

BARDEHLE
PAGENBERG

tilkal

Blockchain et lutte anti-contrefaçon



AGENDA

The globalization
of illicit trade

The urge for
transparency

How does digital fit in?
Blockchain?

Example of usage : Tilkal and the agro-food industry

ILLICIT TRADE : A MULTI FACETED ISSUE



Violation of property

- physical property
- intellectual property
- Smuggling and tax fraud



Violation of regulations

- Health & physical security
- Pollution, deforestation
- Slavery & child labor



Violation of commercial contracts

- Parallel imports
- Authorized sellers selling to unauthorized channels

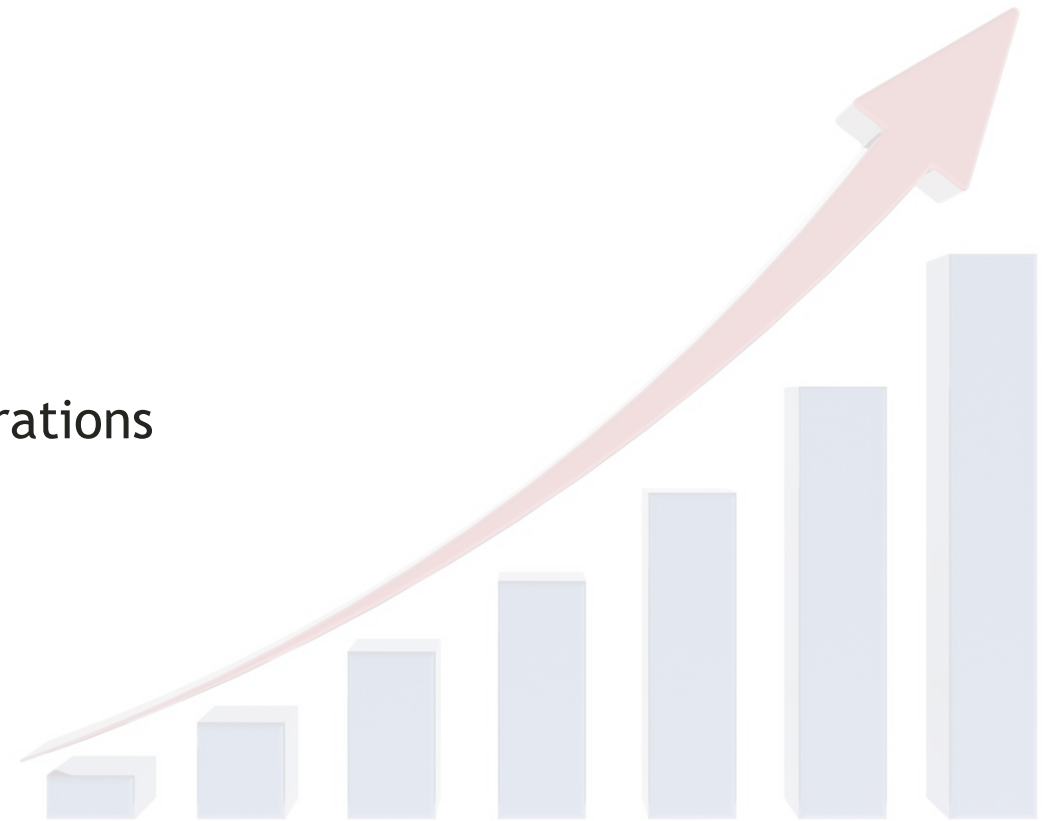
Organization of the sale of products to the public
in violation of the law

- Nowadays these are deeply intertwined issues, networks and channels
- Illicit trade has turned into the #1 cross border criminality

ILLICIT TRADE: A GLOBAL BUSINESS

3X TO X7 BIGGER THAN DRUG TRAFFICKING

- **\$1,7 trillion per year (*)**
 - France GDP in 2004
- **x5 000 in 10 years (**)**
 - counterfeited articles seized by EU custom administrations
 - cases increased x10
- **Boosted by digital platforms**
 - 6,000 listings removed by Facebook every 5 days
 - 114 millions websites taken down by Alibaba
- **> 25% illicit trade products are dangerous for health and safety**
- **Illicit trade used to be a consequence of criminality, it has become its purpose**



(*) projected value for 2015 by International Chamber of Commerce

(**) 2015 Situation Report on Counterfeiting in the European Union, Europe & UN-OHIM, April 2015

