

XIC12

BLOCKCHAIN FOR SUPPLY CHAIN AND LOGISTICS FORUM

www.blockchainsupplychain.io

HOUSTON, TEXAS

MAY 21-22, 2018

Assessing the Realities and Opportunities of Blockchain Implementation in Supply Chains

x|c²



Mark Toohey
Founder
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www.blockchainsupplychain.io

Blockchain Technology



Assessing the Realities and Opportunities

of Blockchain Implementation in Supply Chains

-- Mark Toohey

tbs
x3



BLOCKCHAIN
MANUFACTURING,
DISTRIBUTION AND
LOGISTIC SOLUTIONS

Assessing Reality



1. **Why bother** with blockchains?
2. Are we ready for **enterprise** use?
3. Can blockchain **solve** major problems?
4. How could that be **achieved**?
5. Is this a **reality**?

Blockchain Utility



1. Why bother with blockchains?

Blockchain

=

?

Basic Concept



Blockchain

=

Collaboration

**Participants
can take out
more data
than they put in**

Enterprise Use



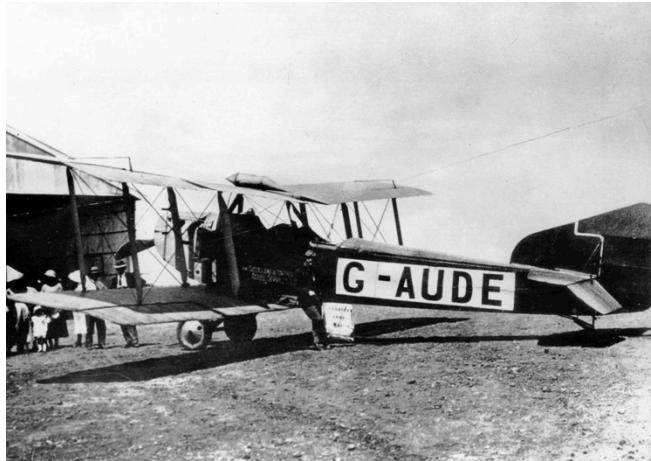
2. Are we ready for **enterprise** use?

New Concepts



Bitcoin showed what was **possible**

Growing Capability



This

- No need to follow rivers or roads
- Cargo and passenger capability is being built



Not this

Early Concepts



Needed Infrastructure



Aviation required:

- Runways
- Terminals
- Control towers
- Air routes
- Air safety
- Navigation
- Stronger engines

Blockchain requires:

- Energy efficiency
- Data access control
- Consensus protocols
- Industry standards
- Proven reliability
- Favourable legislation
- Strong businesses

Killer Apps



1. What was **aviation's** killer apps?
2. What will be **blockchain's** killer apps?

Aviation's Killer Apps



Rapid
innovation

Blockchain's Killer Apps?



Will military use of blockchain drive **adoption** and **invention** of tools and processes?

Key benefits:

- Certainty or origin
- Supply chain visibility
- Data certainty
- Auditability
- Supply line security

Problem Solution



3. Can blockchain **solve** other major problems?

Why?



1 million people die
each year from
fake and counterfeit
pharmaceuticals
- **Interpol**

<http://www.insightcrime.org/news-briefs/counterfeit-drugs-kill-1-million-annually-interpol>

Failed System

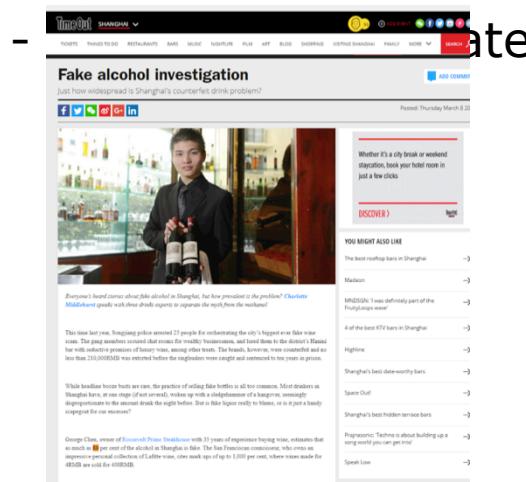


***“We now have more fakes
than real drugs in the market.”***

Christophe Zimmermann
anti-counterfeiting and piracy co-ordinator
of the World Customs Organisation

