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# *Addressing the Pharmaceutical Supply Chain and Beyond*

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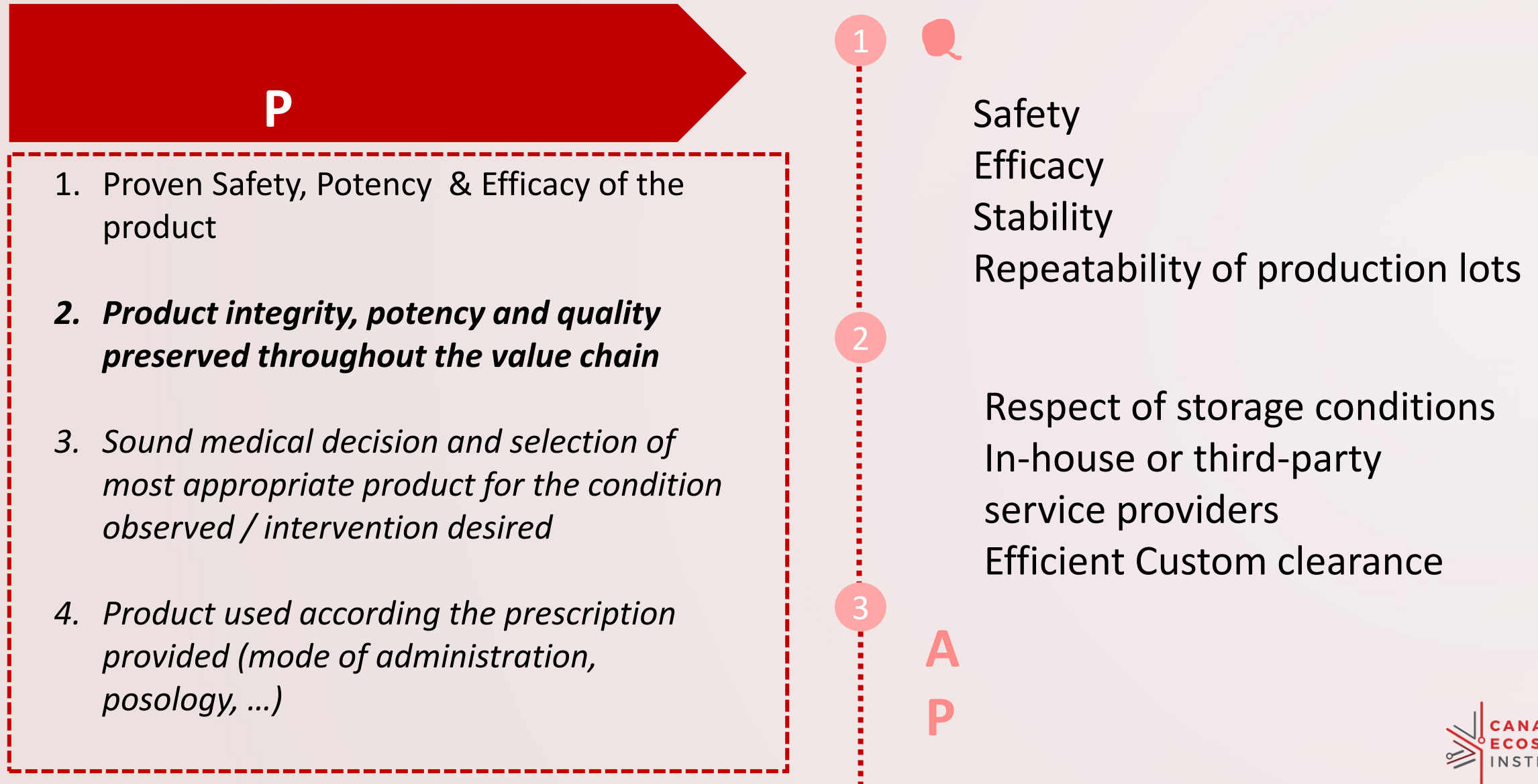
*The Canadian Ecosystem Institute (CEI) is a communications and marketing research firm dedicated to helping businesses in Asia Pacific and North America.*