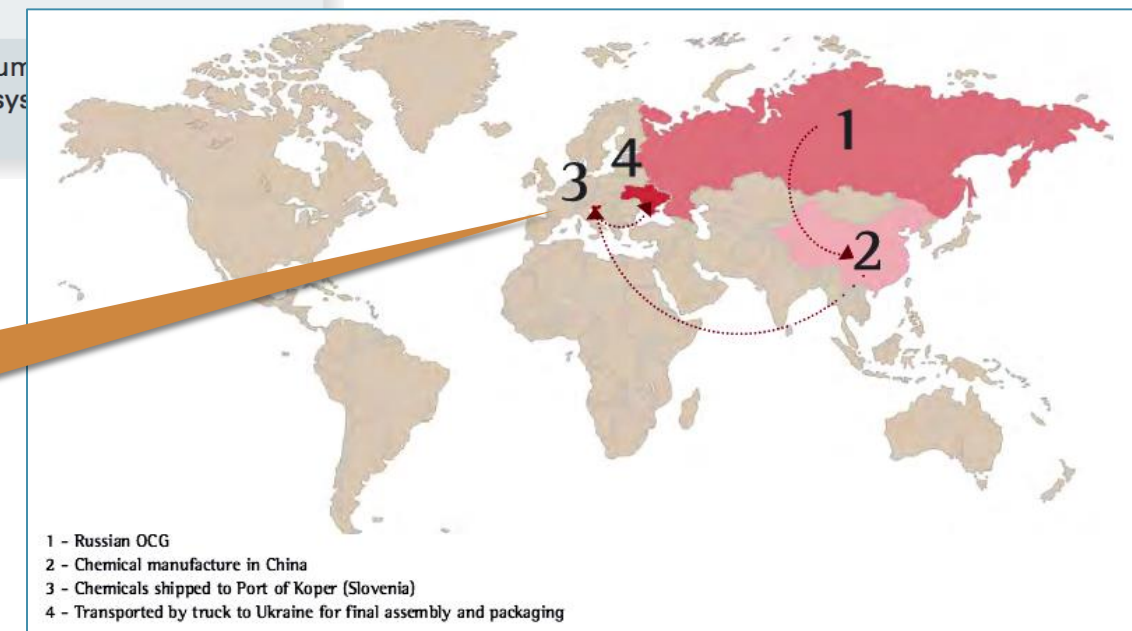
(***) source: Lilly, 2016

90% OF PRODUCT REFERENCES WORLDWIDE (*)

Table 1: The diverse nature of illicitly produced goods (select categories)

Automotive	Scooters, engines, engine parts, body panels, air bags, windscreens, tires, bearings, shock absorbers, suspension and steering components, automatic belt tensioners, spark plugs, disc brake pads, clutch plates, oil, filters, oil pumps, water pumps, chassis parts, engine components, lighting products, belts, hoses, wiper blades, grilles, gasket materials, rings, interior trim, brake fluid, sealing products, wheels, hubs, anti-freeze, windshield wiper fluid
Chemicals/pesticides	Insecticides, herbicides, fungicides, non-stick coatings
Consumer electronics	Computer components (monitors, casing, hard drives), computer equipment, webcams, remote control devices, mobile phones, TVs, CD and DVD players, loudspeakers, cameras, headsets, USB adaptors, shavers, hair dryers, irons, mixers, blenders, pressure cookers, kettles, deep fryers, lighting appliances, smoke detectors, clocks
Electrical components	Components used in power distribution and transformers, switchgears, motors and generators, gas, and hydraulic turbines and turbine generator sets, relays, contacts, timers, circuit breakers, fuses, distribution boards and wiring accessories, batteries
Food, drink and agricultural products	Fruit (kiwis), conserved vegetables, milk powder, butter, ghee, baby food, instant coffee, alcohol, drinks, candy/sweets, hi-breed corn seeds
Pharmaceuticals	Medicines used for treating cancer, HIV, malaria, osteoporosis, diabetes, hypertension, cholesterol, cardiovascular disease, obesity, infectious diseases, Alzheimer's disease, prostate disease, erectile dysfunction, asthma and fungal infections; antibiotics, anti psychotic products, steroids, anti inflammatory tablets, pain killers, cough medicines, hormones, and vitamins; treatments for hair and weight loss.
Tobacco	Cigarettes, cigars, and snuff
Toiletry and other household products	Home and personal care products, including shampoos, detergents, fine fragrances, perfumation products, skin care products, deodorants, toothpaste, dental care products, shaving systems, shoe polish; non-prescription medicine

Even waste is concerned
currently the fastest growing illicit
trade in Europe (**)



