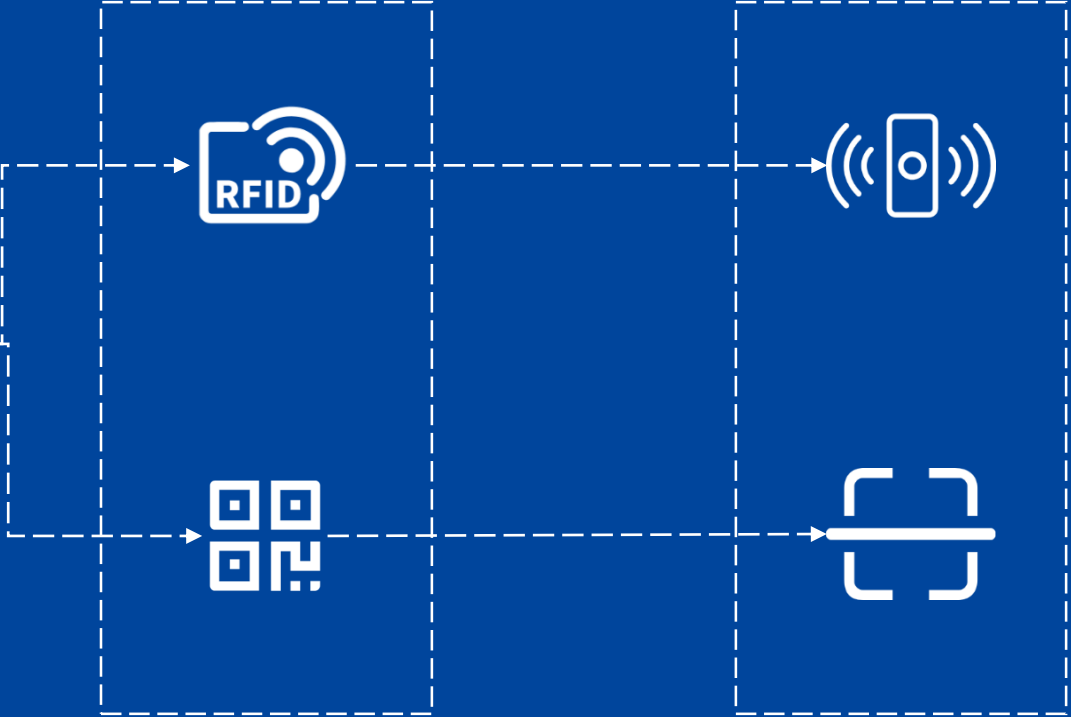
LINFINITY COCHAIN API

The LINFINITY API can also stream the flow between objects while the production process data is truly transparent.



TRACEABILITY

How we trace the problem?



Storage carrier for blockchain data

Device for reading blockchain data

01



RAW MATERIAL

Turlock Fruit

Planting information

Product	Hami
Sunshine	3029h
Ph	7.2
Microorganism	Normal
Soil Moisture	Seedling Period: 65% Fruit Development Period: 70%
Temperature	Germination Period: 28.3 °C Flower Bud Differentiation Period: 20 ° C During The Day 25 ° C At Night Flowering Fruiting Period: 27 ° C
Humidity	Average 67%, Minimum 60%, Maximum 70%
Altitude	498m
Precipitation	40mm
Annual Temperature	3122.9°C , frost-free Period150d
Core Buyer	Caito Foods LLC
Environment	Normal

02

MANUFACTURER

Indianapolis Service Center and Fresh Cut

Processing information

Product	Hami
Core Buyer	Caito Foods LLC
Batch No.	2019040102918
Bacteria Are Disinfected	Y
Time	2019-04-01
Whether The Cut-off Person Is Wearing A Suit	N
Whether The Melon Device Has Been Tested Daily	Y
Equipment Operation Day	256d
Whether To Clean The Device When Cutting	N
Temperature	25°C
Storage	Storage A
Storage Temperature	Daily Average 10 Degrees Celsius, Warning Notice: 2019-04-01 Inventory Temperature Is Out Of Control At 14:30 To 15:55, Up To 35 Degrees Celsius
Outbound Time	2019-04-01 20 : 00
Districts To Deliver	Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Nebraska, New York, North Carolina, Ohio, Pennsylvania, Tennessee, West Virginia, And Wisconsin.



03

WHOLESALER

Illinois ole,inc

Sales information

Product	HAMI
Inbound time	2019-04-02
Sell time	2019-04-02
Buyers	Anndy,Brian,Enzo,Bowen,Aby, Cosha,Angela... More (90 persons)
No. of product	298
Retailer	Illinois ole inc
Storage Temp.	3°C
Environment	refrigerated
Warranty period	3 days refrigerated
Expired product	N
Latest Transaction	2019-04-02 14 : 33
Environment	Normal

TRACK & TRACE

BLOCKCHAIN

IS NOT ENOUGH!