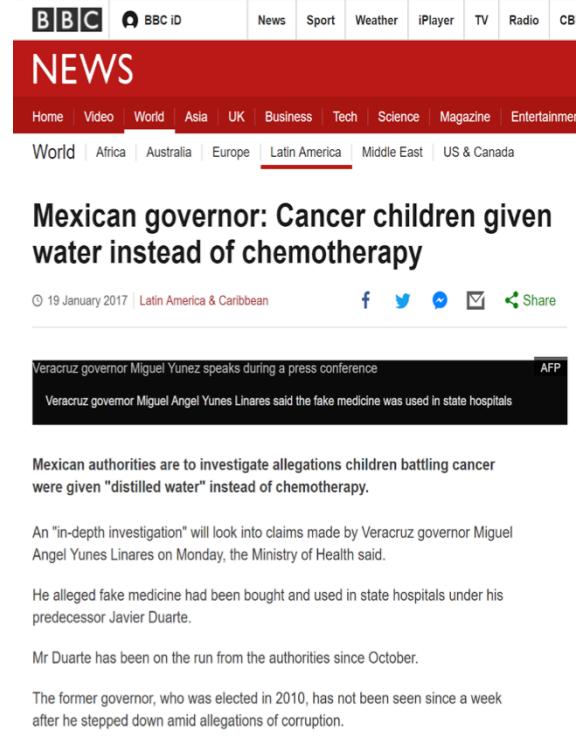
Grim Facts

**Up to 80 percent
of alcohol may be
fake**



The screenshot shows a news article from TimeOut Shanghai. The headline reads "Fake alcohol investigation". Below the headline, there's a photo of a person behind a bar counter. The text discusses the investigation of fake alcohol in Shanghai, mentioning that 25 people were arrested and 210,000 RMB was seized. It also notes that fake alcohol has been found in various types of bars and restaurants.

Fake alcohol investigation
just how widespread is shanghai's counterfeit drink problem?
[fb](#) [tw](#) [in](#) [g+](#)
Published Thursday March 23
Photo: Thursday March 23
YOU MIGHT ALSO LIKE
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Shanghai's best hidden terrace bars →
Progressive? Techy? Is your building cool or song world you can get into? →
Song Low →
George Chan, owner of *French Press*, traditional with 10 years of experience having wine, estimates that as much as 80 per cent of the alcohol in Shanghai is fake. The San Francisco connoisseur, who owns an impressive personal collection of 1,000 wine, says most of up to 1,000 per cent, where wines made for China are sold for 100RMB.



The BBC News article is titled "Mexican governor: Cancer children given water instead of chemotherapy". It was published on January 19, 2017, under the Latin America & Caribbean category. The article quotes Veracruz governor Miguel Yunes Linares as saying that fake medicine was used in state hospitals. It also mentions that Mexican authorities are investigating allegations that children battling cancer were given "distilled water" instead of chemotherapy. The BBC logo is visible at the top of the page.

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Mexican governor: Cancer children given water instead of chemotherapy

© 19 January 2017 | Latin America & Caribbean [f](#) [tw](#) [in](#) [g+](#) [Share](#)

Veracruz governor Miguel Yunes speaks during a press conference AFP
Veracruz governor Miguel Angel Yunes Linares said the fake medicine was used in state hospitals

Mexican authorities are to investigate allegations children battling cancer were given "distilled water" instead of chemotherapy.

An "in-depth investigation" will look into claims made by Veracruz governor Miguel Angel Yunes Linares on Monday, the Ministry of Health said.

He alleged fake medicine had been bought and used in state hospitals under his predecessor Javier Duarte.

Mr Duarte has been on the run from the authorities since October.