THE ILLICIT TRADE VIRUS HAS INFECTED ALL STAGES OF SUPPLY CHAINS

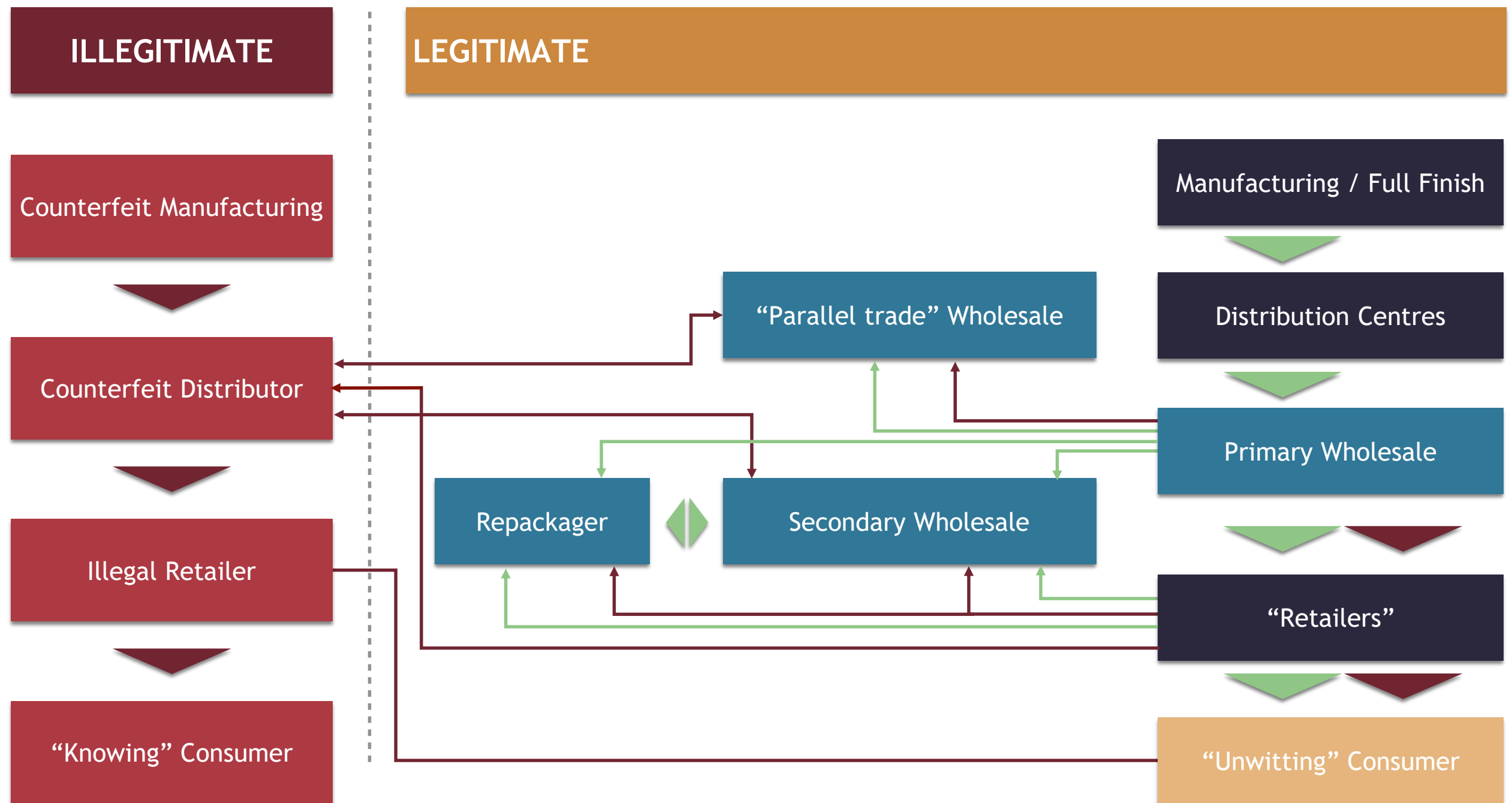


Diagram source: 2015 Situation Report on Counterfeiting in the European Union, Europe & UN-OHIM, April 2015

... AND ITS VIRULENCE IS BEYOND TRADITIONAL BUSINESS REACH

\$1,7 Trillion ⁽¹⁾

ILLEGITIMATE

Counterfeit Manufacturing

Counterfeit Distributor

Illegal Retailer

"Knowing" Consumer

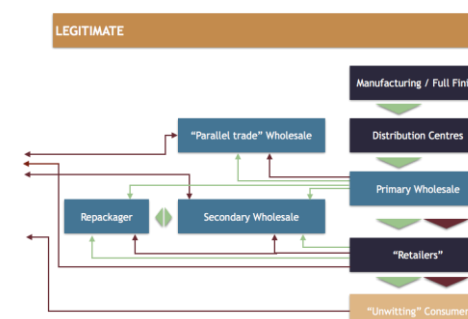
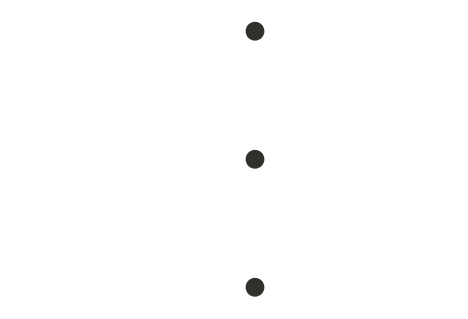
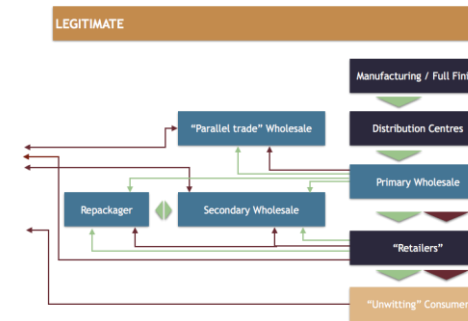
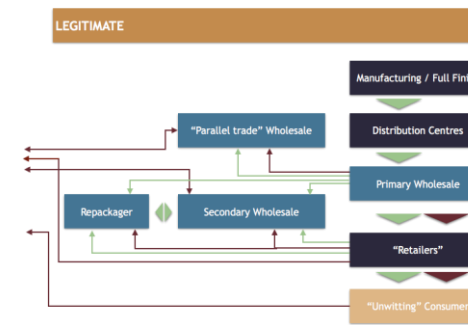
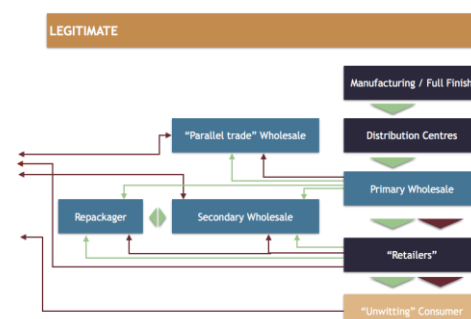
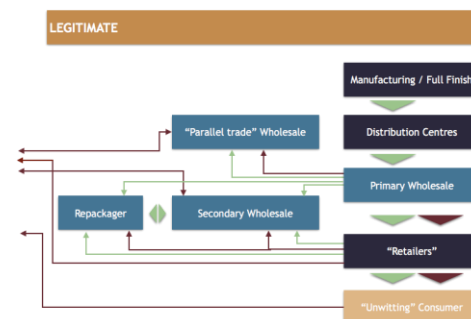
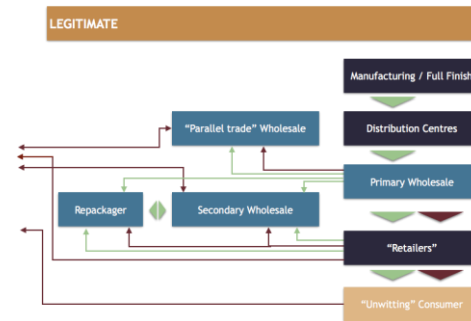
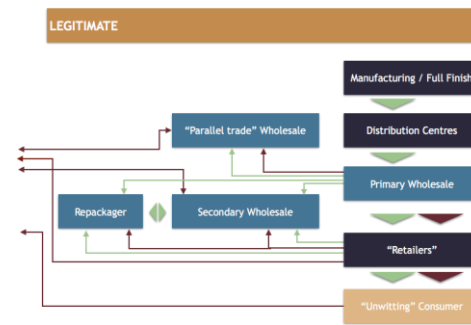
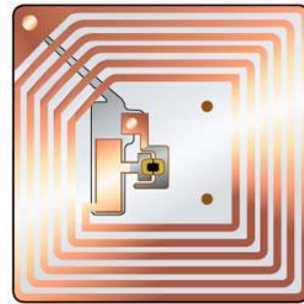
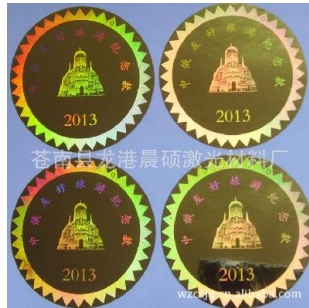