BLOCKCHAIN

Verify the Authenticity of the Data

INTERNET OF THINGS

Gather Data autonomously ☐ Inventory movement control

ARTIFICIAL INTELLIGENCE

Predictions ☐ Enhance smart contracts ☐ All types of data analytics



**FASTER & LEANER LOGISTICS IN
GLOBAL TRADE**



**AUTOMATING COMMERCIAL
PROCESSES IN LOGISTICS WITH
SMART CONTRACTS**

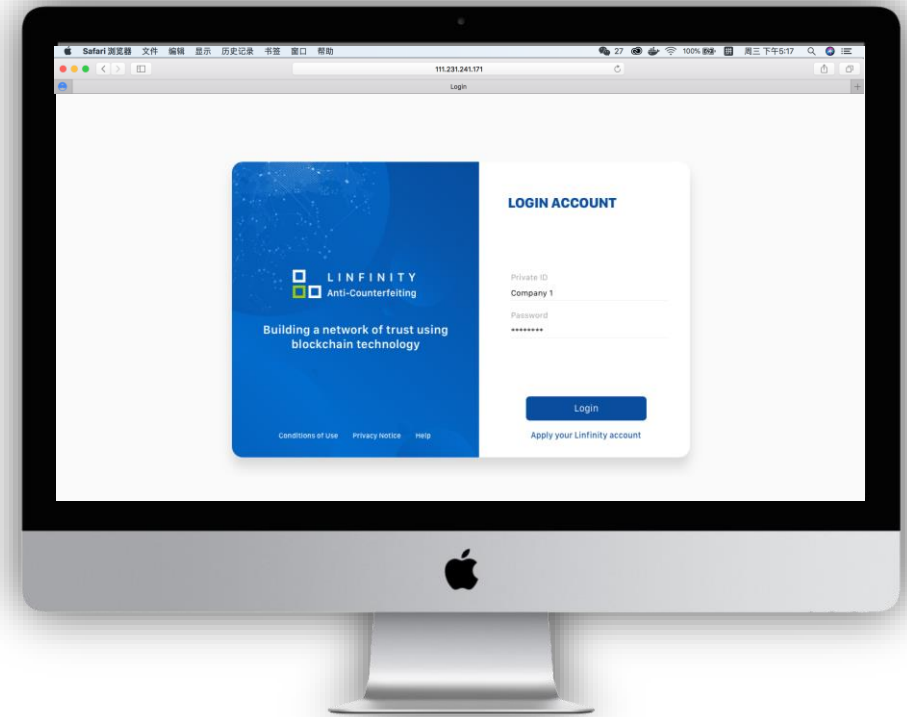


**IMPROVING TRANSPARENCY &
TRACEABILITY IN SUPPLY CHAINS**

APPLICATION LAYER INTRODUCTION

LINFINITY B-PLATFORM has its backend code running on a decentralized peer-to-peer network. This platform works as a business-end for LINFINITY blockchain-based anti-counterfeiting solution. It allows users to upload their products and related information to chain and manage the product authentication by incorporating with smart contact, private keys and etc.

At present, the research and development of the enterprise-end platform has been completed 95%, including the pre-chain information base, the co-chain management, the report information and the warning prompt management, and the personnel authority management. The remaining unfinished 5% is the early warning reminder management, but it not hinders the co-chain operation of the product. At present, enterprises of hair care products, health products, and fruit have participated in the construction of products.



APPLICATION LAYER - HOME PAGE

COMPANY INFORMATION

- A. Company Name
- B. E-mail Address
- C. Company Registration
- D. Business License
- E. Business Contact

The screenshot displays the LINFINITY application interface. On the left is a dark blue sidebar menu with the LINFINITY logo at the top. The menu items are: Home, Product Management (with a dropdown arrow), Product Category, Product, Upload onto the Blockchain, Report Management, Customer Management (with a dropdown arrow), Reward Setting, Redemption List, Regional Consumption, Authority Management (with a dropdown arrow), Personnel Management, and Authority Allocation. At the bottom of the sidebar is a power icon and the text 'Logout'. The main content area has a light blue header with the LINFINITY logo. Below the header are two white panels. The 'Company Information' panel contains fields for Company Name (SHENZHEN CHANSEN TECHNOLOGY AND TECHNOLOGY DEVELOPMENT CO., LTD.), E-mail (support@linfinity.io), Company Registration (247346832654676677fgh37654), Business License (with a license image), Contact Number (7289470291424), and Location (1 Scotts Road Shaw Centre #20-03/04 Singapore 228208). The 'Blockchain Information' panel contains fields for ID (2837486376574), transactionAccountId (GA47E7MD5B7CKNBIBDSF42C2PEV4MBAT2LT3TOCPRHUU7IFMXMUNJ ZT), transactionSecret (SD2RDA6YAUUV7QQXG005N27LHOWCTJGALTRDVRYYV5KKNHYUR7WB5 74F2), issueAccountId (GCG7IV6SVQVAZA6Y4K074V0JWGSPS277IB6AZMIJE703X4YMODHQMD MB), and issueSecret (SBW4P5XEBKOK37V6J3J5L3FRBXYMHHPDKACQ4R4WV4QCMXVZS 6CTC). At the bottom of the Blockchain Information panel is a red download icon and a warning message: 'Warning: Backup of enterprise's key onto your device is strongly recommended in case of information loss.'

APPLICATION LAYER - STATIC DATA MANAGEMENT

Product Management

PRODUCT CATEGORY

2018-09-21 - 2018-09-21 Search Product Name Search

Product Category	Item Description	Creation Date	Creator	Status	Edit
<input type="checkbox"/> All Delete Export Import Activate Disable Add					
<input type="checkbox"/> First-class processed goods	Own product designed and processed by itself	2018-9-21	bowen	Disabled	Edit
<input type="checkbox"/> Trade and business products	Light luxury products for sale in Western Europe and North America	2018-9-21	bowen	Activated	Edit
<input type="checkbox"/> Outsourced processing products	Hybrid product designed by itself	2018-9-21	bowen	Disabled	Edit
<input type="checkbox"/> Trade in light luxury goods Trade in light luxury goods Trade in light luxury goods	Trade in light luxury goods Trade in light luxury goods Trade in light luxury goods	2018-9-21	bowen	Activated	Edit
<input type="checkbox"/> Trade in light luxury goods Trade in light luxury goods Trade in light luxury goods	Trade in light luxury goods Trade in light luxury goods Trade in light luxury goods	2018-9-21	bowen	Disabled	Edit
<input type="checkbox"/> Trade in light luxury goods Trade in light luxury goods Trade in light luxury goods	Trade in light luxury goods Trade in light luxury goods Trade in light luxury goods	2018-9-21	bowen	Activated	Edit
<input type="checkbox"/> Trade in light luxury goods Trade in light luxury goods Trade in light luxury goods	Trade in light luxury goods Trade in light luxury goods Trade in light luxury goods	2018-9-21	bowen	Disabled	Edit
<input type="checkbox"/> Trade in light luxury goods Trade in light luxury goods Trade in light luxury goods	Trade in light luxury goods Trade in light luxury goods Trade in light luxury goods	2018-9-21	bowen	Activated	Edit

1 2 3 Next 2 Pages in Total, go to page Confirm

CATEGORY MANAGEMENT

- Establish a category library to manage the company's own products
- Manage the category's status and content

PRODUCT MANAGEMENT

- Establish a product library to manage the company's own products
- Manage the category's status and content

Product Management

PRODUCT

Product Category Selection 2018-09-21 - 2018-09-21 Search Product Name Search

Product Category	Product Name	Creation Date	Creator	Status	Edit
<input type="checkbox"/> All Delete Export Import Activate Disable Add					
<input type="checkbox"/> Trade and business products	Black brick magnetic bright mask	2018-9-21	bowen	Disabled	Edit
<input type="checkbox"/> Trade and business products	Black brick magnetic bright mask	2018-9-21	bowen	Activated	Edit
<input type="checkbox"/> Trade and business products	Honey citron crystal mask	2018-9-21	bowen	Disabled	Edit
<input type="checkbox"/> Trade and business products	Black Rose Mix Essential Oil Mask	2018-9-21	bowen	Activated	Edit
<input type="checkbox"/> Trade and business products	Pomegranate Seed Complex Oil Mask	2018-9-21	bowen	Disabled	Edit
<input type="checkbox"/> Trade and business products	IELTS Lancome Black Eye Cream	2018-9-21	bowen	Activated	Edit
<input type="checkbox"/> Trade and business products	MARIE DALGAR Magdalene Rose Eyeshadow Palette	2018-9-21	bowen	Disabled	Edit
<input type="checkbox"/> Trade and business products	MARIE DALGAR Magdalene Rose Eyeshadow Palette	2018-9-21	bowen	Activated	Edit

1 2 3 Next 2 Pages in Total, go to page Confirm

APPLICATION LAYER - CO-CHAIN

STATIC INFORMATION

The static information can be carried out by the products.