*CEI provides business consulting, branding, PR, and research support that enables clients to position themselves effectively as an engaged and valuable ecosystem participant, helping solve real business challenges and find the right business partners to succeed and thrive.*

***If you have an idea, we have a roadmap to make it a reality***



# Pharmaceutical & Biological Products Supply value chain

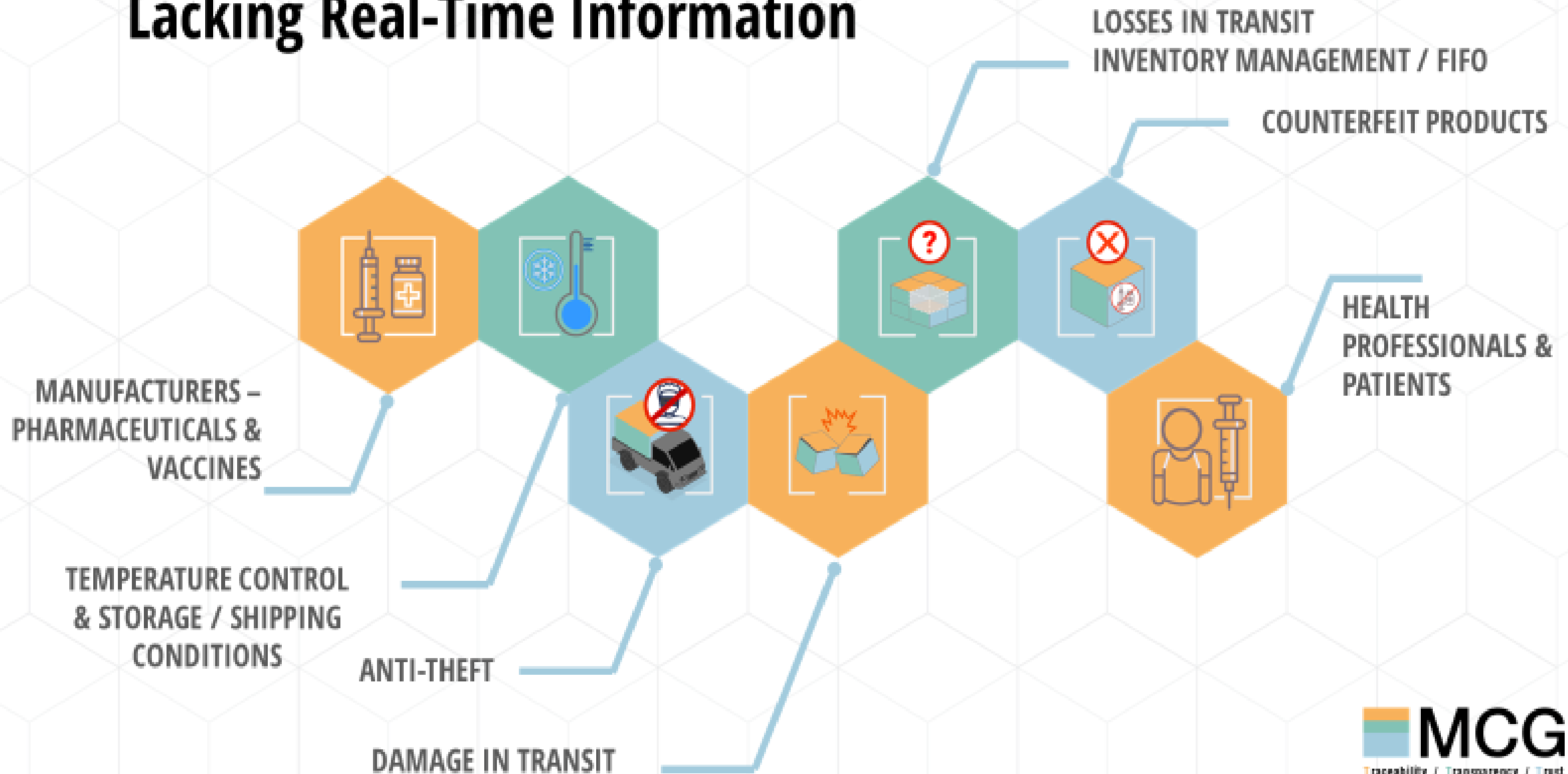






# Long Supply value chain

# Challenges Of the Pharmaceutical Supply Chain – Lacking Real-Time Information





# Blockchain Technology

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It's all about Trust





UNIVERSITY OF  
BIRMINGHAM



## Understanding the cold-chain challenge for Covid-19 vaccination

November 2020

**KIGALI**  
INSTITUTE FOR INNOVATION



