HALAL IN THE TECHNOLOGICAL AGE

By Dr Nur Rahman
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Increasing awareness & understanding and perception about halal

Multinationals joining the halal bandwagon

Halal food accounts for about 35% of Nestle’s global sales.

Value of traceability in supply chain & food security issues

Growth of Muslim population

Increasing interest from non-Muslim countries including Japan, Korea, Thailand..

Over 20% of world population is Muslim & Muslim countries are growing fast

Dynamics of Halal Food Growth

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Issues & Challenges

- **Traceability**
- **Lack of value addition & innovation**
- **Scale & capacity issue amongst halal producers – to compete with multinational**
- **Complexity for end to end halal throughout the value chain**
- **Risk of cross contamination**
- **Authenticity & integrity of halal**
- **Price, option & quality issues**
- **Competitiveness with non-halal products**
- **Lack of unified standard**
- **Differing standards amongst certification bodies → Authenticity & integrity of halal**
Cross contamination possibilities are huge with alcohol & pork products or derivatives as well as animal products from non-halal sources including gelatine, stock and fat, enzymes, emulsifiers and additives of non halal origin.

How can we protect the authenticity and integrity of halal?

Source: Molecular & Bioformatics Laboratory, Technology Park Malaysia (2009)
Halal Industry in 4th IR

Industrial Internet of Things (IIoT)
the digitisation of halal supply chain, from farms to warehousing to food distribution and retailing to enable producers and regulators to monitor and analyse the entirety of the process.

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Use of DNA, PCR, GCMS, HPLC, FTIR, LCMS for detection

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Big Data
One aspect of big data application in halal industry is in halal audit and inspection.

Smart Logistics
to ensure halal products are stored and moved safely and efficiently. With the right combination of technology, smart logistics can improve halal traceability, efficient route planning, and better connectivity.

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Mobile Technology
Halal audit mobility, driven through smartphones or tablets, has become a game changer. Tablets with e-signature facilities can help collect and securely process voice data, images, videos, and even GPS coordinates as electronic evidence.

Block Chain
halal authority can issue halal certificate with blockchain technology that can include production and distribution records by halal producers. Blockchained halal certificate cannot be falsified without leaving an evidentiary trail, which allows halal producers and regulators to quickly trace products back to their source, allowing for fast recall and removal in case of contamination or fraud.
Brunei in Halal Food Industry Today

Government linked company tasked to spearhead the development of the food industry

To be an iconic halal brand in the world that excels through innovation and virtue

Export Market

- CHINA
- SINGAPORE
- AUSTRALIA
- JAPAN
- MIDDLE EAST

Partnership with over 18 SMEs
Multiple product categories

Brunei Darussalam’s stringent and government-backed halal certification process is highly regarded globally.