Upload onto the Blockchain

UPLOAD ONTO THE BLOCKCHAIN

QR-code Generation | Upload History

Authorized Private Key
778c0578569a84b224eadc52756227e7679dc68945eeb74fd69ad742447189a7

Product Category: Trade and business products

Product Name: Black brick magnetic bright mask

Product Description

Brand Category: Trade and business products
Brand Name: Black brick magnetic bright mask
Configuration and volume: Jayjun Black brick magnetic bright mask 25ml (1STEP/10PCS)Functionality
Tested: N/A
Manufacturer: Jayjun Cosmetic Co.,Ltd.141,Namdong-ro,3rd fl. Namdong-gu,Incheon,Korea(GoJan dong)
Distributor: Jayjun Cosmetic Co.,Ltd.526,Namdong-ro,1st,2nd fl. Gangnam-gu, Seoul, Republic of Korea(Yeoksam dong)
Country of manufacture: Republic of Korea
Use by date or use by date after opening: Expires after 36 months, use immediately after openingQuality
Assurance Standards: For defective products,compensation will be made according to the standards of the Consumer Dispute Resolution noticed by the Fair Trade Commission

MFD	2018-09-25
Exp	2018-09-25
WT	120mg
Lot	281790284902X
TST	Upcheck

Remark: A pack of skin brightening sheet masks with rosemary oil which is renowned for its brightening, evening out skin tone and refreshing property.

QR-code QTY: 50

Upload

DYNAMIC INFORMATION

Dynamic information generated during the process of production, such as MDF/EXP/WT, Those can be obtained by IoT equipment.

CO-CHAIN QUANTITY

Co-chain by digital signature technology and SHA-256 encryption

APPLICATION LAYER -REPORT MANAGEMENT

Report Management

REPORT MANAGEMENT

2018-09-21 — 2018-09-21

Product Photo	Receipt Photo	Report Date	Report Location	Reporter	E-mail	Contact Number
		2018-09-21	London	David	7868636725@qq.com	18866554422
		2018-09-21	London	David	7868636725@qq.com	18866554422
		2018-09-21	London	David	7868636725@qq.com	18866554422
		2018-09-21	London	David	7868636725@qq.com	18866554422

1 2 3 Next 2 Pages in Total, go to page

REPORT INFORMATION

- A. Product's Photo
- B. Receipt's Photo
- C. Report Date
- D. Report Location
- E. Customer's Username
- F. Customer's Contact

APPLICATION LAYER - COUNTERFEIT ALERT

Scanning Warning

SCANNING WARNING

Product Category Selection 2018-09-21 - 2018-09-21 Search Product Name

Product Category	Product Name	Product Blockchain Code	QR Content	Scan Times	Location	Last Scan Time
Trade and business products	Black brick magnetic bright mask	WNK	2314235hjfk435hj445j	12	shenzhen, guangzhou...	2019-1-23 20:12
Trade and business products	Black brick magnetic bright mask	WNK	2314235hjfk435hj445j	11	shenzhen, guangzhou...	2019-1-22 10:08
Trade and business products	Black brick magnetic bright mask	WNK	2314235hjfk435hj445j	10	shenzhen, guangzhou...	2019-1-22 8:08
Trade and business products	Black brick magnetic bright mask	WNK	2314235hjfk435hj445j	16	shenzhen, guangzhou...	2019-1-21 12:38
Trade and business products	Black brick magnetic bright mask	WNK	2314235hjfk435hj445j	13	shenzhen, guangzhou...	2019-1-20 14:18
Trade and business products	Black brick magnetic bright mask	WNK	2314235hjfk435hj445j	12	shenzhen, guangzhou...	2019-1-20 10:45
Trade and business products	Black brick magnetic bright mask	WNK	2314235hjfk435hj445j	18	shenzhen, guangzhou...	2019-1-20 9:12
Trade and business products	Black brick magnetic bright mask	WNK	2314235hjfk435hj445j	12	shenzhen, guangzhou...	2019-1-19 10:48
Trade and business products	Black brick magnetic bright mask	WNK	2314235hjfk435hj445j	12	shenzhen, guangzhou...	2019-1-18 13:04

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COUNTERFEIT ALERT

- A. Automatically capture the records with more than 10 scans
- B. Summarize the location of each scan

APPLICATION LAYER - PERSONNEL MANAGEMENT

Authority Management

PERSONNEL MANAGEMENT

2018-09-21 — 2018-09-21 Search

Administrator ID	Username	Position	Creation Date	Creator	Status	Co-Chain Qualification	Permission
232144344	Anndy	CEO	1018-10-16	Christina	Active	Unqualified	Privilege Details
324234325	Bowen	PM	2018-08-10	Christina	Active	Unqualified	Privilege Details
324234325	Bowen	PM	2018-08-10	Christina	Disabled	Qualified	Privilege Details
324234325	Bowen	PM	2018-08-10	Christina	Disabled	Qualified	Privilege Details
324234325	Bowen	PM	2018-08-10	Christina	Disabled	Qualified	Privilege Details
324234325	Bowen	PM	2018-08-10	Christina	Disabled	Qualified	Privilege Details
324234325	Bowen	PM	2018-08-10	Christina	Disabled	Qualified	Privilege Details
324234325	Bowen	PM	2018-08-10	Christina	Disabled	Qualified	Privilege Details

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Support sub-administrator's permission query, password reset, status change

Authority Management

AUTHORITY ALLOCATION

Administrator Information

Administrator ID: 324234325 Select

Administrator Username: bowen

Position: PM

Administrator Right

- Cochain Manager
- Product Manager
- Report Manager
- All
 - Corporate information on the Blockchain
 - Product Management
 - Product Category Management
 - Product Management
 - Upload onto the Blockchain
 - QR-code Generation
 - Upload History
 - Report Management
 - Customer Management
 - Redemption List
 - Regional Consumption
 - Authority Management