Diagram source: 2015 Situation Report on Counterfeiting in the European Union, Europe & UN-OHIM, April 2015
(1) source International Chamber of Commerce

CURRENT APPROACHES DO NOT SCALE



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AND NOW THE SYMPTOMS ARE OUT IN THE OPEN



EXAMPLE OF INFANT MILK: A PROMISE FOR LIFE?

- **2008: China milk scandal**
 - Melamine in infant formula
 - 6 infants died and 54,000 hospitalized
- **2013: second milk scandal**
 - Repackaged Hero Group formula mixed with tainted milk
- **2016: third milk scandal**
 - 65,000 cans of fake Similac seized (*)

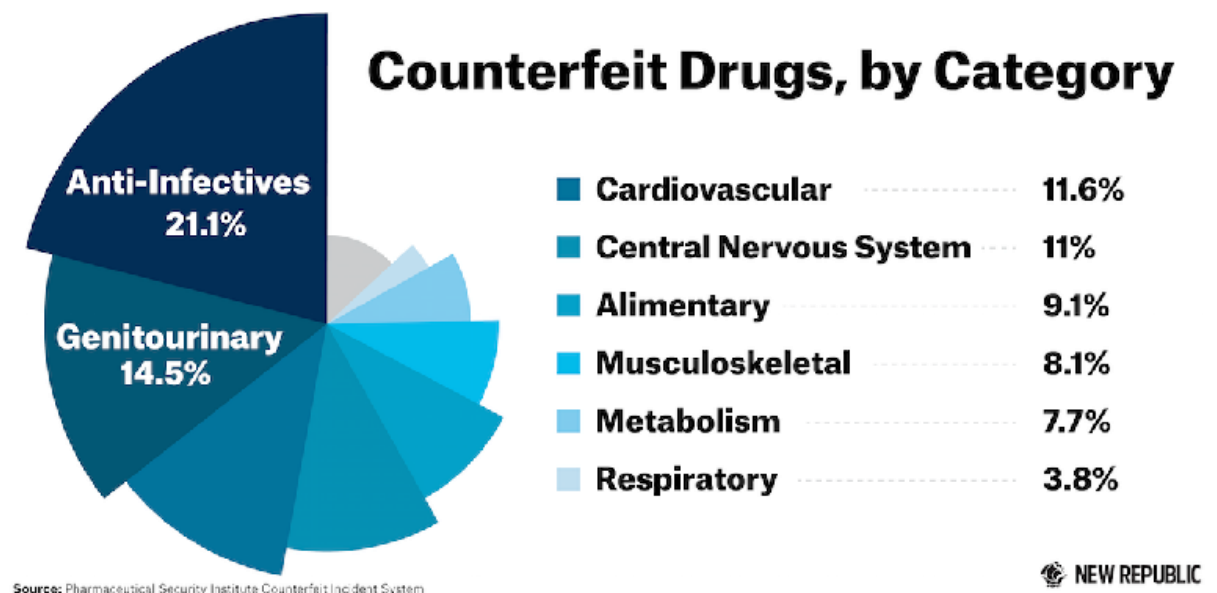


(*) source UBS via Wall Street Journal (August 2, 2016)

