
THERMO KING
CryoTech transport refrigeration
Proven for high quality, sustainable and cost effective retail distribution
THERMO KING
CryoTech
Ingersoll Rand

Agenda

- What is CryoTech
- Food Retail typical supply chain
- SPAR: Case Study
- ASKO: Customer testimonial

What is CryoTech

Food retail: Typical supply chain

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Supply

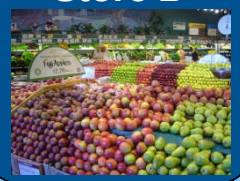
Producer

Distribution

Distribution center

Store A

Store B



Store C

Store D

Transport profile:

- Long Haul
- Transport from point A to B
- Long time driving between drops

Transport profile:

- Multi drop
- Mixed loads
- Short driving time between drops

Food retail: Refrigeration technology

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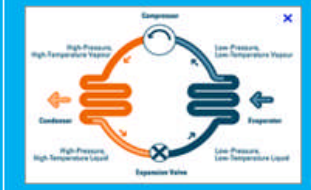
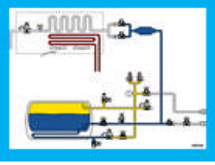
		Supply Chain / Transport profile	
		Supply / Long haul	***Distribution / Multi drop***
OPERATION	**Main requirement**	Keep the freshness of the transported products	
	Door opening frequency	LOW	HIGH
	Warm ambient air contamination	LOW	HIGH
TECHNOLOGY	**Use of conventional refrigeration cycle** 	• Keeps the cargo temperature constant • Adequate performance • Performing and known technology • **Secured product freshness**	• Cooling capacity limited by the ambient temperature • Average cargo temperature increases • **Risk of reduced freshness**
	Use of cryogenics (Open cycle with evaporator) 	• Presently presents low added value vs conventional refrigeration technology	• Cooling capacity not influenced by ambient temperature • Fast temperature pull down • Stable cargo temperature • **Secured product freshness**

Food retail: Refrigeration technology

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COMPLEMENTARY
technologies

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Offers solutions for both applications

Case study SPAR, Netherlands

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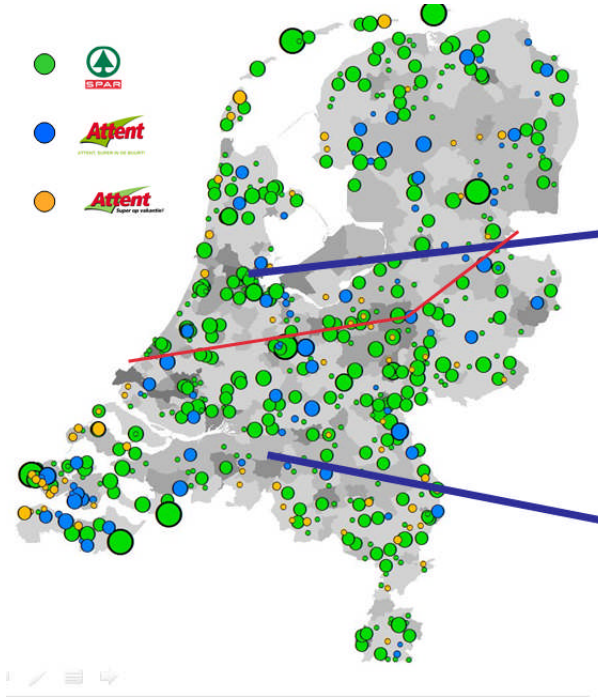
- SPAR Netherlands