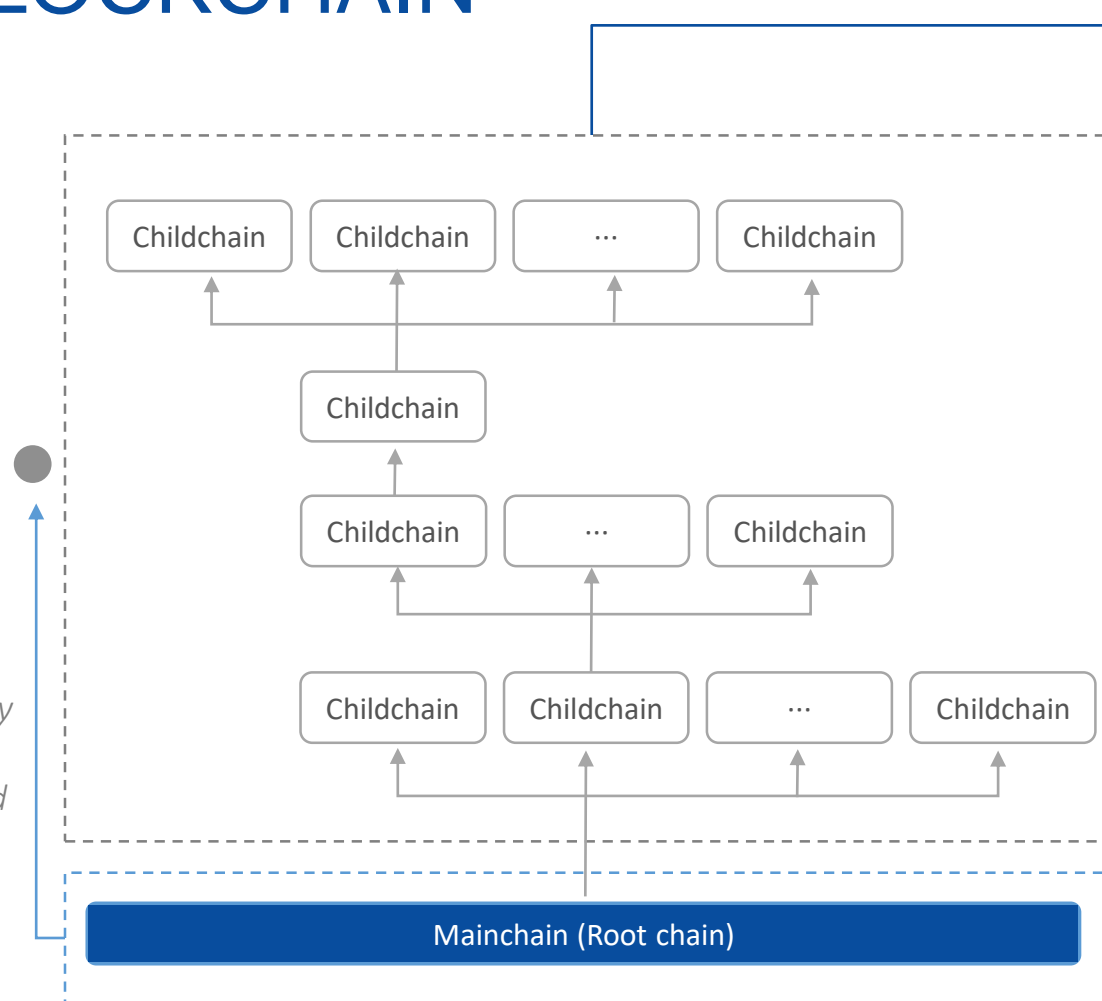
Save

Support sub-administrator authority assignment

LINFINITY BLOCKCHAIN

LINFINITY Mainchain

- Based on Ethereum
- Support smart contract
- Support fragmentation
- PoS+PoW protocol
- Computing power provided by trusted computing devices
- Role: cross-chain clearing and maximum account security



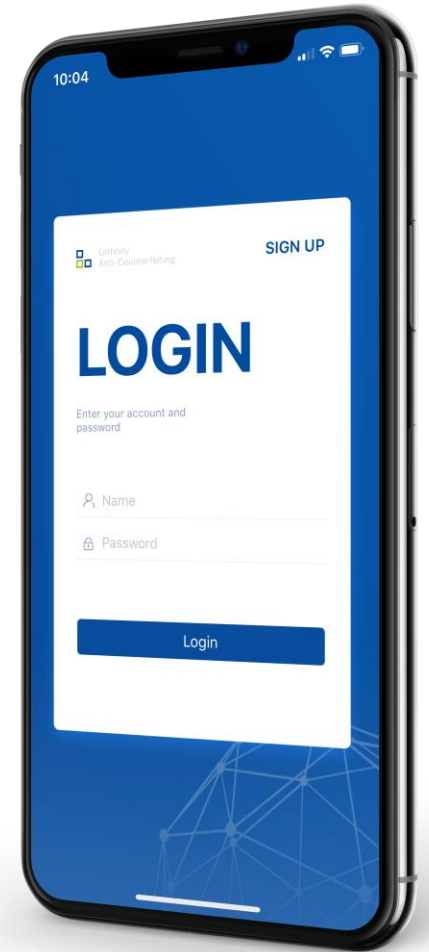
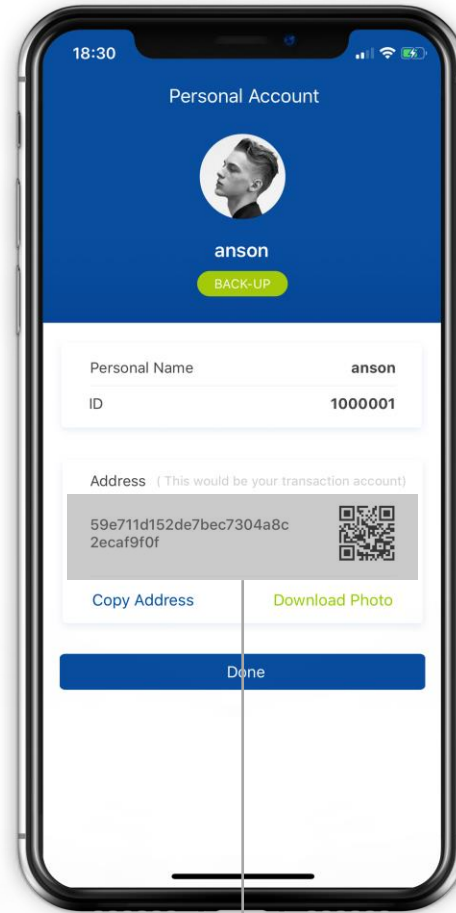
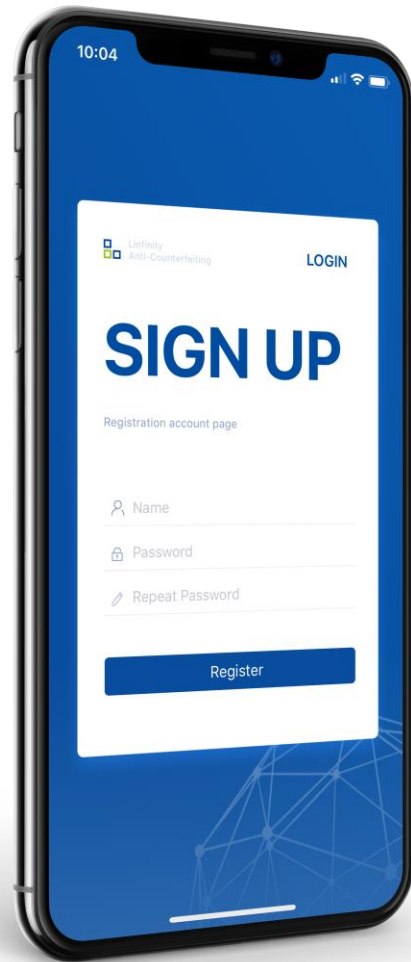
LINFINITY Childchain