EXAMPLE OF PHARMA: A GLOBAL HEALTH ISSUE



source: IRACM, 2016



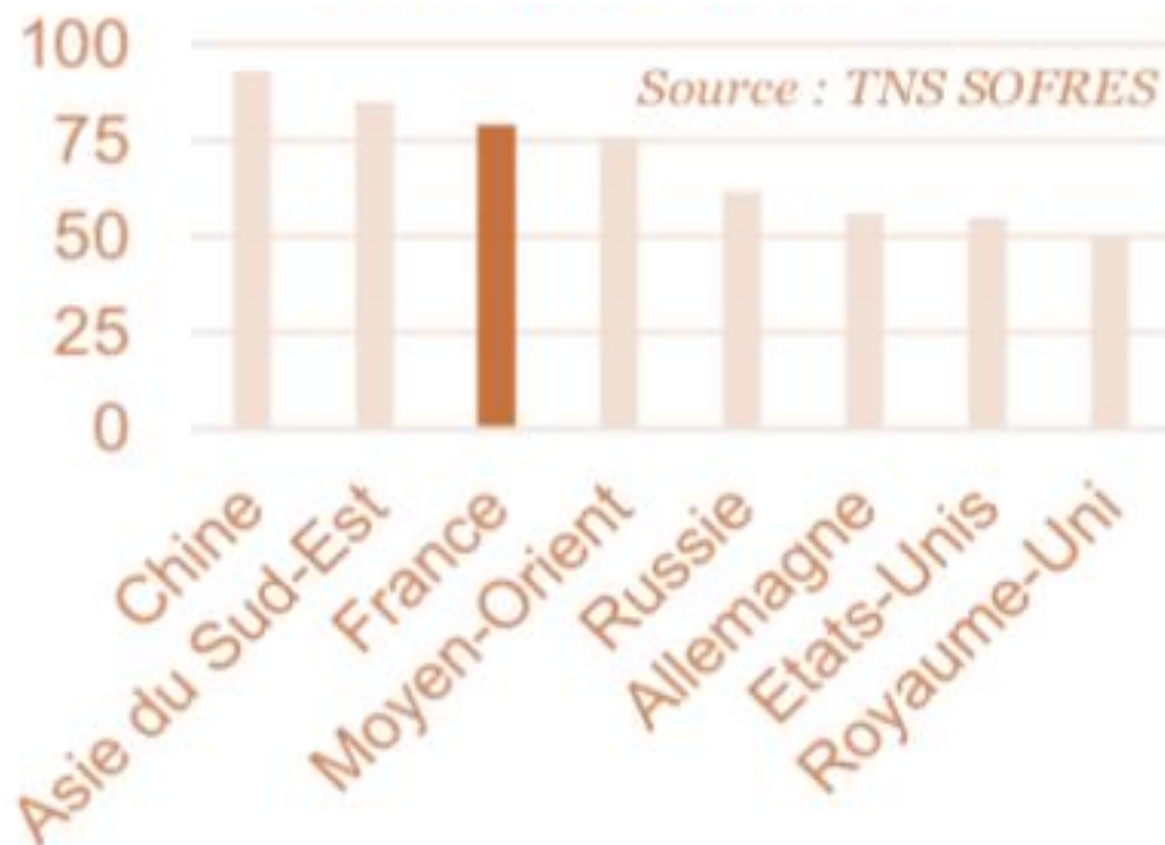
- **counterfeit medicines: USD 200 billions in yearly sales (*)**
 - Loss for the pharmaceuticals industry in Europe: about 10 billions € / year (**)
- **62% of online medicines sales, 97% of online stores (*)**
- **700,000 to 1,000,000 death each year**

(*) source: Lilly, 2016

(**) Rapport de l'Office de l'Union européenne pour la propriété intellectuelle, publié jeudi 29 septembre

CONSUMER DEMAND FOR INCREASED TRANSPARENCY DEFINES A NEW BUSINESS AND REGULATORY AGENDA

% of consumers who think products they buy
are negatively impacting their health



72%

do not want to buy product from
brands whose practices they
disapprove of

81%

say brands do not provide enough
information about their products

65%

are willing to pay more (up to
30%) for sustainable products

END-TO-END TRACEABILITY DOES NOT EXIST IN SUPPLY CHAINS



(1) source International Chamber of Commerce
(2) 2015 Situation Report on Counterfeiting in the European Union, Europe & UN-OHIM, April 2015