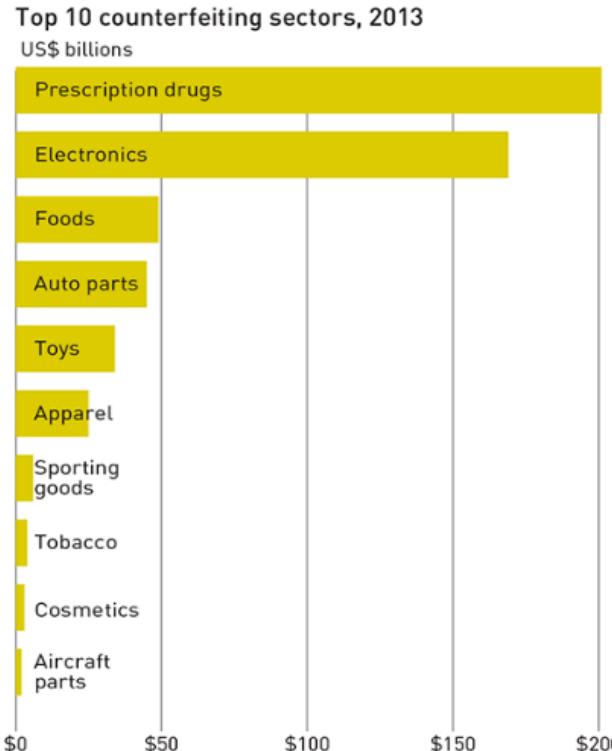
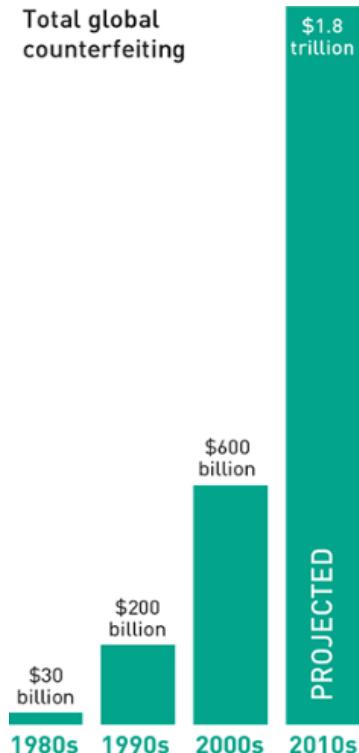
The former governor, who was elected in 2010, has not been seen since a week after he stepped down amid allegations of corruption.

tbs X3®

**10 percent
of food imported
into the UK are off
suspicious origin**

**United Kingdom
Food Standard Agency
estimate**

Problem Scale



Fraud and Counterfeit

Source: NetNames, "The Risks of the Online Counterfeit Economy," 2016; NetNames, "Counting the Cost of Counterfeiting," 2015; Strategy& analysis

Food Fraud



Food fraud prevalence increasing

- Global Food fraud ~ \$50 billion (3)
- 10% US food adulterated (4)