- Support FBFT consensus protocol
- Based on STELLAR
- Integrated distributed storage
- Integrated license (DID, PKI or other trusted identity source)
- trusted off-chain computing
- Support business privacy
- Role: storage of tamper-resistant supply chain data

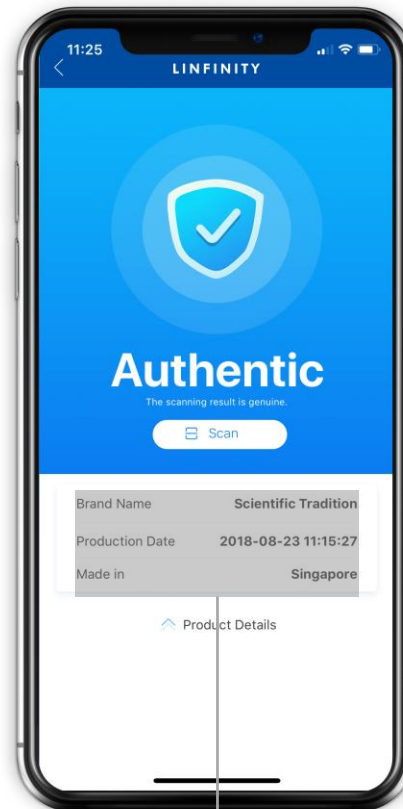
GET STARTED

UNIQUE PRIVATE KEY

Unique private key will be generated for each successful registration. Customer can use this private key to record the product ownership transaction and trace the history.



AUTHENTICATION



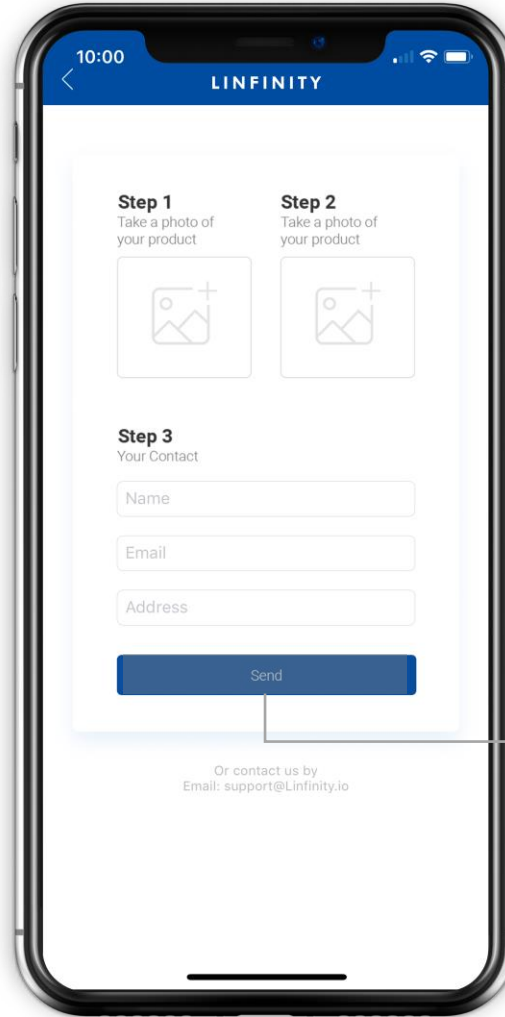
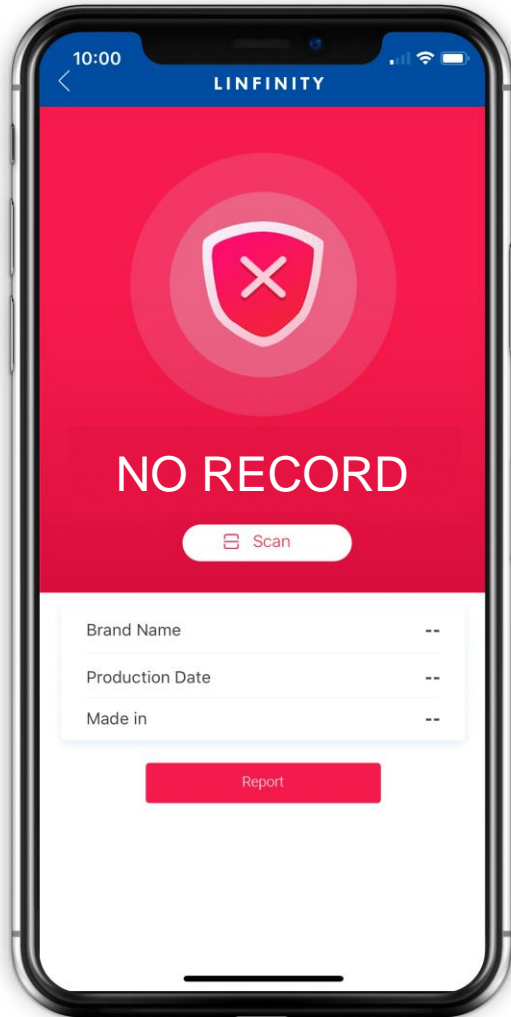
AUTHENTICATION

Customers can check the basic information by a quick scan on the QR code.

CHAIN INFORMATION

Customers can access to the product information recorded on LINFINITY Chain to learn more product details. And ownership transaction will be done at the same time.