**Tackling the last mile while still controlling all the parameters**





# Blockchain Enabled Smart Container



**Standard Modular Smart Containers/Pallets**



**Made of environmental-friendly Material**

**Interconnected IoT Infrastructure**

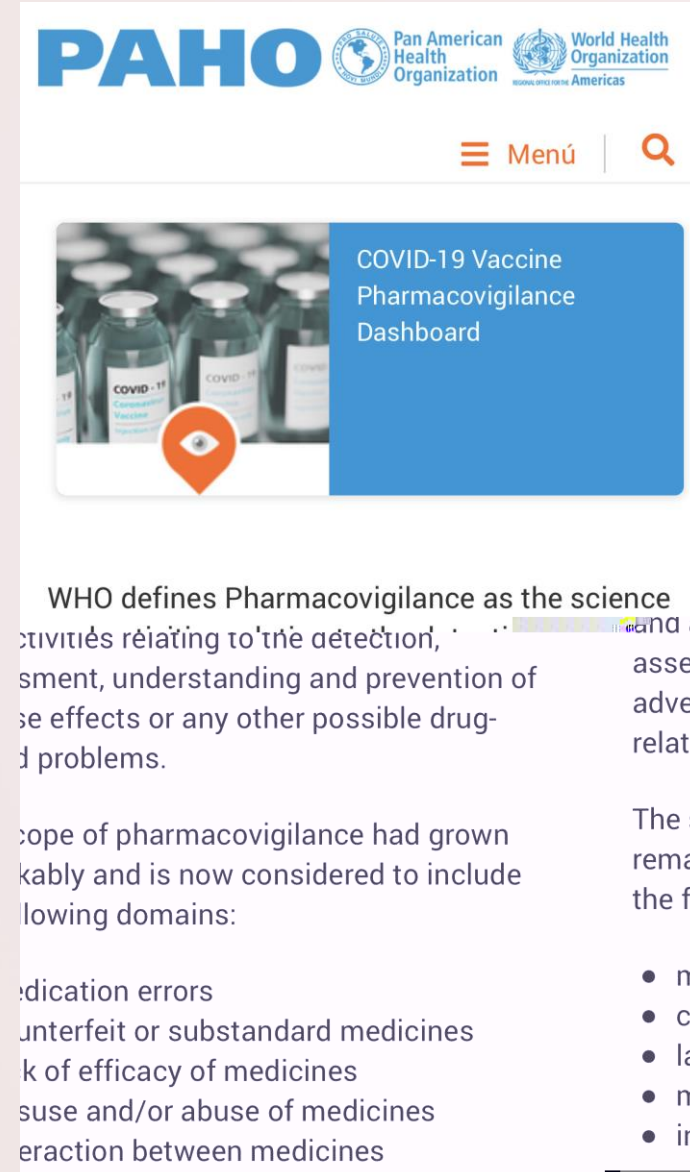


**Interoperable Digital Assets Sharing**

# Pharmaceutical & Biological Products Supply value chain

## P

1. ***Proven Safety, Potency & Efficacy of the product***
2. Product integrity, potency and quality preserved throughout the value chain
3. *Sound medical decision and selection of most appropriate product for the condition observed / intervention desired*
4. *Product used according the prescription provided (mode of administration, posology, ...)*



WHO defines Pharmacovigilance as the science and activities relating to the detection, assessment, understanding and prevention of adverse effects or any other possible drug-related problems.

