CHALLENGES IN THE TEMPERATURE CONTROLLED SUPPLY CHAIN

Khazanah Nasional is the investment holding arm of Malaysia and the Government’s strategic investor in new industries and markets.

Malaysian Agrifood Corporation is an integrated food supply chain management company in Malaysia.

Cold Chain Network (M) Sdn Bhd (CCN) is a logistics, warehousing facility provider and a distribution centre.
Multi-compartment Fleet
- Equipped with GPS
- On-board temperature monitoring
- Online temperature monitoring

<table>
<thead>
<tr>
<th>FLEET</th>
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</thead>
<tbody>
<tr>
<td>Fleet Type</td>
<td>No. of Units</td>
</tr>
<tr>
<td>40 Footers</td>
<td>23</td>
</tr>
<tr>
<td>18 Tonner</td>
<td>10</td>
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<tr>
<td>8.5 Tonner</td>
<td>16</td>
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<tr>
<td>5 Tonner</td>
<td>5</td>
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<tr>
<td>TOTAL</td>
<td>54</td>
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</tbody>
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Temperature Controlled Warehouse
- 198,195 ft² floor space.
- 18,828 pallet positions.
- 39 loading bays with dock shelters.
- 15 cold rooms
  - 4 chillers
  - 4 freezers
  - 2 multi-temperature cold-rooms
  - 5 dedicated picking chambers
- Flexible cold room temperatures -30°C to 18°C.
- Sub-zero (-10°C) capable receiving/ante rooms

COLD CHAIN KEY CHALLENGES

1. Maintaining **temperature integrity** throughout the delivery chain. We sell temperature.
2. Ensuring Transports and deliveries are **IFOT**, and at the right temperature.
4. **Timely and accurate** information – on deliveries, to customer complaints.
5. **Managing labour** – cold working conditions
MAINTAINING TEMPERATURE INTEGRITY TO ENSURE PRODUCT QUALITY & COST OPTIMISATION

- Electrical Consumption is rising.
- A slightest change in the activities such as the door opening frequency due to activities has an impact on the condensation rate in the chambers.
- Over a period of time, the refrigeration system is less efficient or malfunctioning.
- Generally outside temperature is recorded higher than normal, sometime up to 35° C – 38° C, has forced the Refrigeration System to work harder to maintain the temperature requirement.

WINNING WITH INNOVATIONS

- Like all supply chains, cold chain operators must continually upgrade technology to ensure efficiency, integrity, and safety. This includes both back-end IT infrastructure and front-end devices to gather and report key data such as temperature reading in real time.
- Cold chain carriers have invested considerably in on-board equipment built into refrigeration units to track temperature and location, offering increased visibility and the opportunity to prevent or mitigate loss.
- We are also exploring “rapid cooling” systems.
GOING THE NEXT LEVEL - BIC

• A dedicated team was formed to look into BIC strategies. The structure of the team mainly Sponsors, Project Leader & Team Member.
• Leaders normally are people not involved in the Operations or SME (Subject Matter Expert)

At CCN, a project called BIC (Best In Class) was launched in 2015, mainly looking into COMPLIANCE, SAFETY & PROFITABILITY.

One of the key deliverables of the Project is to review all the SOPs involving temperature integrity.

A team was also formed to explore the latest technology and new innovations to keep us abreast with our competitors.

SUMMARY

• Operating a cold chain network is extremely challenging and competitive.
• In order to sustain business one has to be efficient and cost effective. The main focus will be on control of energy usage, manpower and facilities (warehousing and fleet) utilisation.
Quality Certifications - CCN

MS 1900:2005
Quality Management Systems - Requirements From Islamic Perspectives

MS 1480:2007
Food Safety According To Hazard Analysis And Control Point (HACCP) System

ISO 9001:2008
Quality Management Systems - Requirements

MS 1900:2005 Certified
MS 1480:2007 Certified
ISO 9001:2008 Certified

Halalan-Toyyiban Assurance Pipeline Part 1: Management System Requirements For Transportation of Goods And/or Cargo Chain Services

Halalan-Toyyiban Assurance Pipeline Part 2: Management System Requirements For Warehousing And Related Activities

HALAL LOGISTICS Certified