

# Leveraging Blockchain Technology for halal supply chains

Prof. Dr. Marco Tieman  
CEO, LBB International  
Professor, Help University  
Adjunct Professor, Universiti Malaysia Pahang

# Topics

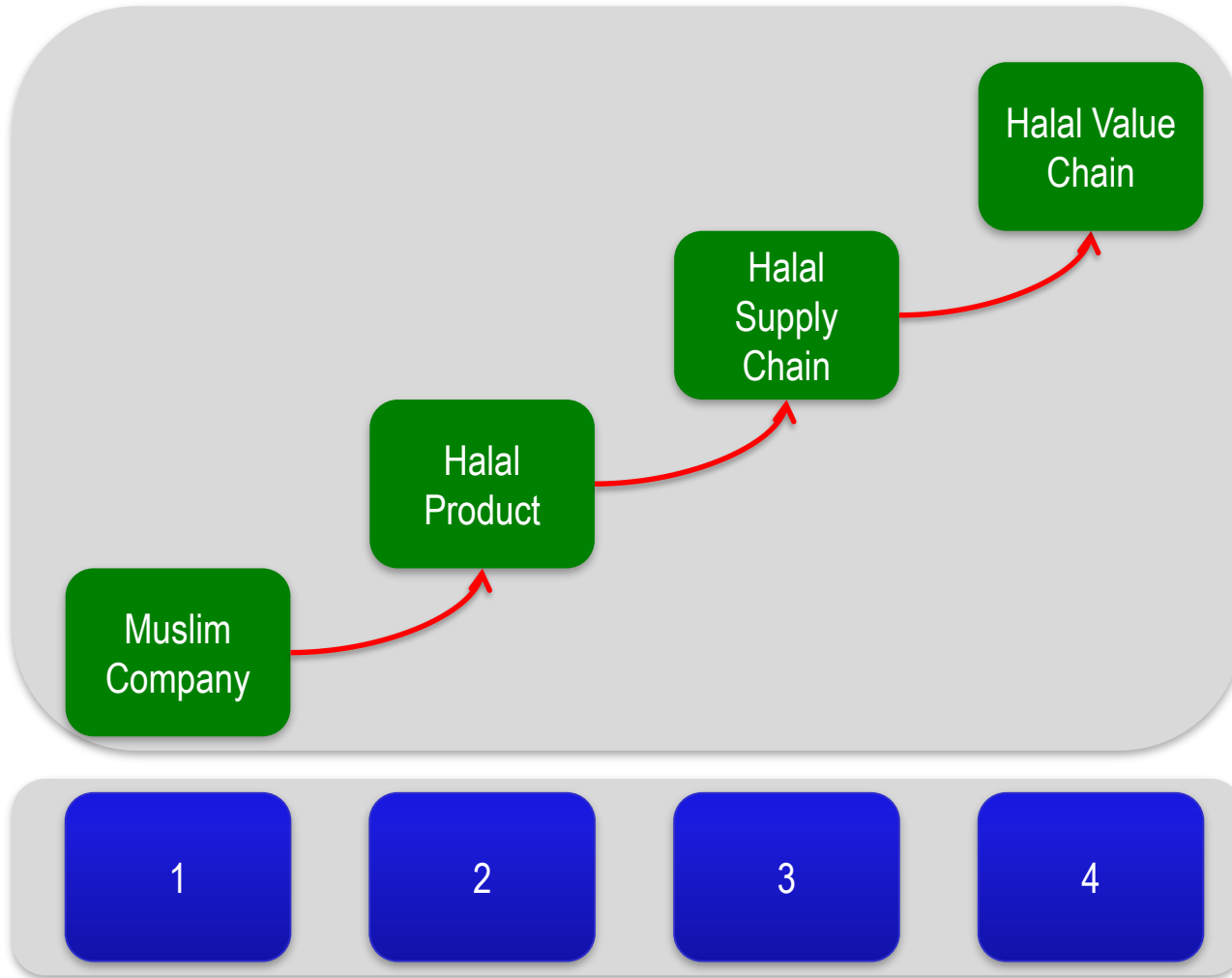
1. Towards halal SCM
2. Blockchain Technology
3. Halal Blockchains
4. The Halal Blockchain Innovation Project