AGENDA

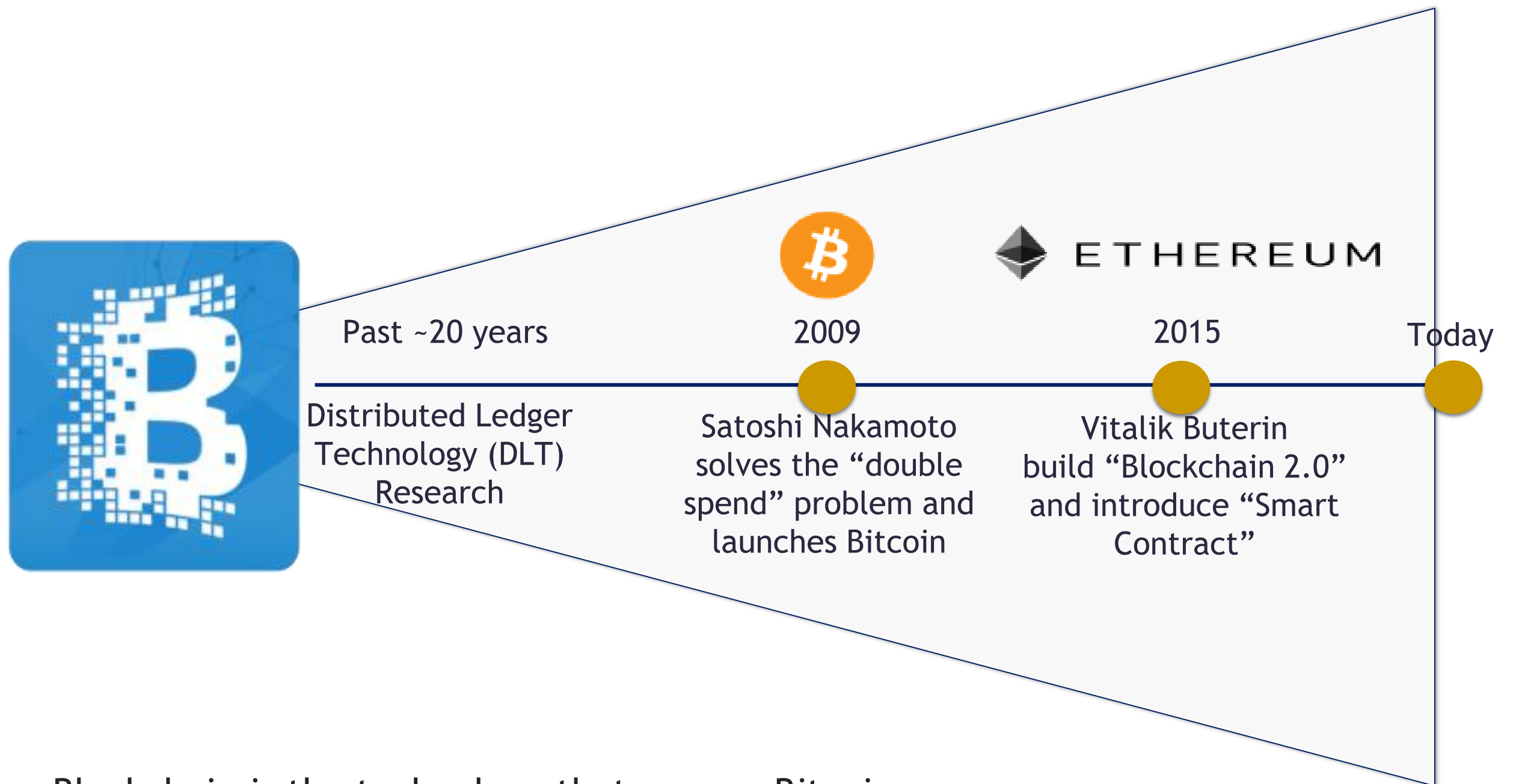
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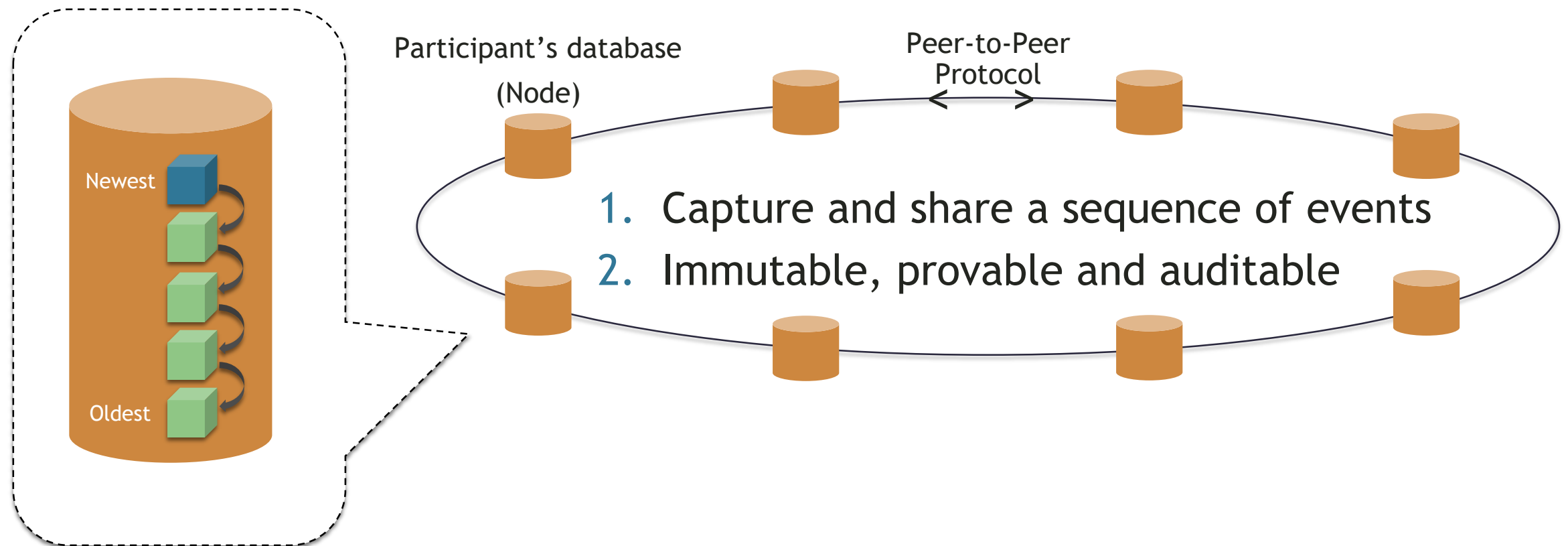
A QUICK HISTORY OF BLOCKCHAIN



- Blockchain is the technology that powers Bitcoin
 - Market cap (January 15, 2017): \$234bn
- Regulators and states are seriously looking into it (e.g. IMF, Japan, Russia ...)

WHAT IS BLOCKCHAIN?

Blockchain = Database + Protocol

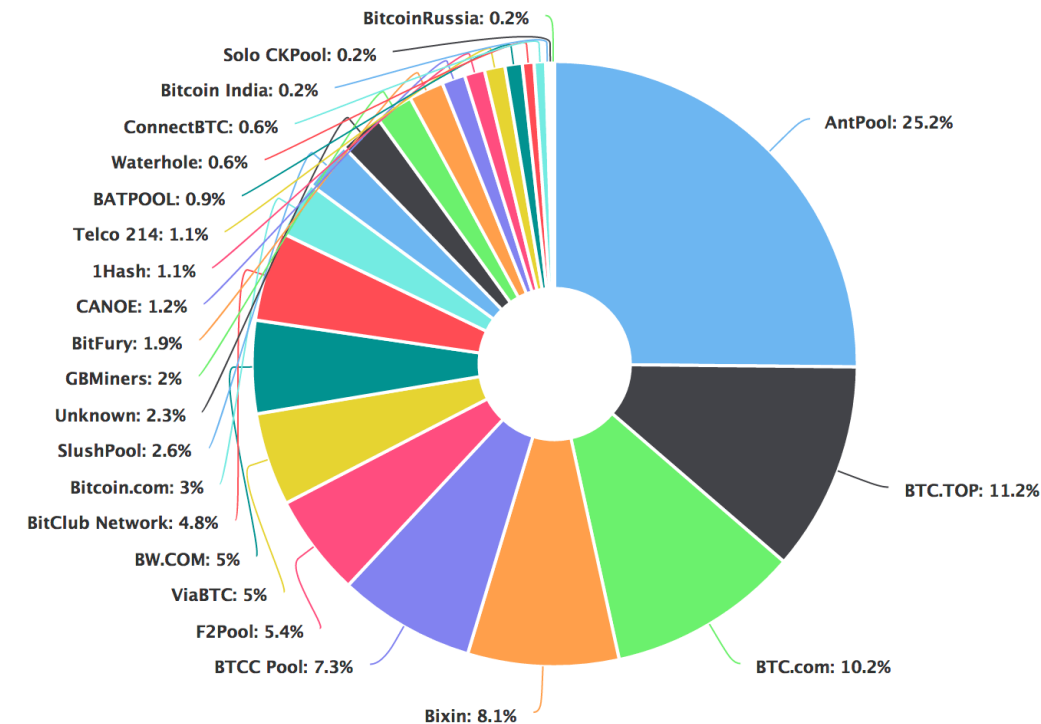


**It allows multiple parties to share auditable information
even if they don't trust each other
without putting a single party in charge of all the data**

PUBLIC OR PRIVATE?

