

BLOCKCHAIN TECHNOLOGY



Three Layers of Protection

to Defeat Counterfeiters

tbs
x3



BLOCKCHAIN

MANUFACTURING,
DISTRIBUTION AND
LOGISTIC SOLUTIONS

Unleashing blockchain's full potential



Implementation: through industry alliances and innovative data control:

1. Why?

2. What?

3. Who?

Unleashing blockchain's full potential



Why?

Why this invention is important



- 1. 1 million lives** can be saved
- 2. Cruel crimes** can be prevented
- 3. Brand protection** can be reinforced

Why?



Returns on **\$1,000** in trafficking expenses

- heroin could return \$20,000
- counterfeit cigarettes \$43,000
- fake pharmaceuticals **\$200,000-\$450,000.**

Source: - Paris based International Institute of Research Against Counterfeit Medicine
www.iracm.com/en/thematic-observatory/organized-crime/

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>

Real people



1 million
tragedies

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

Local threats



ABC NEWS LOCATION: Sydney, NSW Change

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Pharmacist fights for licence after fake Viagra found at Sydney Children's Hospital

7:30 By Nick Dole
Posted 22 Feb 2017, 8:04pm



VIDEO: Pfizer medical director David Grolman explains how to identify counterfeit Viagra. (ABC News)

Thousands of counterfeit prescription pills made their way into Australia's official supply chain and ended up at a children's hospital in Sydney, an investigation has found.

The details of the 2010 incident have only recently come to light, as the pharmacist who supplied the fakes fights the cancellation of his licence.

A staff member at the Sydney Children's Hospital in Randwick was crushing Viagra tablets, which can be used to treat children with pulmonary hypertension, when she noticed something different about the pills.

RELATED STORY: TGA plans to cut staff despite threat from fake Viagra, weight loss pills
MAP: Sydney 2000

Key points:

- Counterfeit pharmaceuticals were discovered in a children's hospital
- Health department says the fakes were found before being given to patients
- Pharmacist who supplied the drugs is fighting the cancellation of his licence

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Valium recall: Consumers urged to check Valpam 5 packs after suspected tampering

By Lee Brooks
Posted 10 Jun 2017, 10:06am

The Therapeutic Drugs Administration has issued its second recall of diazepam tablets, or Valium, in two weeks, following a discovery of suspected tampering.

Drug manufacturer Arrow Pharma is recalling all batches of Valpam 5 tablets supplied in blister packs of 50 as some packs have been found to contain sleeves of substitute drugs.

Manufacturer Roche was forced to recall all packs of 50 Valium 5 milligram tablets two weeks ago after packets were found to have contained different drugs.




PHOTO: Consumers are advised to check their packs for any signs of tampering. (imgur)

RELATED STORY: Valium packets recalled after pill swap discovered

RELATED STORY: Worker sacked over Valium tampering and possible theft

MAP: Australia

Deputy secretary at the Commonwealth Health Department, John Skeritt, said there were similarities between the two cases.

"We suspected a couple of weeks ago that these diazepam tablets — or Valium is the trade name for some of them — are being diverted and sold on the black market," Mr Skeritt said.

"They can be abused.

"So it's the same product but it's a different supplier of the product, so it's a different case."

Food dangers



***Fraud could affect up to
10 percent
of food imported into the UK***

United Kingdom
Food Standard Agency
estimate

Alcohol dangers



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

Shanghai estimate

TimeOut SHANGHAI

TICKETS THINGS TO DO RESTAURANTS BARS MUSIC NIGHTLIFE FILM ART BLOG SHOPPING VISITING SHANGHAI FAMILY MORE SEARCH

Fake alcohol investigation

Just how widespread is Shanghai's counterfeit drink problem?

Posted: Thursday March 8 20



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Everyone's heard stories about fake alcohol in Shanghai, but how prevalent is the problem? [Charlotte Middlehurst](#) speaks with three drinks experts to separate the myth from the methanol

This time last year, Songjiang police arrested 25 people for orchestrating the city's biggest ever fake wine scam. The gang members scoured chat rooms for wealthy businessmen, and lured them to the district's Hanxin bar with seductive promises of luxury wine, among other treats. The brands, however, were counterfeit and no less than 210,000RMB was extorted before the ringleaders were caught and sentenced to ten years in prison.