The scope of pharmacovigilance had grown remarkably and is now considered to include the following domains:

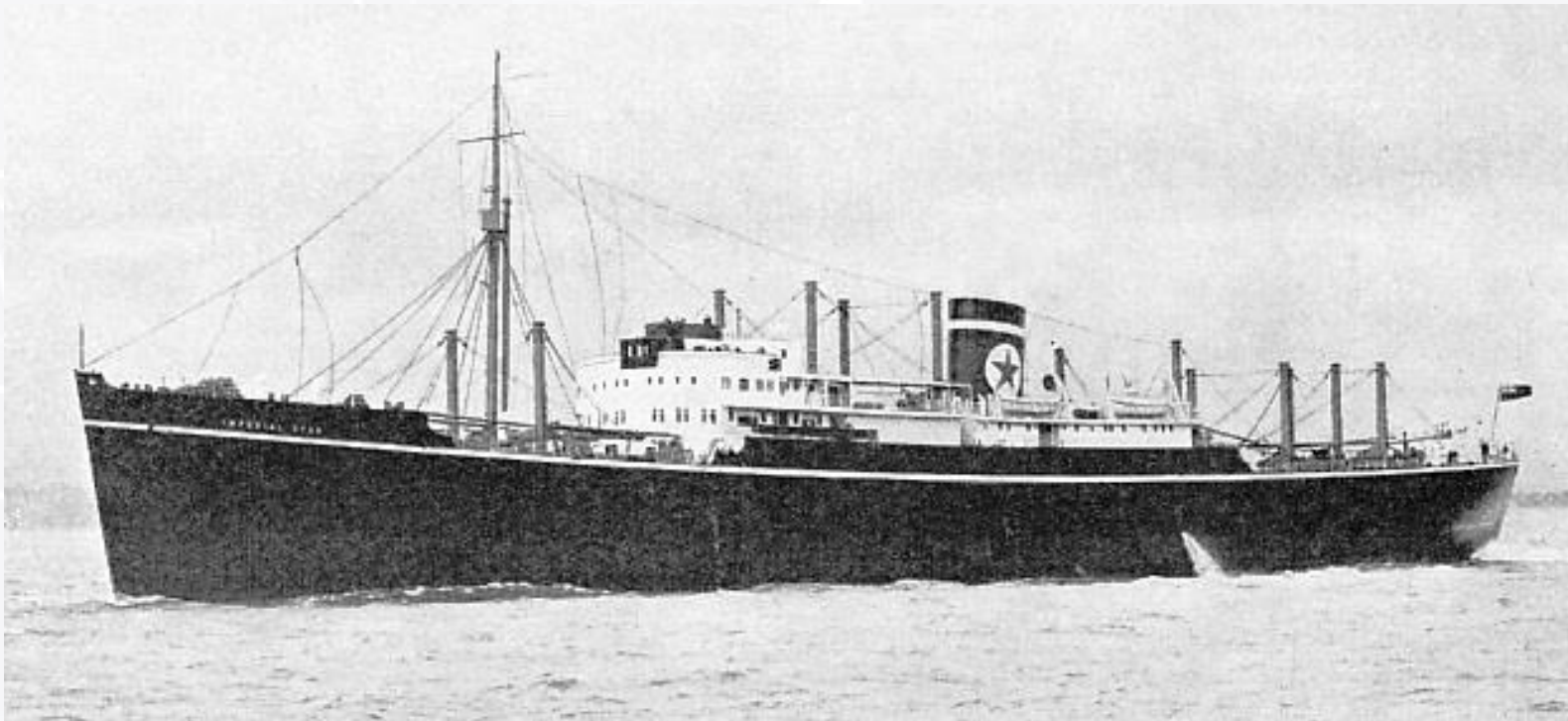
- medication errors
- counterfeit or substandard medicines
- lack of efficacy of medicines
- misuse and/or abuse of medicines
- interaction between medicines