# 1. Towards halal SCM

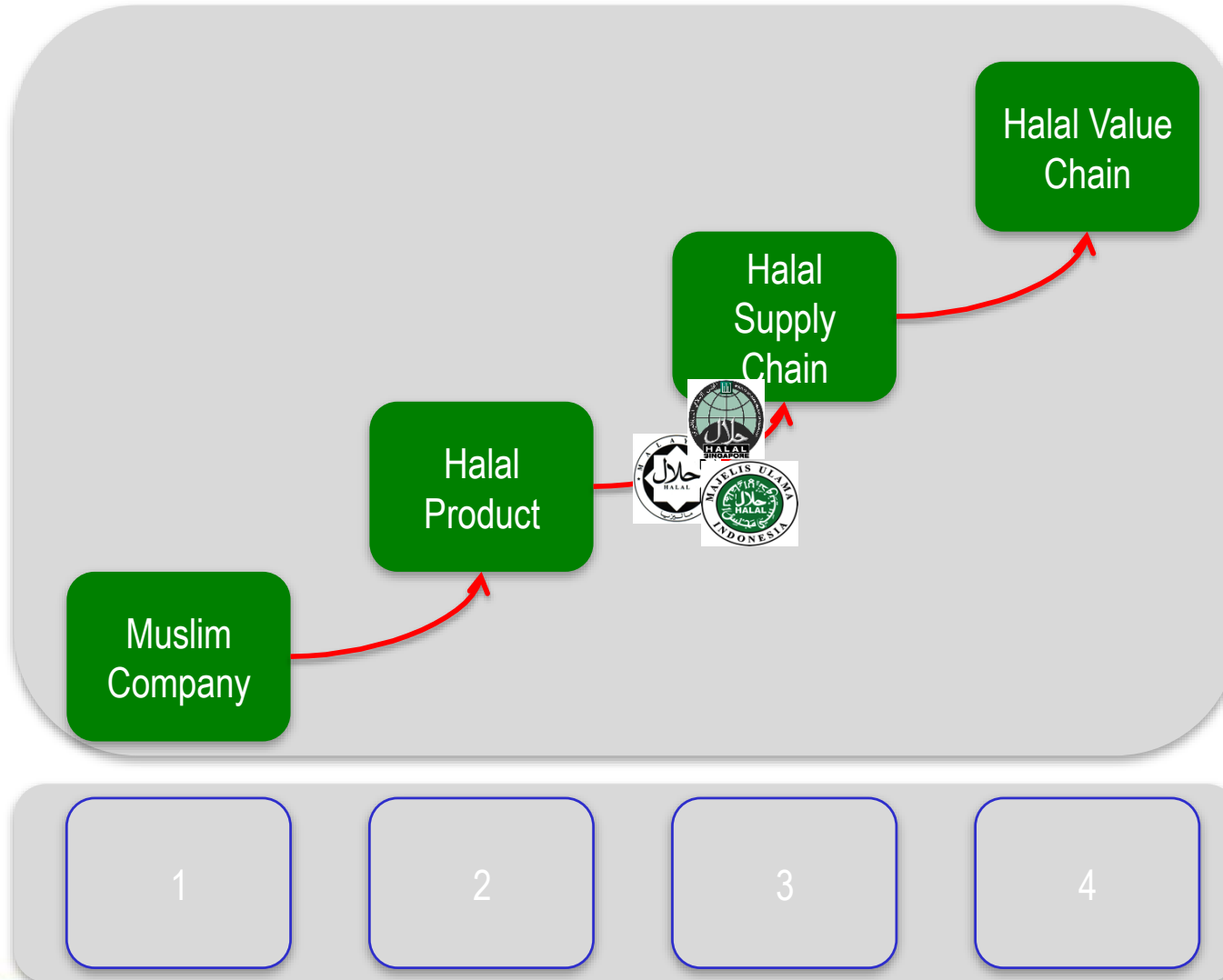


# Evolution of halal



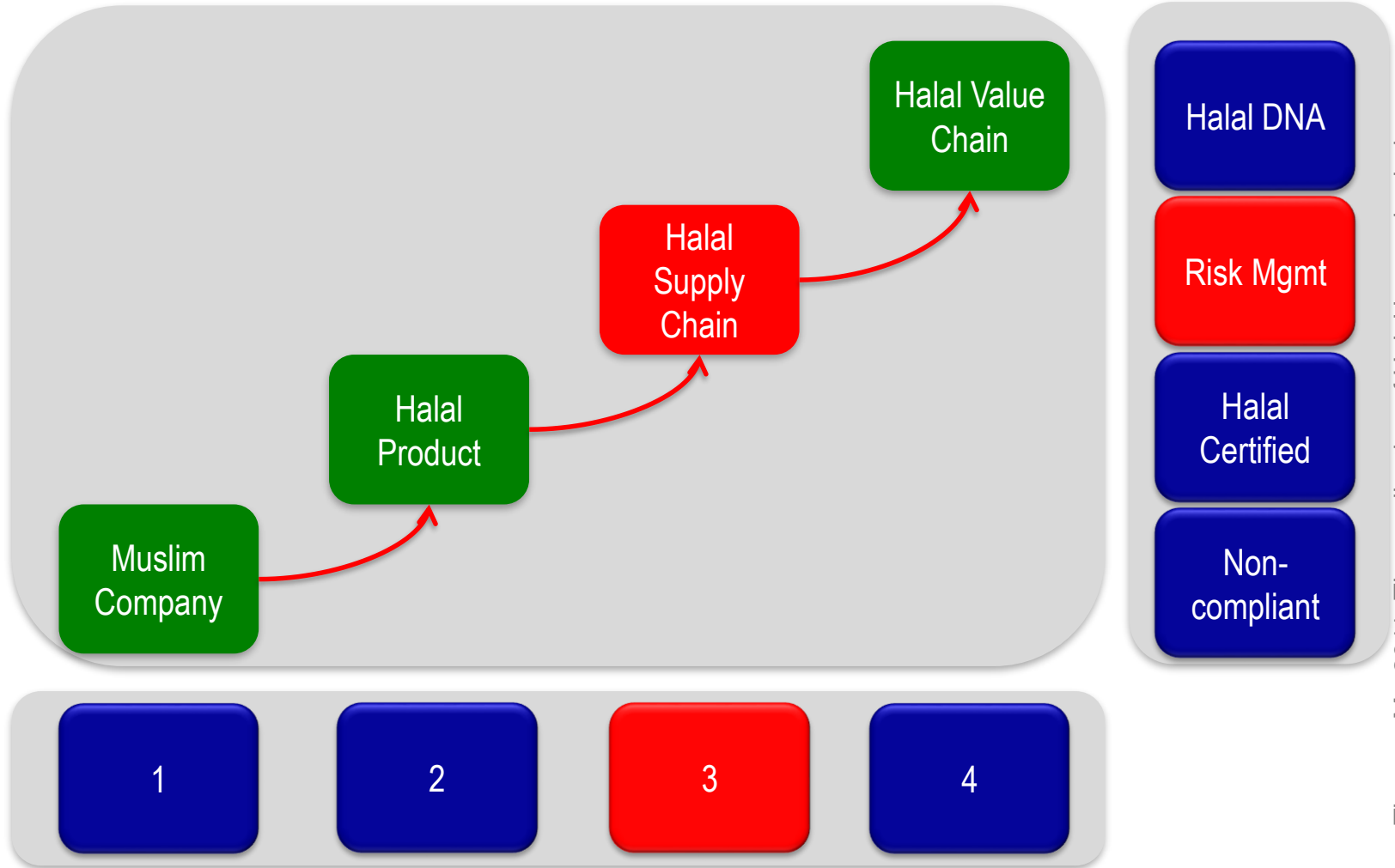
Tieman, M., 2011. The application of Halal in supply chain management: in-depth interviews. *Journal of Islamic Marketing*, 2(2), pp.186-195.

# Where is Malaysia (and Asia) in this evolution?



Tieman, M., 2011. The application of Halal in supply chain management: in-depth interviews. *Journal of Islamic Marketing*, 2(2), pp.186-195.