SPAR
Netherlands

SPAR turnover
€ 727 mio

350 SPAR stores
110 Attent stores
100 `neutral` stores
2 full service warehouses
Ambient, fresh, frozen



Customers challenge

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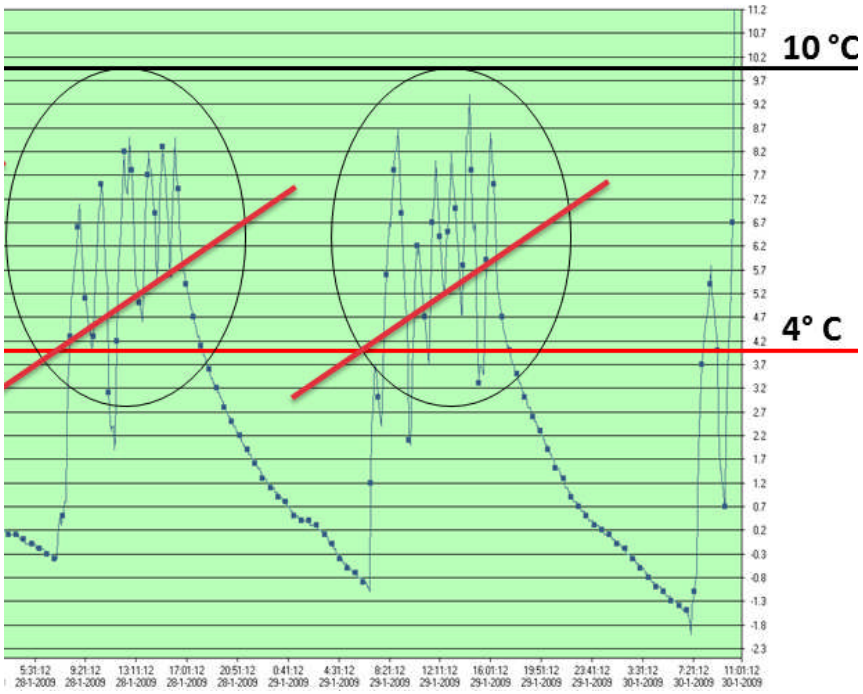
Temperature control & quality guarantee

- Frequent door openings
- Loss of temperature
- Unable to master the cold chain



Distribution set up

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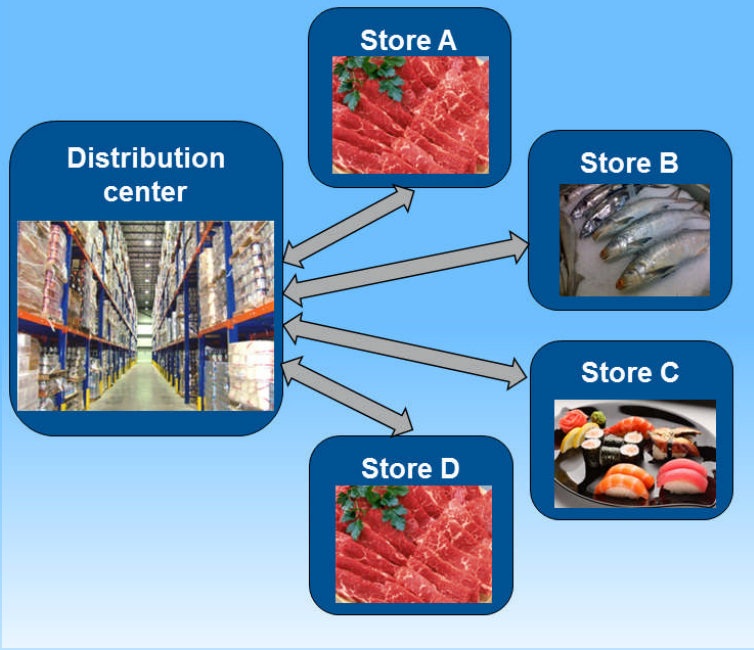
Main fresh products