# Peace of Mind

# 1929 – Refrigeration was a Game changer!



## The Argentine Refrigerated Meat Industry

By E. G. JONES

THE importance of a meat supply for the people of this country in an age which is characterised by the slow and gradual exhaustion of the meat supplies of the world available for the purposes of international trade lends special interest to the position of British capital in the Argentine meat industry. The Argentine Republic is one of the few countries of the world which has a considerable

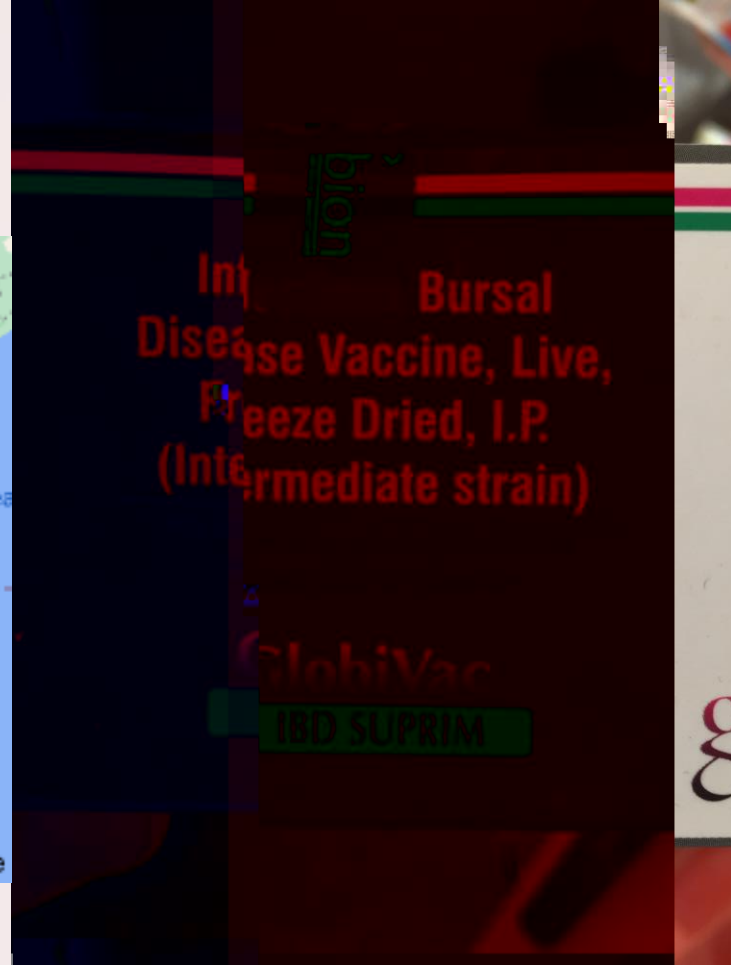
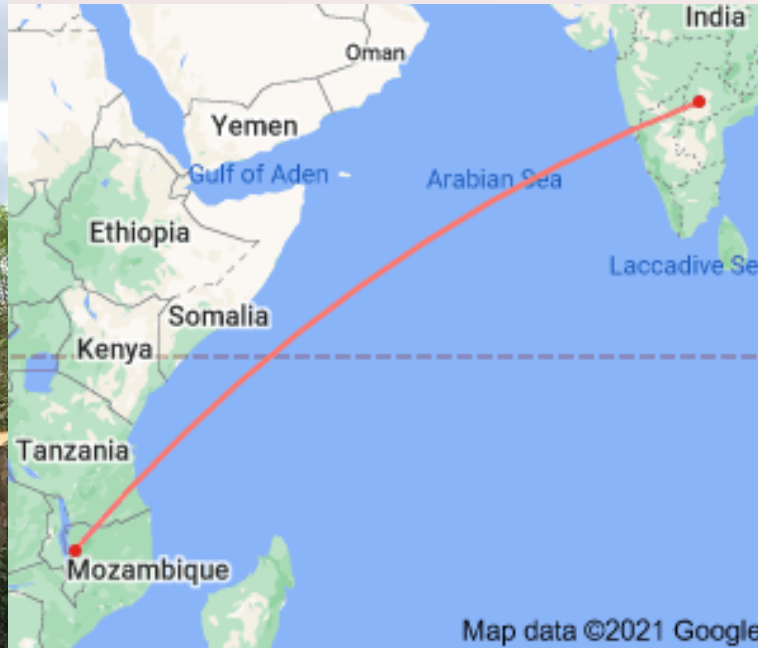
supply of meat, and it is this fact which has made it possible for the Argentine to become a major supplier of meat to the world. The Argentine meat industry is one of the most important in the world, and it is the only one which has been able to maintain its position in the face of the competition of the United States and the United Kingdom. The Argentine meat industry is a product of the refrigeration industry, and it is the only one which has been able to maintain its position in the face of the competition of the United States and the United Kingdom. The Argentine meat industry is a product of the refrigeration industry, and it is the only one which has been able to maintain its position in the face of the competition of the United States and the United Kingdom.