# Halal Maturity



Tieman, M., 2011. The application of Halal in supply chain management: in-depth interviews. *Journal of Islamic Marketing*, 2(2), pp.186-195.

# Emerging industry requirements

01

Food and non-food  
need to be halal  
certified

02

Halal requires a  
supply chain  
approach

03

Halal risk &  
reputation  
management  
critical

# Issues with Halal Supply Chains

## Halal foods pioneer sentenced for export fraud to Indonesia, Malaysia

The Jakarta Post

The Jakarta Post

## Major Chicken, Tofu Processing Company Caught Using Fake 'Halal' Logos

Details Published on Thursday, 12 January 2017 11:13

## 78 Kontena Daging Kambing Dan Babi Bercampur Masuk Malaysia

By Admin | July 20, 2017

National

## Concerns rise over halal fraud

Halal fraud appears to be on the rise, with developing countries such as Indonesia and Malaysia at high risk. Halal meat is often indistinguishable from its non-halal counterparts, which means that everyday consumers are not able to verify food's halal status. Falsely claiming halal for a food item is an easy fraud to pull off, especially during the retail sale of un-packaged food in restaurants and takeaways. It can be as sophisticated as [forgery of certification documents accompanying shipments of food](#) or as simple as dishonest signage in a takeaway store.

## *Fraud on halal food: More than just food safety at stake*

By Rena Elisa Johari, Halal Food Supply and Integrity Services, PwC Malaysia

## UPDATE-Brazil food fraud scandal: How much halal exports are in the mix?

## Pork in Cadbury's: Malaysian chocolate recalled after DNA traces found

Hazelnut and roast almond bars came up positive for pig DNA during testing for non-halal substances

## Cadbury chocolates are Halal, Jakim reiterates

T K Letchumy Tamboo, Astro Awani | November 19, 2014 21:24 MYT



KUALA LUMPUR: The Islamic Development Department (Jakim) reiterated that Cadbury chocolates, which are previously found tainted with porcine DNA are Halal to be consumed.



# Issues with Halal Supply Chains

Halal supply chains are **vulnerable** and **complex** to manage

- Halal is not a **consolidation requirement** in stuffing of mixed (LCL) trucks, containers, and ULDs
- Different **knowledge** levels and **segregation practices** in halal supply chains
- The **halal status** of cargo is not communicated on freight documents, cargo labels, and in ICT systems
- **Different requirements** for different Muslim markets



# Issues with Halal Supply Chains

Serious GAPS in halal supply chains,  
resulting in a **deficient halal  
assurance system!**