- **Public**

- Nobody controls the network... really?
- Governance?
- Trust in transactions despite untrustable stakeholders imply to slow down the network
 - 7 transactions / sec on bitcoin



- **Private**

- Known control by a limited number of stakeholders
- Contractual governance
- Interconnection of networks will become a question
- Much faster networks are possible

FROM A BIRD'S EYE VIEW, A PROMISING MATCH

Lack of
information

Need to
implement trust

Supply chains

Organizes
data sharing

Provides
auditability

Blockchain

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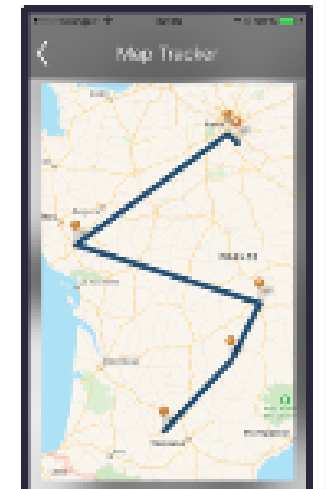
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TILKAL : PRODUCTS, ASSETS & DATA TELL THEIR STORY IN REAL-TIME

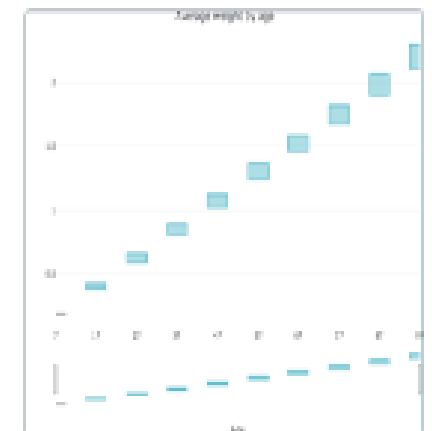
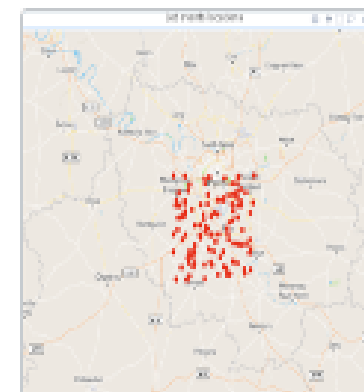
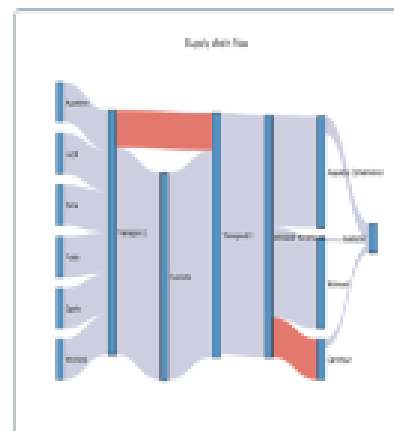
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Collect, process
and share
products lifecycle
data
across vertical
industries

CONVERSATION WITH CUSTOMERS



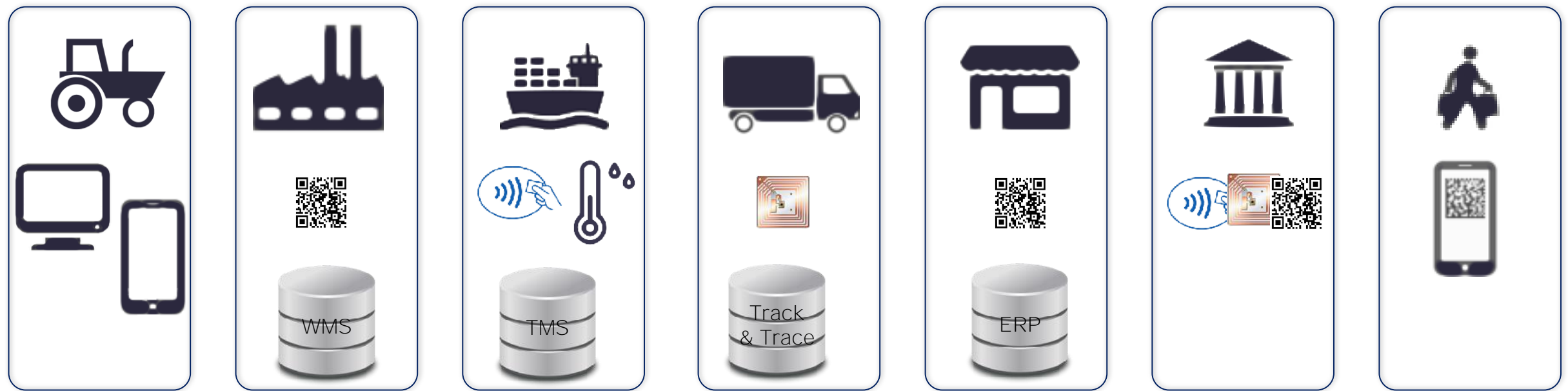
END-TO-END OPERATIONAL DATA



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HOW DOES IT WORK?