Not what it seems

Source: West Yorkshire Joint Services

Fruit juice



Contained flame retardant

Herbal tea



Slimming tea made with a banned prescription drug

Meat



14 samples of mince contained different species plus one with a rabbit bone

Vodka



Contained anti-freeze

Ham



On a pizza was found to be poultry

Cake glitter



Cupcakes with non-edible glitter made from plastic film

Cheese



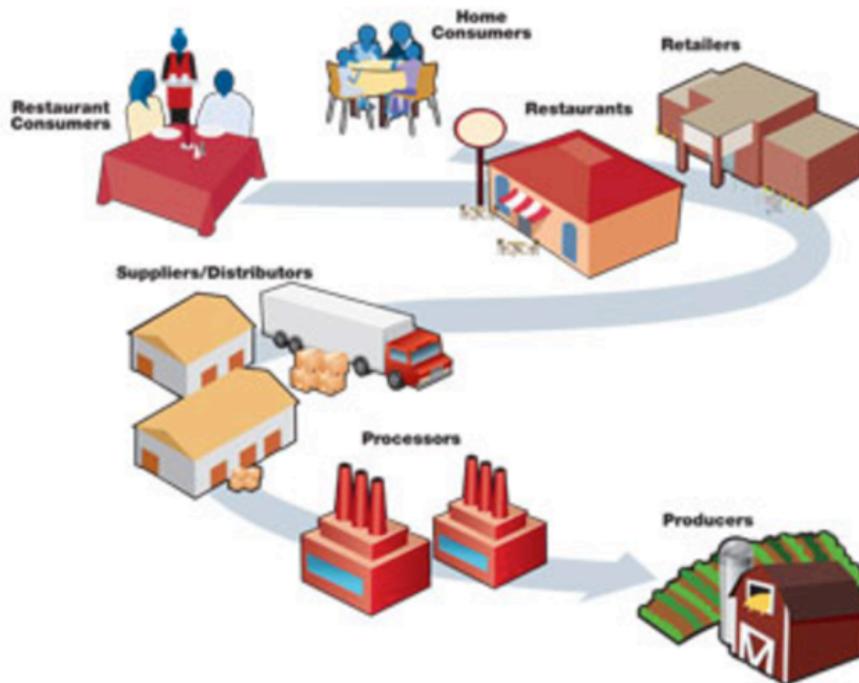
Mozzarella contained only 40% cheese

Not getting
what you
paid for

Food Origins



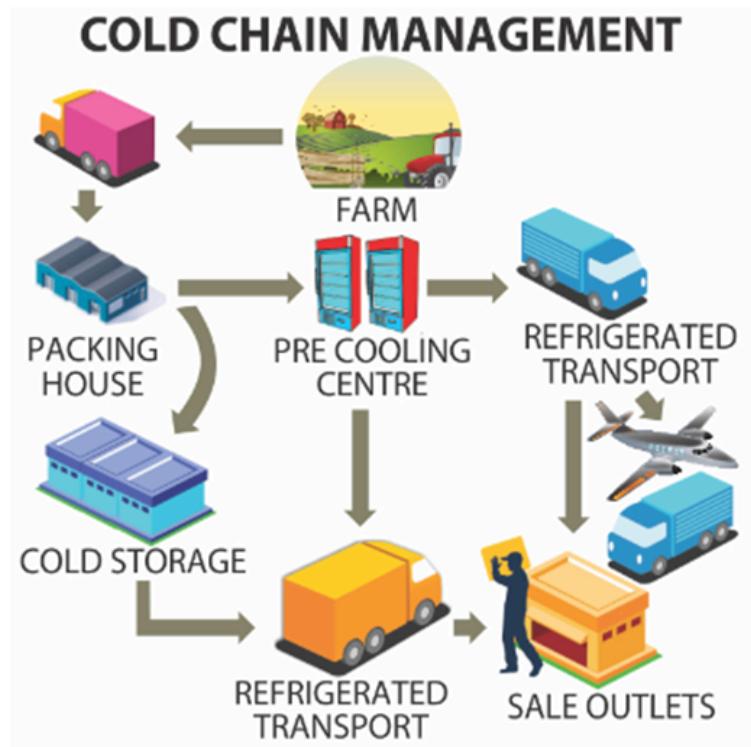
Tracing the Food Back to the Source



Knowing the **true origins** of what you eat:

1. Source records
2. Provenance certainty
3. Accreditation, certification and customs records

Food Safety



Certainty that your food **is safe**:

1. Catch/harvest data
2. Auditable and time stamped data
3. Breach alerts

TBSx3 Technology



4. How could that be **achieved**?

The Solution



1. Cryptographic certainty
2. Tracking logistics
3. Blockchain technology

To be sure x 3

Layer 1 - Cryptographic Certainty



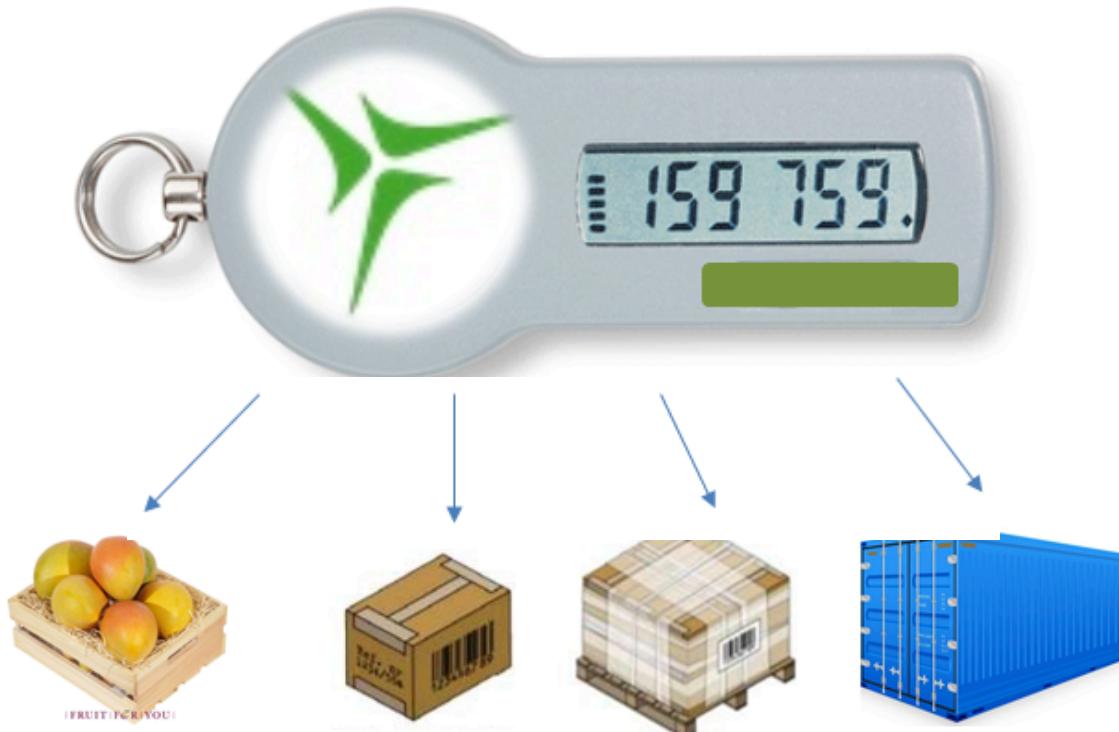
Existing technology - Public key 6 digits