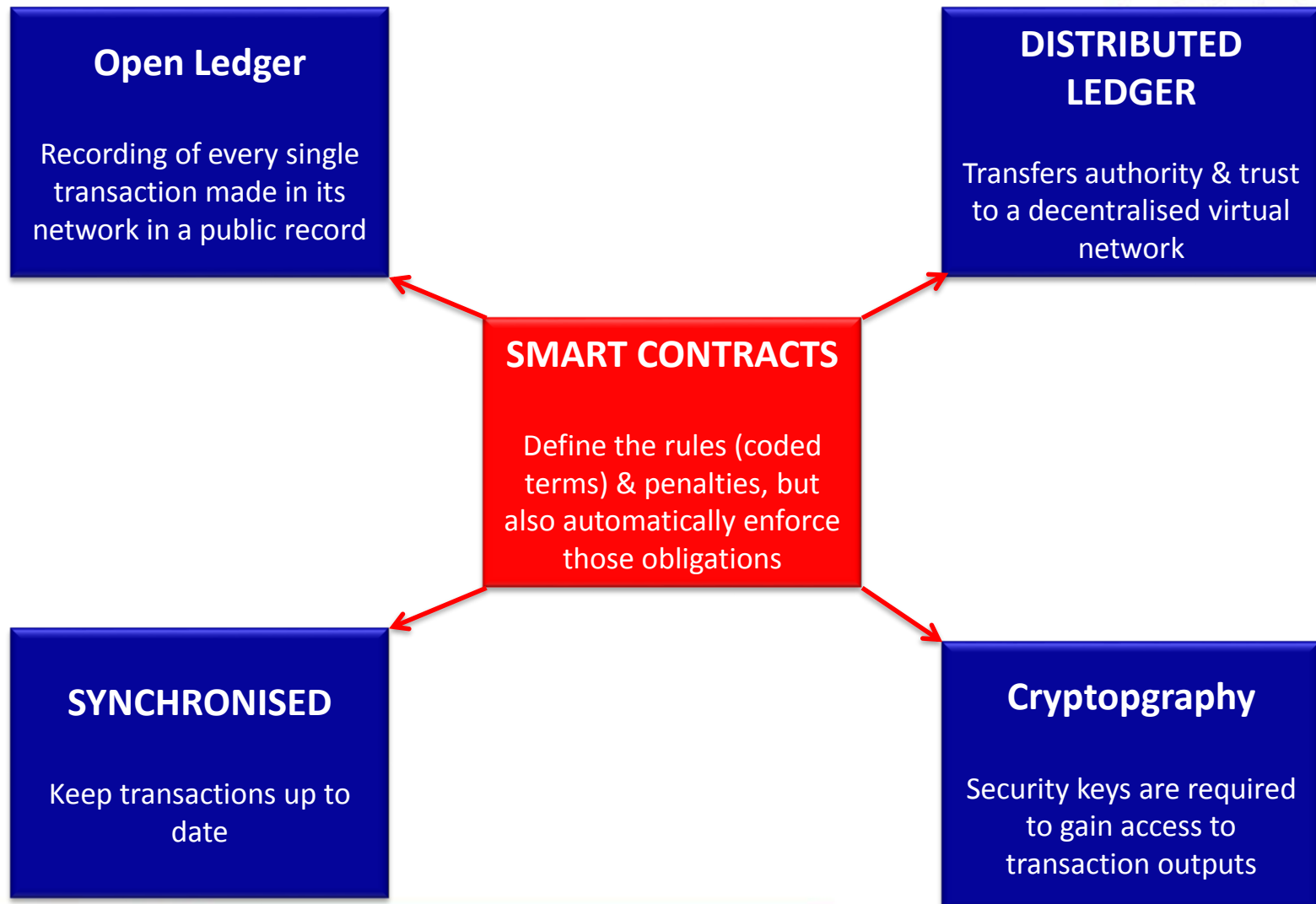
**Exposure of brands** to high-impact  
integrity violations.



# 2. Blockchain Technology



# Key concepts of blockchains



# Examples in SCM

Walmart partners with IBM to track food shipments in China: Retailers will use blockchain software to trace meat and vegetables through supply chain (20 October, 2016)

**Walmart** 



# Examples in SCM

## Microsoft's Blockchain Supply Chain Project Grows to 13 Partners (3 May, 2017)



# Examples in SCM

Maersk and IBM Unveil First Industry-Wide Cross-Border Supply Chain Solution on Blockchain (5 March, 2017)



**MAERSK**



# Examples in SCM

Europe's largest shipping port launches a blockchain field lab (25 September, 2017)