AUTHENTICATION



FAKE GOOD REPORT SYSTEM

If the product is counterfeiting, the report system will be triggered. Customers can appeal by uploading the related information. All the information will be sent to manufactory for handling.

QR CODE 2.0 VERSION



Embossed Feel

Raised printing giving the note a strong embossed feel by touch.

Dynamic Color-changing Pattern

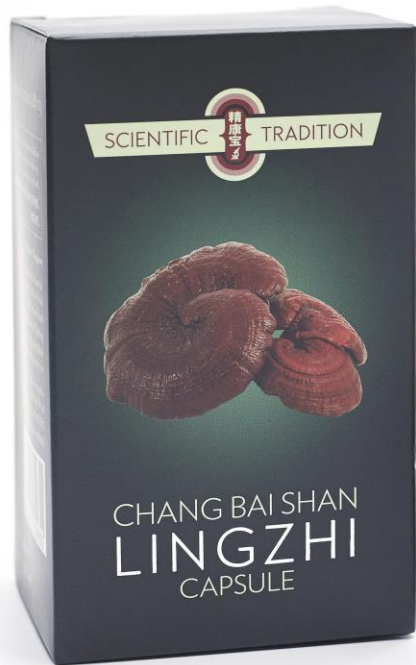
When the QR code is tilted, two visual effects appear: the color of the pattern shifts between green and purple.



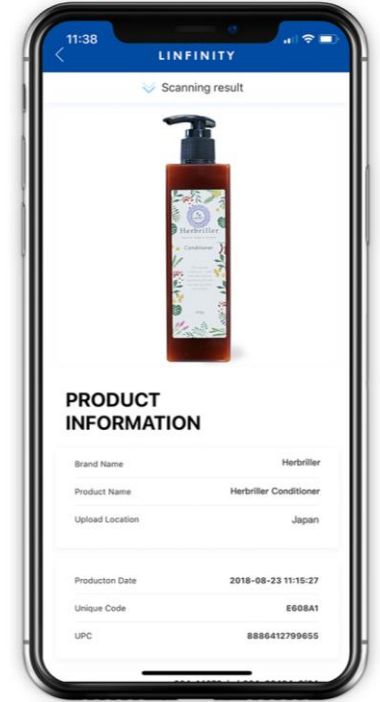
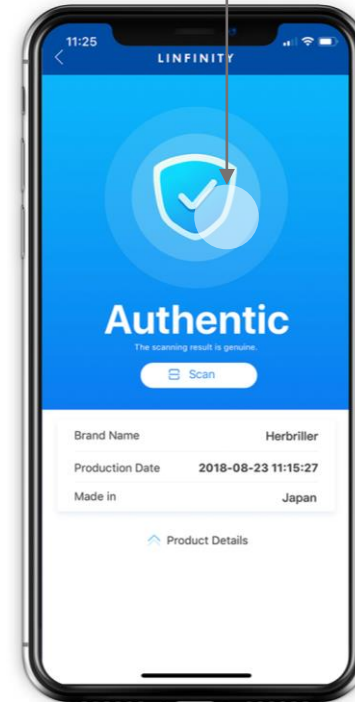
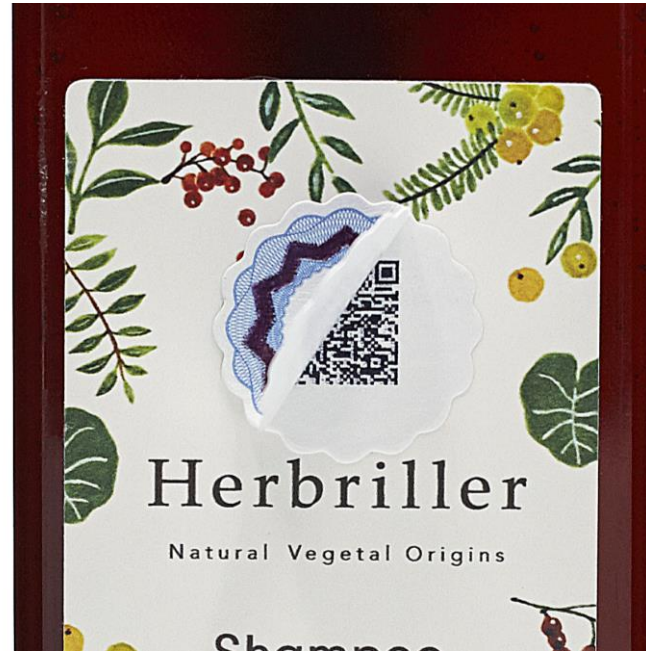
Two-layers Design

The bottom layer is designed with a fragile label to ensure that it is not copiable.

SCIENTIFIC TRADITION



HERBRILLE



TRACK & TRACE

BLOCKCHAIN

IS NOT ENOUGH!