Blockchain technology - Public key **40 alphanumeric** inputs

03c6691ebdd161363457e3c73a8ed44186536cf9

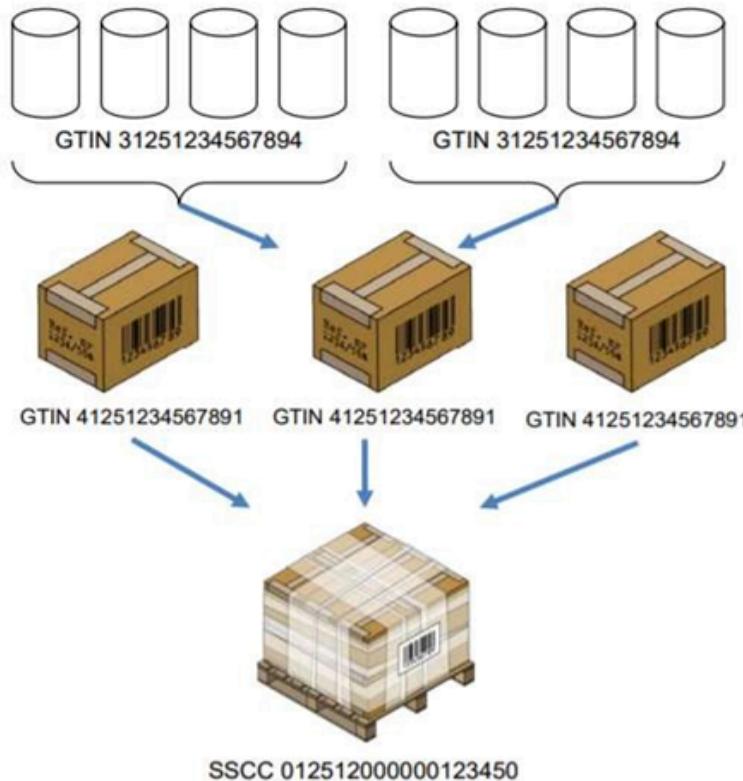
Layer 1 - TBSx3 Tokens



Every token:

- is **encrypted**
- is **unique**
- can be **transferred**
- can be **aggregated**