BLOCKCHAIN + API + BIG DATA



Blockchain for industry data



Statistical analysis
of product flow

+

Digital ID
platform

- Private, auditable and confidential network
- Fit for industrial volumes : 30M transactions per day (x50 Bitcoin)

POSITIVE IMPACTS ON SUPPLY CHAIN



Product Attributes Traceability

Two-way conversation channel with customers

Product origin, impact, usage
Real-time and auditable recalls



Multi-party Process Efficiency

Trusted data sharing and visibility across supply chain key stakeholders

Product localization / availability / sale
End-to-end traceability against counterfeit



Event / Alert Tracking

Digitization of documentation & administrative tasks

Eg. Terms of Reference, Bill of Lading...
Third party Quality Control

Regulatory compliance

Eg. FDA Drug Supply Chain Security Act, Rules on imports of conflict minerals, REACH, RoHS...

JOURNEY EXAMPLE

T0



4

Months



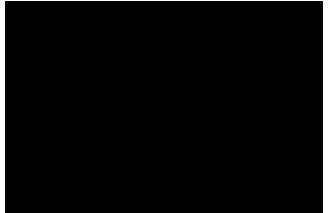
Mid/Long
Term

Factory

0



Transparency



Factory

1



Customers



Suppliers

Factory

Distributors/Retailers

Customers

2



Suppliers

Factory

Shipping / IoT

Distributors/Retailers

Customers

3

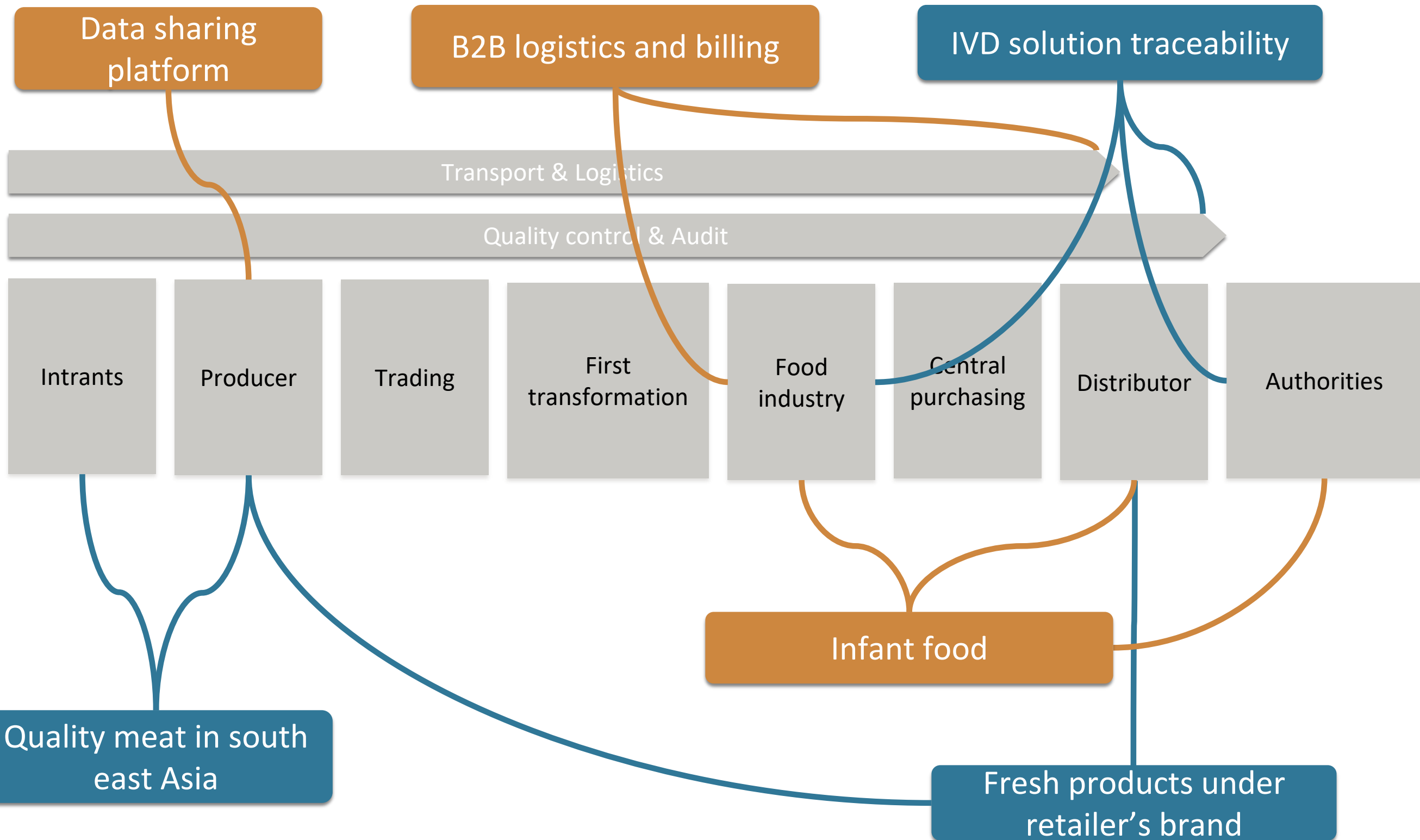


All participants in your supply chain

4



USE CASE IN THE AGRO-FOOD INDUSTRY



KEY TAKE AWAYS

- **In a global economy no one can control its industrial tool alone**
 - Cooperation is mandatory, even with unknown or non trusted parties
 - Liabilities expand beyond the scope of one entreprise
 - The network must be able to « clean » itself in real time
- **Control of the industrial tool enables a strategic differentiator: transparency**
 - Ethical and durable commitment
 - Quality and recalls
 - Trust based conversation with consumers
- **Secured industrial traceability networks can be built**
 - Around verticals “from producer to store” (eg milk industry, beef, etc)
 - For regulation purpose (eg conflict minerals, ROHS, REACH)
 - In a specific industry (eg logistics)



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