BLOCKCHAIN

Verify the Authenticity of the Data

INTERNET OF THINGS

Gather Data autonomously ☐ Inventory movement control

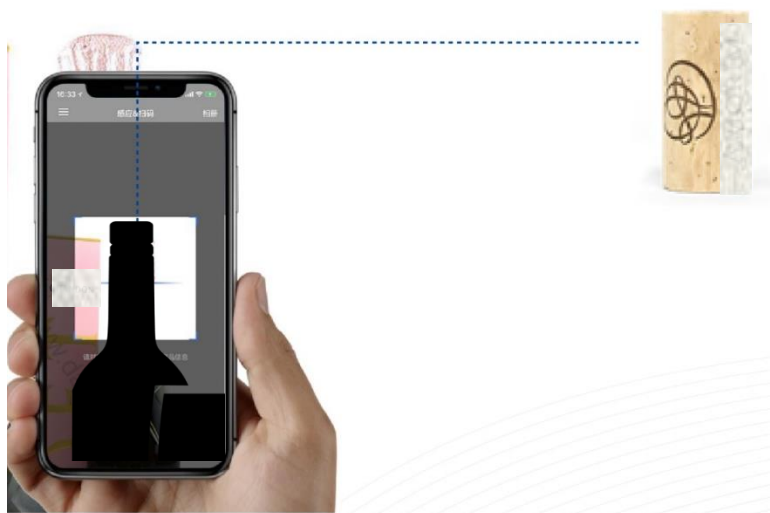
ARTIFICIAL INTELLIGENCE

Predictions ☐ Enhance smart contracts ☐ All types of data analytics

TRACK WITH FUN



TRACK WITH FUN^{AR}





RAW MATERIAL



FACTORY



PRODUCT



TRANSPORTATION



EXPORT



DISTRIBUTOR



WHOLESALER



RETAILER



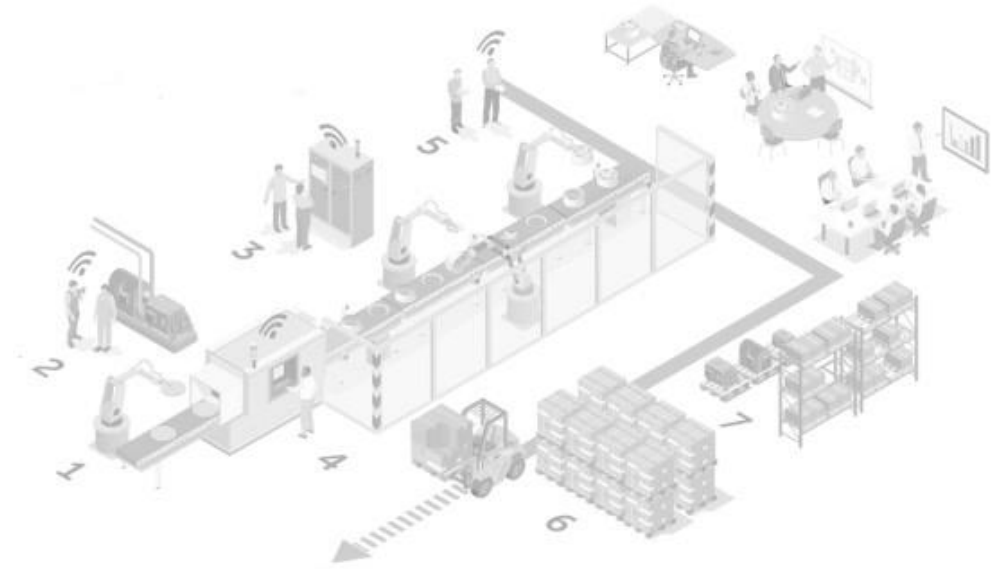
CUSTOMER



IoT Data Collection
& AI Data Input & Filter & Analysis

SMART FACTORY INDUSTRY 4.0

Within the region, there is a growing willingness to make manufacturing smart using Artificial Intelligence (AI), Big Data, and the Internet of Things (IoT). The hyperconnected Industry 4.0 environment also makes the security of digital assets a critical area. The decentralized, digitized, public, and shared blockchain ledger system shows the potential for strengthening cybersecurity across traditional and smart industries.



PARTNERSHIP APO

LINFINITY formally signed a Memorandum of Understanding (MOU) with the Asian Productivity Organization (APO) in Tokyo, Japan, to enable widespread adoption of blockchain-based cybersecurity technologies in APO member countries. The initiative will help Asia-Pacific enterprises join smart manufacturing chains through the innovative use of blockchain solutions.



LINAFINITY

MEDIA
EXPOSURE

Blockchain-based Singapore Company to Curb Fakeries

Wed Jan 2, 2019 - 05:30am UTC



LINFINITY recently formally signed a Memorandum of Understanding (MOU) with the Japanese hair care company Herbriller, and will enter a new developmental phase for its upcoming anti-counterfeiting and source tracking DApp-based trial.



Orchard Road, Singapore – January 2, 2019 —

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“LINFINITY will always take the real needs of the market as the starting point, and cooperate with more enterprises to help them complete the improvement and upgrading of their supply chain through blockchain, and we commit to making unremitting efforts to promote the development of blockchain commercialization.”

--- Reuters



许多人听到“区块链”（blockchain）这个名词，就直接联想到数码货币，例如“比特币”。其实，区块链并非新的概念，而是一种特殊的分布式数据库，其主要作用是储存信息。

在区块链的世界里面，没有中心节点，每个节点都是平等的，保存于整个数据库。任何的人都能向任何一个节点，写入或读取数据，因为所有节点最后都会同步，以保证区块链的一致性。如今，市面上以区块链的名义进行融资的事件层出不穷，这不仅影响区块链此新技术

的商业化发展，让许多企业迟迟不敢采用区块链，更不清楚该从何处开始沿用此技术。

这些还未投入区块链行列的企业，一心以为在原有的商业模式转向“区块链化”的过程会非常复杂，其实，这一点也不正确，反而，让这些企业白白错失能为商业带来巨大潜力和好处的机会。

LINFINITY作为全球首屈一指将区块链、物联网、人工智能与传统企业相结合的分布式供应链平台，在世界多个国家拥有丰富的商业资源。

该公司首席执行官Andy Lian受访时指出，新加坡中小企业与LINFINITY合作，不仅可享受LINFINITY的高品质区块链服务，更重要的是，LINFINITY可让中小企业的产品更进一步。

LINFINITY的优势包括：

- 自成立以来，LINFINITY一直致力于区块链知识的普及，关注区块链技术商业化的落实及发展。通过LINFINITY往全球市场迈进，企业和用户将能真正理解区块链所带来的益处而从中受惠。
- 由于企业并不需要把整个业务流程的信息都“区块链化”，只需根据需求为必要的信息“上链”，所以区块链一点也不复杂，而且LINFINITY也会依据企业的需求，透过多种方法协助解决应用问题。
- 区块链的商业化过程，需要多方的鼎力合作，LINFINITY也积极开展多方对话，包括与松下，亚洲生产力组织（APO），MASCI等大中型跨国企业展开科技论坛，利用区块链技术推动行业的发展。

LINFINITY要打破市场迷思

中小企业采用‘区块链’不复杂

"The commercialization of blockchain cannot be achieved by the business community alone, we need to work together with governmental and international forces."

--- Singapore Shin Min Daily News

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From the Jul 2018 issue 1,062



“Singapore Startup Wants Change in Perspective on Blockchain.”

---- Forbes

Linfinity — a home-grown Singapore company that harnesses blockchain technology, Internet of Things (IoT) and Artificial Intelligence (AI) to create robust supply chain ecosystems — aims to help businesses move towards a “trust-based economy”.

-- The New Paper

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The cost of counterfeits
 According to Research and Markets' Global Brand Counterfeiting Report 2018, the total counterfeiting amount globally reached US\$1.2 trillion (S\$1.66 trillion) in 2017 and is expected to reach US\$1.82 trillion by the year 2020. The impact on humans should not be overlooked either. In 2008, an estimated number of 300,000 babies in China fell ill after consuming melamine-tainted milk powder. Six of them died. Stamping out counterfeits is thus a matter of great importance — not only to safeguard revenue but to remove substandard products which can potentially cause great harm to human lives.