While headline booze busts are rare, the practice of selling fake bottles is all too common. Most drinkers in Shanghai have, at one stage (if not several), woken up with a sledgehammer of a hangover, seemingly disproportionate to the amount drunk the night before. But is fake liquor really to blame, or is it just a handy scapegoat for our excesses?

George Chen, owner of [Roosevelt Prime Steakhouse](#) with 35 years of experience buying wine, estimates that as much as 80 per cent of the alcohol in Shanghai is fake. The San Franciscan connoisseur, who owns an impressive personal collection of Lafite wine, cites mark ups of up to 1,000 per cent, where wines made for 4RMB are sold for 400RMB.

International threats



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Mexican governor: Cancer children given water instead of chemotherapy

🕒 19 January 2017 | Latin America & Caribbean Share

Veracruz governor Miguel Yunez 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.

Unleashing blockchain's full potential



What?

Design options



1. Competing demands
2. Public or private
3. Avoiding flawed logic
4. Full use of the technology

Design tension

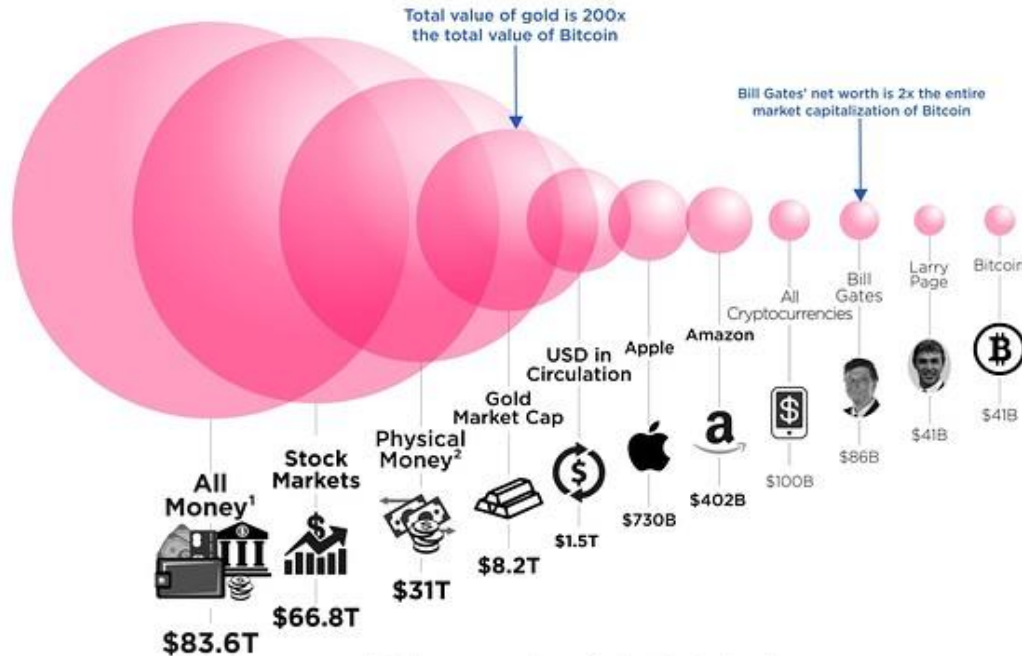


Transparency
Vs
Confidentiality

Proven security

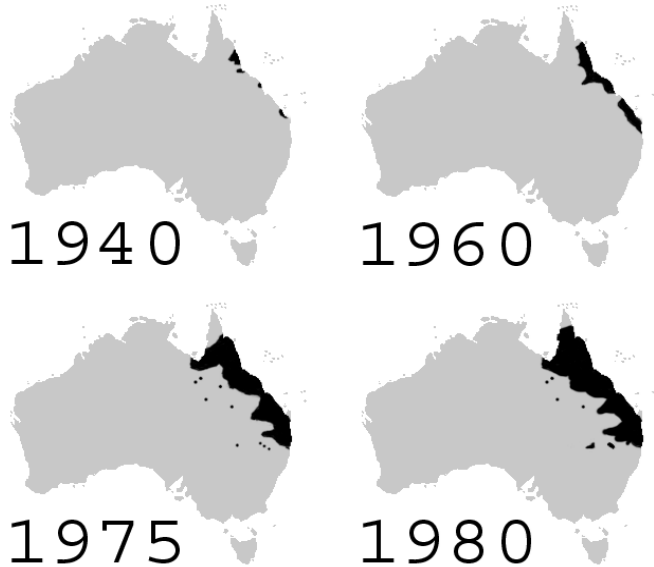


Putting the World's Money into Perspective



Bitcoin has
proven public
chain security

Cautious logic



The Lesson
of the
Cane Toad:

**Be careful
of what
you
introduce
into the
wild.**



Centralised data introduces a different set of **risks**

DAO defined



Ethereum startup [Slock.it](#) (emphasis added):

A DAO is an organization that's self-governing and that **isn't influenced by outside forces**: its software operates on its own, with its bylaws immutably written on the blockchain, not controlled by its creators. DAOs are formed by groups of like-minded individuals with specific projects and goals in mind . . . A DAO purely manages funds: in itself **it** does not have the capabilities to build a product, write code or develop hardware. It requires a Service Provider for this purpose, which it **hires by signing off** on a proposal.

Internet **grief**



Technology's Darker Side

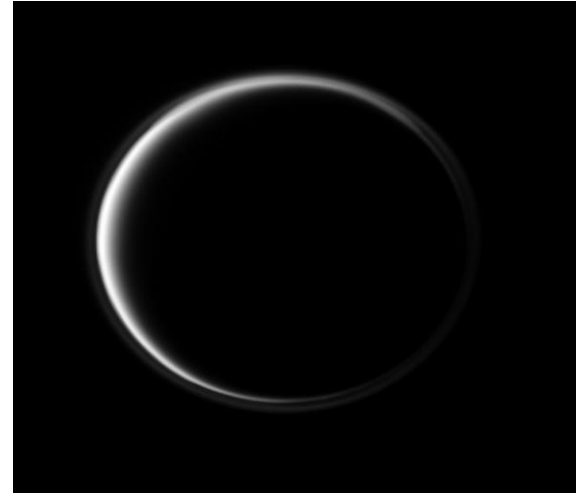
Poorly designed Internet tools led to some unanticipated and seriously bad outcomes:

- Cyber Bullying
- Cyber Stalking
- Revenge Porn
- Child Pornography
- Data Ransoms
- Kidnapping Ransoms

Technology can't be created in a vacuum. It has real-world impacts.

Can a few extra measures and design features help prevent harm?

Can new technologies be used to weaken social cohesion, hurt others, commit criminal acts or to facilitate related payments.



Housing impacts



Airbnb Will Probably Get You Evicted and Priced Out of the City

Airbnb Is Crashing the Neighborhood

Short-term rental websites raise risks for home owners, their neighbors, and communities.

DECEMBER 2015 | BY BARBARA NICHOLS

There's a good reason every city has zoning laws. They separate various types of buildings and building uses for the mutual benefit of everyone, so people don't have to live next to a factory or a motel. Most cities also have laws related to the minimum rental period for a single-family house or a multifamily dwelling. In Los Angeles, for example, a residential rental of less than 30 days — called a "short-term rental" — is currently prohibited.

Here's proof Airbnb is destroying the New Orleans housing market

An inside look into HousingWire's coverage

September 26, 2016 Kelsey Ramirez 5 Comments

KEYWORDS AIRBNB HOME PRICE INVESTOR SHARING ECONOMY SHORT-TERM RENTAL UBER

REPRINTS



Blog Topics

The sharing economy is beginning to dominate our culture, especially among the younger generations.

If I'm going to be without a car for the day, I don't find a bus station, I call for an Uber. If I waited too long to book my hotel room and it gets sold out, I don't cancel my vacation, I rent an Airbnb.

Is Airbnb Really Ruining Rental Markets?

by Brian Davis | BiggerPockets.com



Airbnb Is Infuriating the Neighbors. Is It Time for New Rules?

BY STEVEN LEIGH MORRIS

THURSDAY, JANUARY 22, 2015 AT 2:47 PM.