Layer 1 - Encrypted Serialisation



GTIN

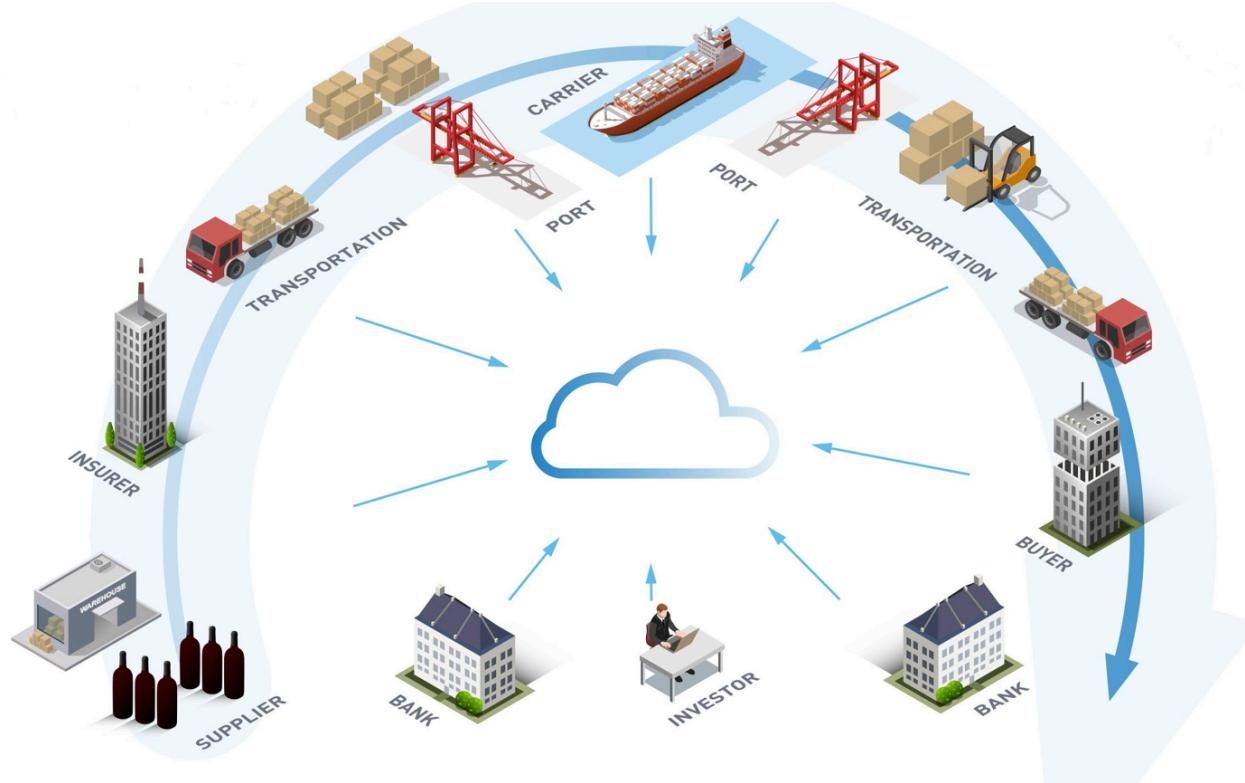
Identification of trade items on all levels of packaging that are sold at retail check-out or are in the seller's price list.

Pallet and logistics label with SSCC

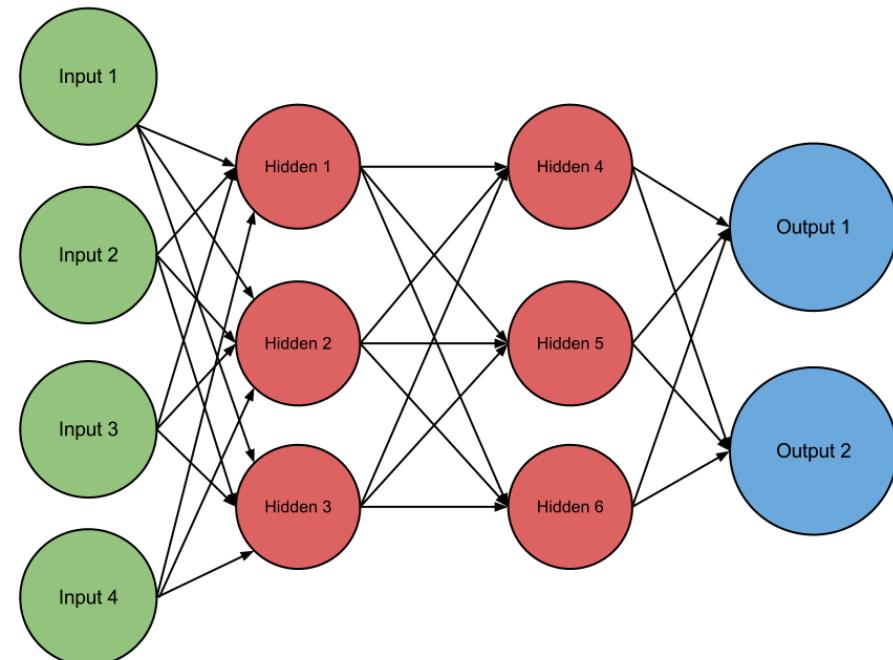
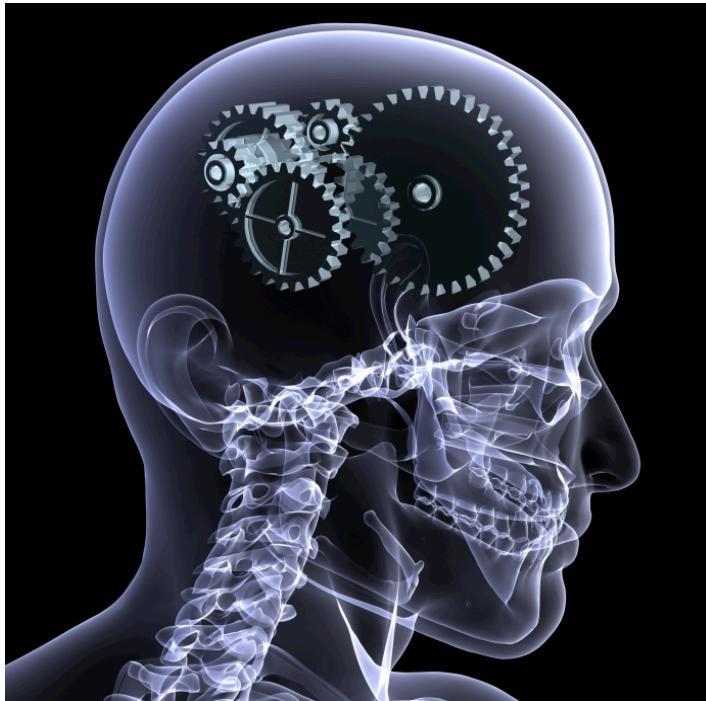
SSCC