**Port of  
Rotterdam**

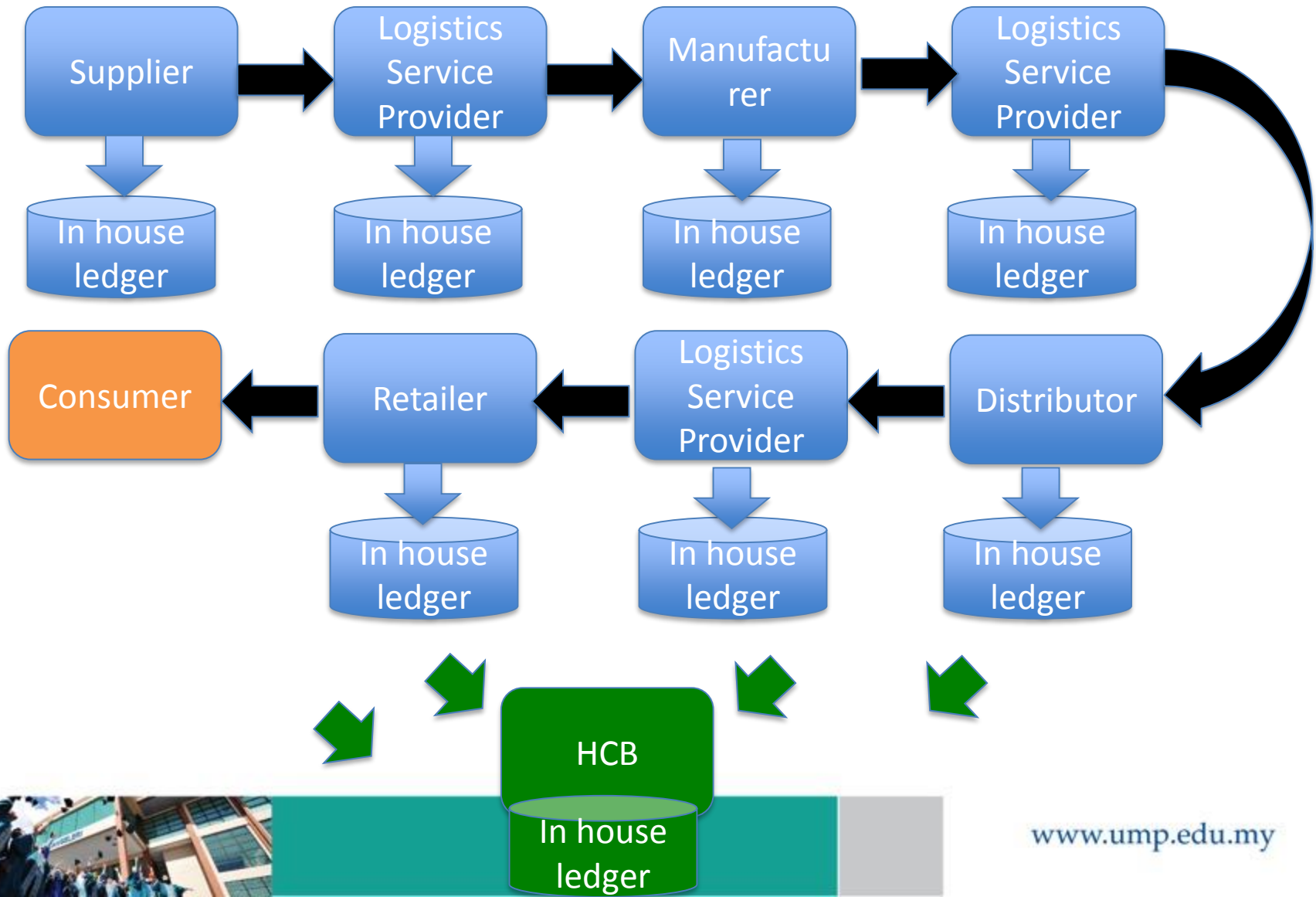




# 3. Halal Blockchains



# Without halal blockchains

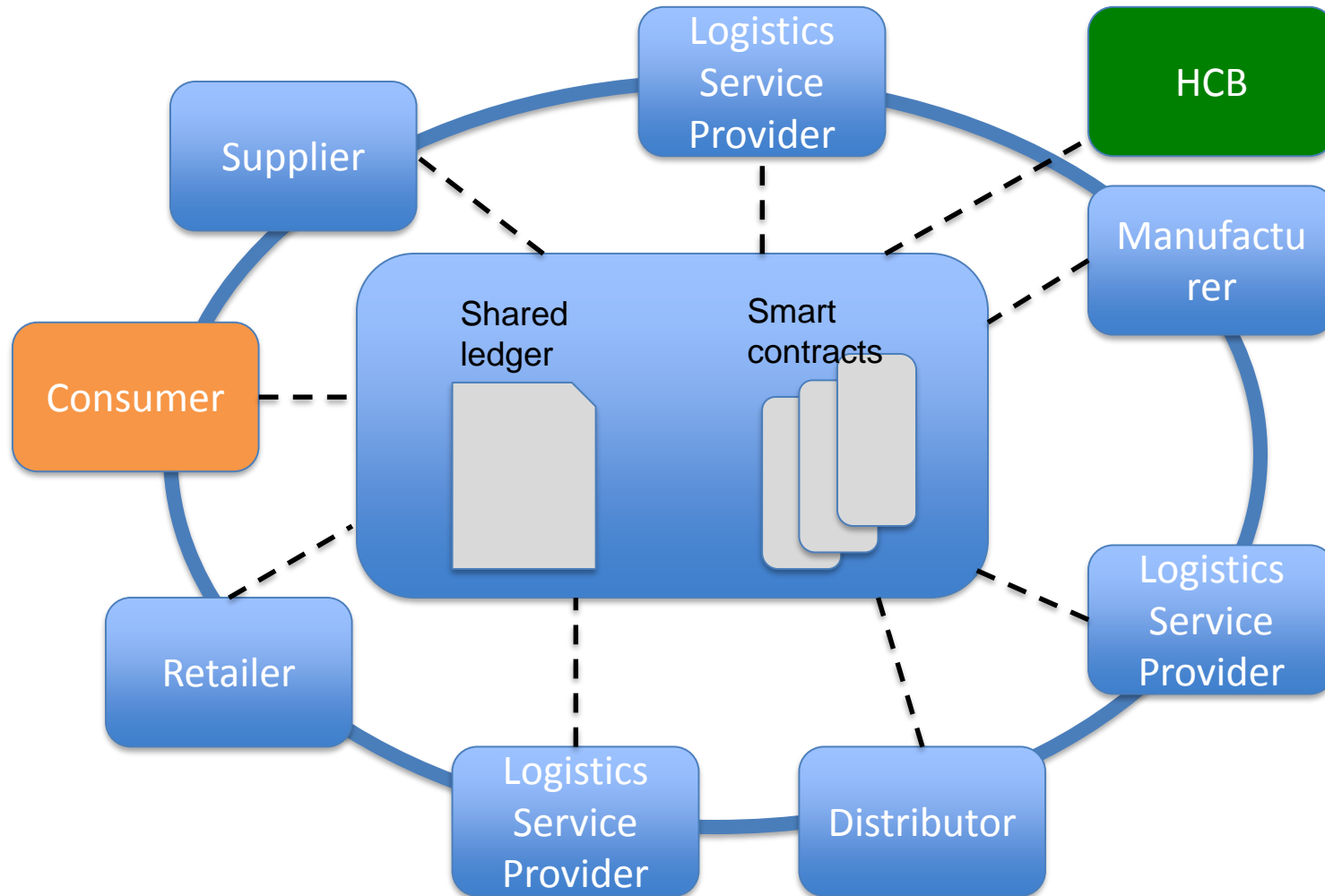


# What problems we want to solve?

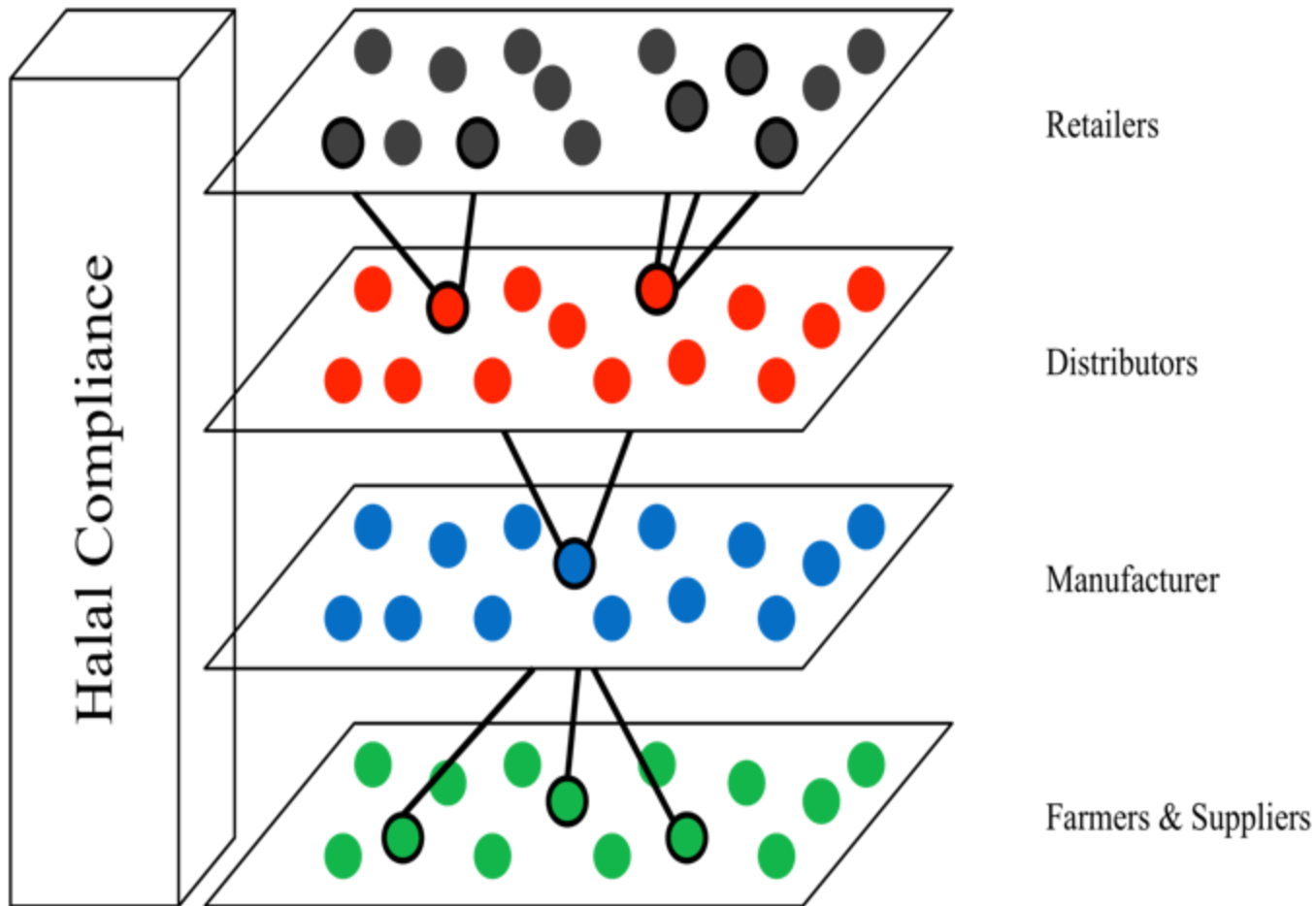
- **TRUST**: ability by the consumer to validate the halal integrity of the product
- **CHAIN INTEGRITY**: automatic alignment of market requirements to a supply chain scenario
- **TRANSPARENCY**: auditing of halal supply chains and effective isolation of a halal issue
- **HALAL PERFORMANCE OPTIMISATION**: measuring performance of supply chain partners



# With halal blockchains



# The goal



# Halal blockchain

- **Operational supply chain system** to communicate automatically halal logistics **instructions** in the supply chain based on market requirements
- Vehicle for **collaboration** in halal supply chains, creating **synergy advantages**
- A **tool** for the industry and halal authorities to **audit** and quickly **investigate a halal issue** in the supply chain



# 4. The Halal Blockchain Innovation Project



# Project Intent

The combination of the distributed ledger technology with smart contracts have the potential to create **high performance halal networks**.



Test the application of blockchain technology for halal **food**, **cosmetics**, and **pharmaceutical** supply chains.





# Consensus on design parameters

- Halal blockchain parameters with industries
- Consensus with the halal authorities:
  - What are the halal issues?
  - What information is required with each halal issue scenario?
  - How to segregate & communicate in halal supply chains?



# Next steps

- Consensus on design parameters (completed)
- Design of Halal Blockchain (in progress)
- Test of Halal Blockchain in food, cosmetics, and pharma (starting soon, to be completed in 2018)
- Go/No Go Decision (Q1 2019)
- Rollout



# Q & A

**Prof. Dr. Marco Tieman**  
marco@lbbinternational.com