Cattle and sheep rearing in the Argentine Republic dates back to the earliest stages of its history; in fact, to the sixteenth century, when the Spaniards first settled in the River Plate provinces. So peculiarly adapted to cattle rearing did the soil and climate of the country prove, that the slender stocks imported by the Spanish pioneers became the progenitors of herds of both domestic and wild cattle that spread rapidly over the rich pasture lands of those parts of South America with a temperate climate. Cattle were so plentiful that they threatened to become a menace through sheer force of numbers. "They multiply so prodigiously," said a seventeenth century writer, "that the plains are covered with them . . . in such numbers that, were it not for the dogs that devour the calves and other tender animals, they would devastate the country." <sup>1</sup> But the period of the greatest development of the

<sup>1</sup> Shanahan, E. W., *Animal Foodstuffs*.

<sup>2</sup> Quoted by Raymond and Critchell. *History of the Frozen Meat Trade*. Azar also drew attention to the fecundity of the flocks and herds. "Horses were a





**~ 12,000 kms**  
**3 flights, road transfers**  
**3 countries (10,000 kms)**

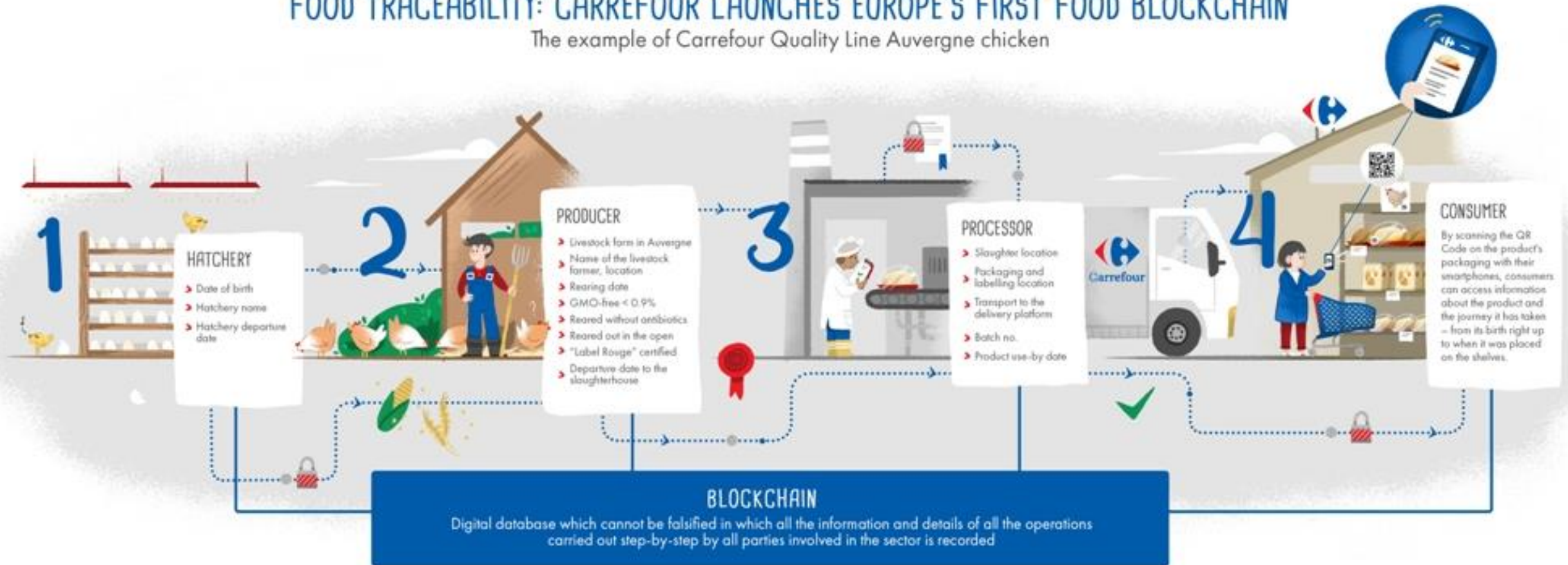




# Integrity of Premium brands

## FOOD TRACEABILITY: CARREFOUR LAUNCHES EUROPE'S FIRST FOOD BLOCKCHAIN

The example of Carrefour Quality Line Auvergne chicken






**Fresh food  
or  
Frozen food thawed out?**






# Food fraud, adulteration and safety


 DAILY NEWS

LOG IN

## China Walmart in 'green pork' scandal; stores to close due to mislabeling of organic pork

By THE ASSOCIATED PRESS  
OCT 11, 2011 AT 10:49 AM



BBC NEWS

## Eggs containing fipronil found in 15 EU countries and Hong Kong

🕒 11 August 2017 | Europe





## GUEST EDITORIAL BY VINCENT GUYONNET, DVM, PH.D.



## Egg farmers, not blockchain, key for consumer trust

Blockchain may be a tool to build consumer trust, but, where eggs are concerned, egg producers must successfully win consumer trust.