How blockchain can help
 In a nutshell, a blockchain is a decentralised, cloud-based ledger of transactions. All parties involved in those transactions have copies of the ledger locally stored, which are simultaneously updated every time a new transaction takes place. Blockchain thus provides a permanent, up-to-date and tamper-proof record of transactions. "It ensures that information entered is reliable; blockchain acts as a shared, trustworthy ledger recording all transactions; and IoT functionality allows multiple devices to be connected to, and to communicate with, each other," says Mr Lian. "We need to revolutionise current methods of doing things. This will allow for a greater degree of integration."

Going global
 LINFINITY's grand vision is to build the world's first trusted, traceable supply chain ecosystem based on blockchain technology. The company signed Memorandums of Understanding (MOUs) with local and regional companies in May. It also achieved gratifying results on a pilot trial implementing its anti-counterfeiting solution on Scientific Tradition's Chang Ba Shan GTJ Lingzhi products. In this process, LINFINITY marks products that pass through its system with a quality certification sticker that conceals a QR code. Using LINFINITY DApp — LINFINITY's blockchain-based mobile app — customers can scan the QR code to check the product information, a step that will greatly boost transparency and fortify supply chains against fraud. LINFINITY is trying to get more people to look beyond the hype, and recognise blockchain's benefits through different dialogue sessions in Singapore, Japan, South Korea, Hong Kong, United Kingdom and Mainland China. The company jointly hosted the International Maker Week in Shenzhen (Oct 12 to 15) with the Chinese government. It was a step in the right direction as it increased LINFINITY's business influence and application of its blockchain solutions in the Greater China market.

To LINFINITY and beyond

Singapore company LINFINITY uses blockchain to create a trustworthy supply chain ecosystem

BY JOSHUA WONG

Counterfeits are a major problem in the global supply chain. From tainted or substandard inputs to fake products, they not only cause revenue and reputational loss, but also potential harm to consumers. Once trust is lost, it is hard to regain. This is why manufacturers are moving towards fortifying their entire supply chain, ensuring integrity from start to end, and that all steps of a manufacturing process conform to proper safety standards. LINFINITY — a home-grown company that harnesses blockchain technology, Internet of Things (IoT) and Artificial Intelligence (AI) to create robust supply chain ecosystems — aims to help businesses move towards a "trust-based economy". One might think that bigger companies have greater budgets to invest in blockchain technology. But small and medium-sized enterprises (SMEs) are also well-positioned to gain from blockchain technology. "The flexibility of SMEs makes them the first beneficiaries of blockchain. Compared to big companies, SMEs can integrate blockchain more easily into their supply chain management systems," says Mr Andy Lian, chief executive officer of LINFINITY.

LINFINITY DApp — LINFINITY's blockchain-based mobile app — authenticates products that bear its quality certification sticker (below), concealed as a QR code.

Authentic

PRODUCT INFORMATION

PRODUCT INFORMATION

Mr Lian speaking at 2018 Blockspace Asia, a blockchain event held at Zouk, Singapore in July (above); LINFINITY's booth at Huobi Carnival, South Korea (right). PHOTOS: LINFINITY



S\$1.20

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Friday, July 15, 2016

Fighting counterfeiting with blockchain

Local company LInfinity helping customers fight sale of counterfeit by integrating blockchain into supply chains

IN AN increasingly digitalised world, companies rely on global supply chains which have seamless connectivity. In the era of Industry 4.0, connected manufacturing equipment, RFID (radio frequency identification) scanning and digitised shipping records are the norm for global supply chains.

Despite all the investment in digitalisation, more often than not, gaps exist in the supply chain which result in companies not having full visibility of their products as well as raw materials throughout the delivery cycle. This is because within the digital infrastructure of the supply chain, there are still pockets of analogue interfaces. For example, while a factory may record its production digitally, when the products are shipped, a PDF document could be created for the shipping label. Though this document is available online for viewing, it is not digitally connected to the rest of the supply chain in a way that is required for full visibility of where the product is in real time.

Usually, a supply chain should encompass end-to-end flow of information, products, services and money in order to close existing analogue gaps. Organisations are exploring innovative technology to meet existing consumer demands and optimise efficiencies. Blockchain is one of these technologies with maximum potential.

Game changer

Blockchain technology is a potential game changer, not only in the supply chain but in a host of other applications and industries. At its core, blockchain is a distributed digital ledger that links in the digital and records transactions and events. Since the technology uses well-established cryptographic principles, it operates as a repository of information which can be obtained through a peer-to-peer community.

Since a typical blockchain works within a decentralised network, all participants have their own copy of the ledger which they can update with new entries to the chain using well-established and consensus-driven protocols. As a result, each participant can only change their own ledger and this change is visible to all the users of the blockchain which results in a high degree of transparency, which in turn generates trust.

A blockchain is essentially a distributed encrypted database that is virtually impossible to hack. Many consider it to be one of the biggest innovations in computer science. This digital distributed ledger function has immense potential to cause disruption in a variety of industries since it is money peer-to-peer and does not need a central au-



In a bid to raise awareness and educate the public on blockchain and how it can benefit industries, LInfinity has made large strides beyond Singapore. The firm has established LInfinity Talks, the company's self-curated global real-time platform that disseminates blockchain projects, as well as connects with like-minded businesses to further explore blockchain technology.



Arndy Lian, CEO of LInfinity Singapore, notes that as the demand for transparency for products increases, the application of blockchain will not only improve supply chain efficiency, but allow reliable collection of data.



“Despite all the investment in digitalization, more often than not, gaps exist in the supply chain which results in companies not having full visibility of their products as well as raw materials throughout the delivery cycle.”

-- The Business Times

“We are serious about asserting ourselves as a player within the blockchain industry. With our launch on the market, we hope to be able to foster and encourage inter-platform trading with Linfinity tokens.”

-- The Straits Times

Local company Linfinity offers supply chains a solution to combat fraud



Linfinity CEO Anndy Lian shares his views on blockchain at Linfinity Talks, the company's self-contained global roadshow platform that demonstrates blockchain projects and seeks out collaborations with like-minded businesses to further explore blockchain technology. PHOTO: LINFINITY

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Supply chains besieged by counterfeit goods may soon find an answer in blockchain

Finding out your swish designer bag is a fake might lead to outrage. But manufacturing scams can have far more drastic consequences — both for brands and consumers.

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By AccessWire, July 11, 2018, 10:15:00 AM EDT

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TOKYO, JAPAN / ACCESSWIRE / July 11, 2018 / Linfinity Talk culminated their roadshow in Tokyo on July 1, 2018, with the event attracting over 200 Japanese blockchain enthusiasts. During the event, Linfinity partnered with Befund and Qbao, and invited BCoin from Singapore and CoinOtaku from Japan for an in-depth discussion about blockchain development and its applications



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