Unique identification of a logistics unit. Valid for the lifetime of that unit to only be used for material handling. The transport or logistics unit may also display a GTIN if that unit is part of the seller's offering and contained in the price list.

Layer 2 - Logistics Tracking



Layer 2 - Logistics Machine Learning



Layer 3 - Blockchain Technology



Prevents a **double** spend

This **destroys** the counterfeit business model

Established Consortium



5. Is this a **reality**?

Strong Alliances



DP WORLD
Australia



SCHENKER

DP World



DP WORLD
Australia

TOP 50 WORLD CONTAINER PORTS

Rank	Port	Volume 2015 (Million TEU)	Volume 2014 (Million TEU)	Volume 2013 (Million TEU)	Volume 2012 (Million TEU)	Volume 2011 (Million TEU)	Website
1	Shanghai, China	36.54	35.29	33.62	32.53	31.74	www.portshanghai.com.cn
2	Singapore	30.92	33.87	32.6	31.55	29.94	www.singaporepsa.com
3	Shenzhen, China	24.20	24.03	23.28	22.94	22.57	www.szport.net
4	Ningbo-Zhoushan, China	20.83	19.45	17.33	16.83	14.72	www.mardep.gov.hk
5	Hong Kong, S.A.R., China	20.07	22.23	22.35	23.12	24.38	www.mardep.gov.hk
6	Busan, South Korea	19.45	18.65	17.59	17.04	16.18	www.busanpa.com
7	Qingdao, China	17.47	16.62	15.52	14.50	13.02	www.qdport.com
8	Guangzhou Harbor, China	17.22	16.16	15.31	14.74	14.42	www.gzport.com
9	Jebel Ali, Dubai, United Arab Emirates	15.60	15.25	13.64	13.30	13.00	www.dpworld.ae
10	Tianjin, China	14.11	14.05	13.01	12.30	11.59	www.ptacn.com
11	Rotterdam, Netherlands	12.23	12.30	11.62	11.87	11.88	www.portofrotterdam.com
12	Port Klang, Malaysia	11.89	10.95	10.35	10.00	9.60	www.pka.gov.my
13	Kaohsiung, Taiwan, China	10.26	10.59	9.94	9.78	9.64	www.khb.gov.tw
14	Antwerp, Belgium	9.65	8.98	8.59	8.64	8.66	www.portofantwerp.com
15	Dalian, China	9.45	10.13	10.88	9.92	8.40	www.dlport.cn
16	Xiamen, China	9.18	8.57	8.01	7.20	6.47	www.portxiamen.gov.cn
47	Pusan, South Korea	A/A	B/A	C/A	D/A	E/A	F/A



DP WORLD
Australia

DB Schenker



Today around 95,000 employees represent DB Schenker worldwide in 130 countries



DB Schenker locations and employees



Date: 31.12.2013, full-time employees (FTE)