Transport profile

- Mix of products in the same trailers

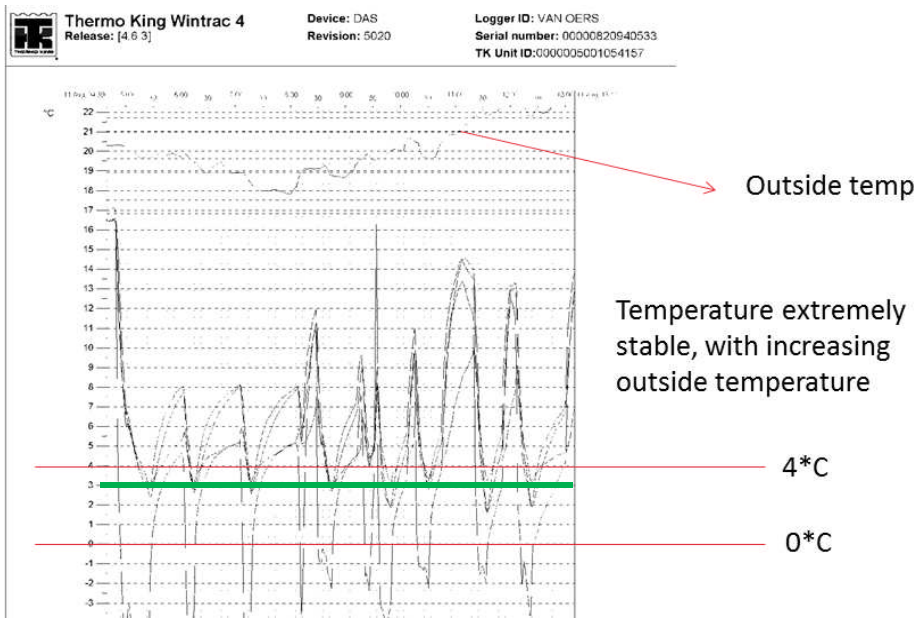
Sensitive products



Transport profile

- Direct shuttles to the stores

CryoTech integration



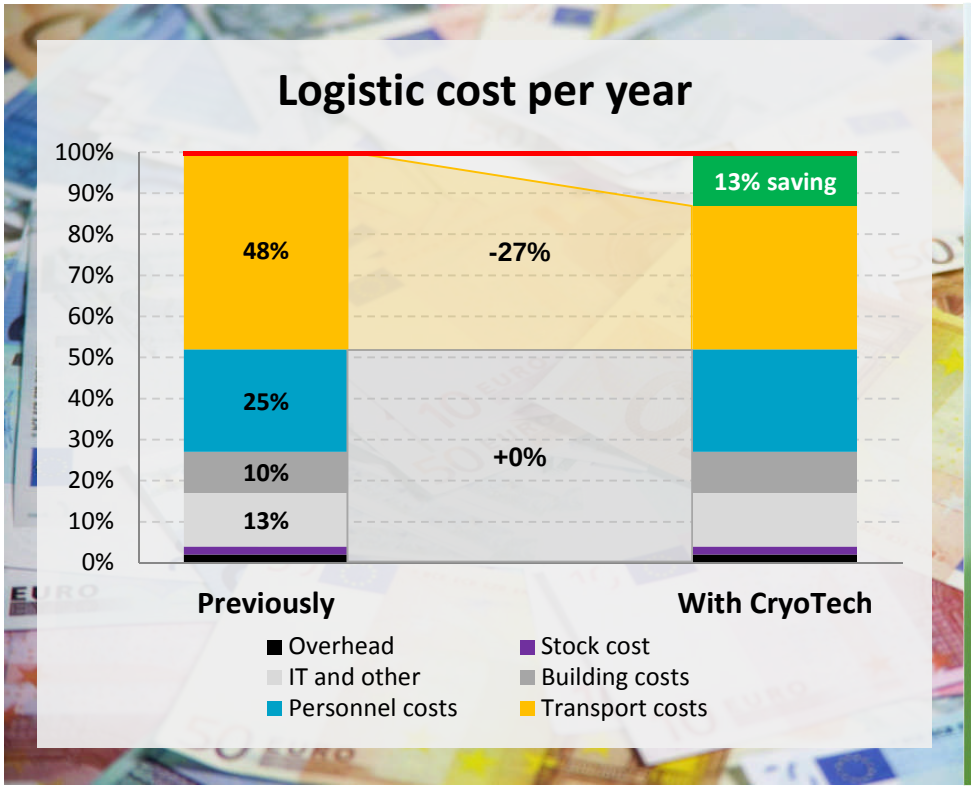
SPAR's Cold Chain **secured**

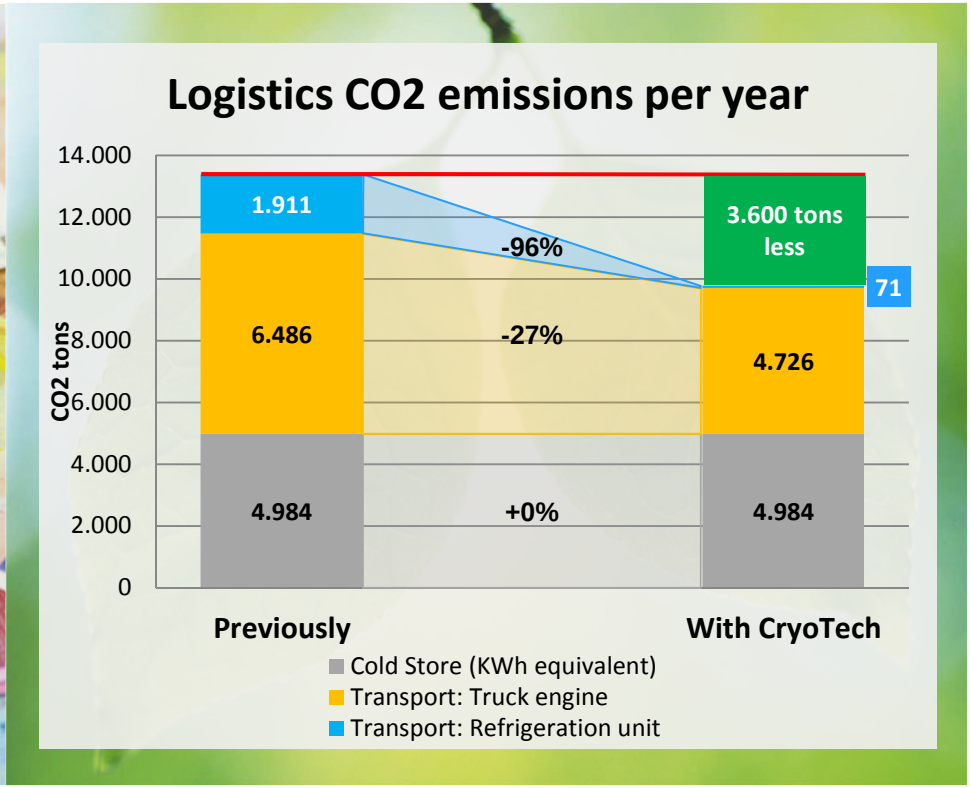
- **All direct Shuttling eliminated**
- **Integrated transportation**

  - Small drop sizes per store
  - Approximately 5 stops per vehicle per day

28% reduction of yearly driven **kilometers**

Financial and environmental impact





Reference Carbon footprint equivalency:

- Electrical power = 445 g CO2 / kWh consumed
- Diesel fuel = 2,6 CO2 kg CO2 / ltr consumed
- R744 (Liquid CO2) = 0,06 kg CO2/ kg R744 consumed

Financial and environmental impact

Total **LOGISTIC COST** reduced by **13%** per year

27% LOWER logistics **CARBON FOOTPRINT**

FLEET 100% converted to **CRYOTECH**

Another satisfied customer

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The RIGHT CHOICE for distribution

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- Keeps the **integrity** of the **cold chain**
- Piek CERTIFIED allows **in-city night distribution**
- SUSTAINIA 100 **environmentally friendly**
- Meets upcoming EU **legislative requirements** expected for
  - Noise
  - HFCs
  - Engine emissions

The RIGHT CHOICE for distribution

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PROVEN for high quality, sustainable and cost effective **RETAIL DISTRIBUTION**


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Thank you for your time!
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