Taxi protests



Data ownership



The Telegraph

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Facebook terms and conditions: why you don't own your online life

Did you read the terms when you joined Facebook, Twitter or LinkedIn? Oliver Smith explains how social networks effectively own your online content.



Facebook has something up its sleeve for today. Photo: AP

By Oliver Smith
1:20PM GMT 04 Jan 2013

When joining a social network, you are likely to spend more time considering which photo you will use on your profile than reading the lengthy terms of service document. And yet, off-putting though Facebook's 14,000-word terms of service and data use policy might be, it is a legal contract between you and the social network. Do you know what you've signed up for?

Last month, users of Instagram reacted with anger at proposed changes to the company's terms that would give the mobile photo-sharing app the right to use member's photos in advertising campaigns.

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The best tablets

In Social Media

Who owns your online data?

Design rethink



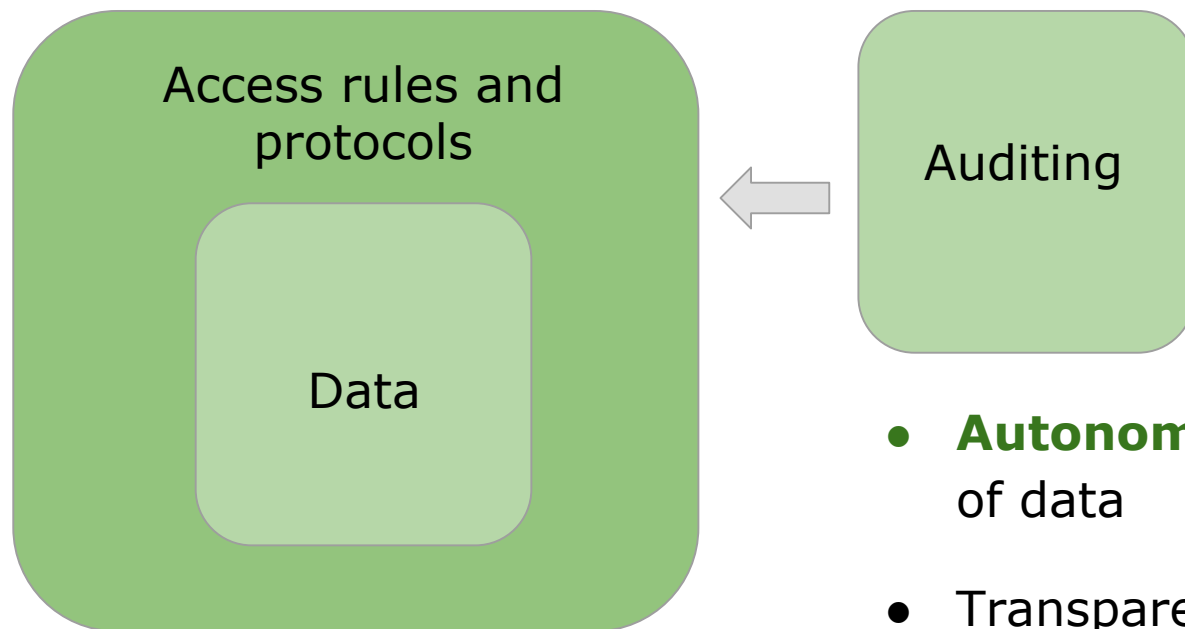
or



System requirements

- True **integration** of data
- No **single** points of failure

Trustless data integrity



- **Autonomous governance** of data
- Transparent and continuous **compliance audit** reports

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 - Cryptographic certainty



Strong encryption and mathematical proof

The estimated mining difficulty is 2^{67}

i.e. greater than the human population of Earth squared.

So, if every person on Earth was themselves their own planet Earth with seven billion people on it, the total number of people would be close to 2^{67}

- Princeton University

Layer 2 - Logistics tracking



Clever tracking technologies and systems such as RFID, remote sensors, and satellite tracking already exist.

Blockchain technology increases the effectiveness of those systems in

3 simple ways

Layer 2 - Logistics tracking



1. Immutability
2. Auditability
3. Distributed ledger



**Don't
worry**

It isn't so bad!