**B**lockchain may already be finding its way into the egg and broiler industries, but it was developed to control the trading of cryptocurrencies. Each transaction — a block — is digitally stored and, once completed, cannot be changed, making the data modification risk low. Blockchain is promoted as a way of maintaining consumer trust.

Put simply, blockchain is a database containing the exchange history between stakeholders, with information visible to all parties throughout a value chain. When applied to the egg and poultry meat industries, Blockchain can be used to store information on products: their origin, how birds were farmed or the type of feed given. The technology is said to guarantee complete transparency on the route followed by products by creating a digital record proving the provenance, authenticity, quality and production system.



Premium products, such as organic eggs, may have the most to gain from technologies such as Blockchain. Dr. Vincent Guyonnet

### Early adopters

There are already a few documented cases of Blockchain used in the poultry sector.

There was the well-reported example in 2018 of a small farmer in a remote village in a southern province of China selling, at a high premium on a popular e-commerce platform, his free-range, slow-growing chickens, called GoGo Chickens.

In 2019, Carrefour, the French global retailer, launched its Blockchain initiative for one of its premium brands, the Auvergne

chicken. Carrefour believes that consumers want more transparency and assurance about the products they buy. By scanning the QR code on the Auvergne chicken packaging, consumers can access, via a smartphone application, details about the product.

In 2020, a small-scale trial in the United States' Midwest showed that blockchain technology can also be applied to free-range eggs.

Some of the Blockchain benefits championed by retailers are transparency and traceability, which can help in building consumer confidence in terms of quality, authenticity and food safety.

But here is the catch. Are we doing all this only to ensure that

**@ Value through processing - as simple as boiling an egg!**  
[www.WATTPoultry.com/articles/41640](http://www.WATTPoultry.com/articles/41640)





# THANK YOU

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