DB Mobility Logistics AG, Transportation and Logistics division



Validated Trial



Lead Partner



- Lead partner for TBSx3's initial shipping trial
- Globally, DP World Group have 77 terminals on 6 continents
- By 2020, the group intends to handle ~100 million containers per year



International Companies



- Hamburg Sud and DB Schenker also agreed to work with TBSx3 on the trial
- DP World Group introduced DB Schenker, a major trucking business that serves the DB World Group internationally
- Hamburg Sud transported the container from Melbourne to China
- DB Schenker carried containers from DB World's port in China to the distribution warehouse

Industry Support



Ius WINES

- Ius Wines, a Coonawarra-based global wine company, was also a participant in the trial
- The trial involved the shipment of Ius wine in a container from Coonawarra through the entire trade logistics system and in the distribution system in China
- Visy have also expressed interest in partnering with TBSx3



Trial Insights



General

- Humans make mistakes
- LCL complications and vulnerability

Cold chain

- Battery life
- Battery type
- Safe operating temperatures
- Air cargo restrictions

A faded, light-colored photograph of a person from behind, wearing a white lab coat and holding a clipboard. Overlaid on the image is a large, semi-transparent black text block containing the following words:

obtain -
from teaching
learning. not
acquisition
person w

The text is arranged in a staggered, overlapping fashion.

Solid Platform



Media Coverage



Media Coverage

THE AUSTRALIAN*



Logistics

FOOD
navigator-asia.com

DCN
DAILY CARDIO NEWS

WorldCargo
NEWS

PORT STRATEGY
INSIGHT FOR PORT EXECUTIVES

PORT
TECHNOLOGY

ComputerWeekly.com

transportweekly

Trailer

TRANSPORT
& LOGISTICS
NEWS

American Shipper

InnovationAus.com

CCN



LOGISTICS &
MATERIALS HANDLING

ECONOTIMES

All the News that's Fit to Mine
BlockTribune

logistics

CARGO FORWARDER GLOBAL
News from the Air Cargo Industry
Actual Analytical Predictions

logistics
manager

cryptonews

Investment Magazine

CRYPTOSLATE

Industry Links



Bitcointalk.org

澳洲比特币交易所参加政府支持的区块链代表团访问纽约

澳大利亚政府派出一个26人代表团——其中包括比特币交易所和区块链初创公司，去纽约参加Consensus 2017（2017年共识大会）——行内的一个著名盛会。

[Read Full Article](#)



CoinPang

코인 투자리 마스터풀 - 漢語
호주 TBSX3 위조품 처리를 위한
Blockchain Trial 원료

호주 블록 체인 회사인 TBSX3는 가짜 제품 문제를 해결하기 위해 혁신적인 기술로 가장 큰 시험을 성공적으로 마쳤습니다.

[Read Full Article](#)

简书

区块链+币圈晚报5.23

CoinDesk의 “2017年共识”汇集了全球各地的企业、政府人员和项目经理，可谓是全球性区块链行业大能云集的会议。大家在这儿探讨各种可能性和行业中存在的问题。一些政府和企业也可以通过会议了解各种项目来获得适合自己的区块链解决方案。

[Read Full Article](#)



金色财经
区块链接技术企业TBSX3与港口物流企业合作打击假药供应链

金色财经讯-澳大利亚区块链技术企业TBSX3与港口物流企业1-Stop Connections达成合作协议，合作将区块链技术集成到港口安全架构中，组织假药品流动到市场中。

[Read Full Article](#)



Bixin 币信 HK
澳大利亚：官方区块链代表团访

当日，澳大利亚政府派出一个包括比特币交易所和区块链初创公司成员的26人代表团去纽约参加2017年的共识大会。

[Read Full Article](#)



HOJU MONEY
호주 최초의 뉴욕의 비트 코인 및
블록체인 서비스에 비트 코인
교환 및 투자를 위한 신상 기업을 포함
하는 26 명의 호주 대표단을 뉴욕으로 파
견합니다.

호주 정부는 유망한 업계 행사인 뉴욕의 비트 코인 및 블록체인 서비스에 비트 코인 교환 및 투자를 위한 신상 기업을 포함하는 26 명의 호주 대표단을 뉴욕으로 파견합니다.

[Read Full Article](#)

Help solve the problem



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Three Layers of Protection
“**to be sure**”

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