BIG words, but **simple concepts**

Blockchain power



1. **Immutability** - records can **never be altered** or erased
2. **Auditability** - the records can be **audited and verified** at any time
3. **Distributed ledger** - no single **point of attack**

Layer 3 - Blockchain technology



Impossible to **double** spend

This **destroys** the counterfeiter's business model

Layer 3 - Blockchain technology



Pointless for a counterfeiter to make 10,000 copies

Only 1 can be sold



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Building a strong **alliance**

Unleashing blockchain's full potential



Who?

Great outcomes x 3



1. Consumer protection
2. Brand protection
3. Market protection

Enhanced services that **guard** shipments and storage

Technology proven

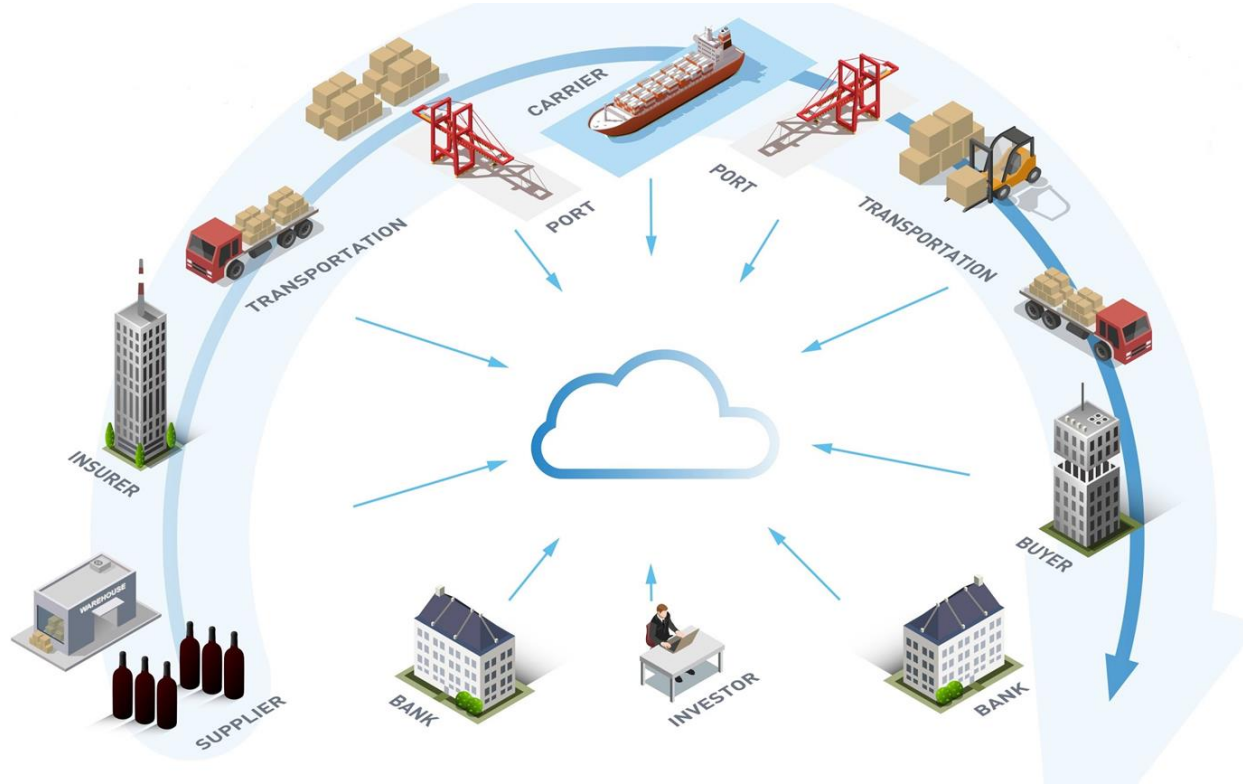


Successfully completed trial

Australian wine shipped to China

Other trials being developed

Great outcomes x 3



Strong alliance



DP WORLD
Australia



Strong alliance



Strong alliance



Collaboration MOUs



Deep integration



- 17 shipping lines
- 13 container terminals
- 6,122 road carriers
- 1,600 freight forwarders
- 9 rail operators
- 39 container parks and depots

Help **solve** the problem



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Three Layers of Protection
"to be sure"