10th World Cargo Symposium

PERISHABLES: Flying it Fresh!
Perishables Track - Flying it fresh!

Opening Remarks

Franco Nanna
Director Global Logistics Services
Cargolux Airlines
Perishables Track - Flying it fresh!

Welcome Address

Victor Mejia
Cargo Vice President
Avianca
This year’s theme of the WCS is “The Value of Air Cargo” and the transport of perishables by air especially offers a great value to the customers by bringing them fresh products from the farthest regions globally. And this at a time to market that cannot be matched by any other mode of transportation.

The agenda under the motto “Flying it fresh!” aims at highlighting Air Cargo as THE mode of transport for time & temperature sensitive produce and examines how it can sustain its place in the value chain.

Join us at the WCS 2016 in Berlin for a high quality track lead by renowned experts of the industry, ready to share their insights regarding the current state of the industry, technological trends and future market developments in the Perishable Cargo Industry.
“Flying it fresh!” Air Cargo as THE mode of transport for time & temperature sensitive products

- **Global Update on Perishables Markets and emerging Trends** - Gerard de Wit, Managing Director World ACD
  Overview about the current state of the worldwide perishables market, the latest trends by origins and destinations, specific perishable types by geographical areas and highlight the major Market Players on the Freight Forwarder side

- **Averting the Modal Shift** - Natasha Solano, Global Business Development Manager Perishables Logistics, Kuehne+Nagel
  In order to prevent customers from switching to other modes of transport, the Air Cargo Industry must improve their service quality and processes to retain a competitive edge and defend their market share.

- **The Benefits of Vertical Collaboration** - Success story between Shippers, Freight Forwarders, Ground Handlers and Airlines
  Learn about the key takeaways from this joint project and what the Perishables Industry can learn from this approach

- **Shipper’s expectations meet the Air Cargo Value Proposition** - Franco Nanna, Director, Global Logistics Services, Cargolux - Bernard Piet, Supply Chain Relations Manager, Royal FloraHolland - Christopher Dehio, Head Of Products & Solutions Management Temperature Sensitive Logistics, Lufthansa Cargo - Natasha Solano, Global Business Development Manager Perishables Logistics, Kuehne+Nagel
  Invitation for shippers to voice their needs and expectations with their partners in the supply chain from Freight Forwarders, Ground Handlers to Airlines to create a better mutual understanding of capabilities and limitations in the transport of perishable goods

**10th World Cargo Symposium**
15-17 March 2016 – Berlin, Germany
Although the 10 Industry Priorities defined by the IATA Cargo Committee aim to support the perishable supply chain, the following 5 Priorities have a special contribution:

1. **Enhancing Safety**
   Develop the transportation of temperature controlled ULD’s in accordance with safety policies from airlines around the world.

2. **Strengthening the Value Proposition of Air Cargo**
   Seize the air cargo shipping speed for temperature sensitive products, and seek to improve efficiency in flight connections aiming to reduce shipment times by 48 hours.

3. **Modernizing Air Cargo**
   Work on migrating to XML standards to support and optimize EDI capabilities between shippers, agents and consignees’ systems improving message interchange to offer real time status notifications including temperature controls.

4. **Improving Quality**
   Support end-to-end quality standards initiatives like Cargo 2000 to improve reliability of services and information visibility, special focus on efficient connections to reduce transit times.

5. **Building Sustainability**
   Cargo airlines should maintain their leadership in shipping Perishables and Pharma, which are solid, growing industries with high profit margin expectations.

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**10th World Cargo Symposium**
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Examples of developments in Perishable Sector:
Avianca Cargo has streamlined the release process of perishable cargo involving all participants in the supply chain.

**Objectives and Achievements**

AV Cargo transports ~147.2K ton of perishable cargo per year, however ~33.6K tons are being shipped following a new cooperative business process.

1. SHP and AGT
   - Direct communication channels with the SHP
   - SHP, AGT and Airline aligned processes
   - Monthly Working Groups
   - Creation of common KPIs across the entire supply chain (shipper-agent-airline)
   - Standard EDI Capabilities
   - HAWB data capture portal for farmers
   - Document pouch portal for AGT

2. Local Authorities
   - Participation in Working Groups organized by IATA in BOG in order to align local authorities in the e-AWB process
   - BASC and other security certifications
   - Approach to CBP / USDA field officers to assure the implementation of electronic document verification

3. e-Freight
   - In 2015, e-AWB was fully implemented with largest Colombian flower exporter (500 monthly e-AWB)
     - All flights from BOG and MDE to MIA are 100% e-AWB
   - Since 4Q of 2015, agriculture advanced electronic document transmission to CBP was implemented
     - 26 freighter flights per month from BOG to MIA are e-Freight (invoices, sanitary and phytosanitary, AWB, HAWB, USDAAPHIS permits)
     - CBPs document validation process was executed after landing, now it has moved 2 Hrs. before landing

The customs clearance process has been reduced up to 38% for e-Freight flights.

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Latin America presents opportunities in the perishable market

Main Perishable Latin American Markets
Tons per year (K)

Source: World International Trade Center. International trade in goods statistics by product group:
0603 Cut flowers and flower buds for bouquets, fresh or dried (2014)
070920 Asparagus, fresh or chilled (2015)
081040 Cranberries, bilberries and other fruits of the genus Vaccinium, fresh (2014)
030441 Fresh or chilled fillets of Pacific salmon, Atlantic and Danube (2015)
Perishables Track - Flying it fresh!

Global Update on Perishables Markets and emerging Trends

Gerard de Wit
Managing Director
WorldACD
Perishables Markets – Modal Shift - Trends
Lufthansa to terminate its scheduled freighter service from Quito and Bogota

“Once matured, the 'New Silk Road' has the capability to stabilize China’s food system by enhancing international trade (Rabobank)

At Delta worldwide cooler facilities are set up to store perishables

Emirates invests heavily in cold storage facilities

Ethiopian Airlines to Build Africa’s largest Cargo Terminal to support the Ethiopian fast growing export of agricultural products

Temperature variations are far greater in air freight than sea freight (DHL)

Finnair to build new cargo terminal, it will include special cargo handling Areas for perishable products...

Consolidated Aviation Services sees immediate return on perishable handling investment, recording +400% increase on 2014 for volumes handled first 9 months of 2015 in Miami.
Perishables ("PER") for air freight means predominantly flowers, fish, fruits & vegs and meats
Strong correlation: income growth <> PER food import

Growth of food perishables import per capita (2000 to 2014) CAGR

- USA
- Japan
- EU28
- India
- China

Size of bubble represents value of PER food import in 2014

80% of worldwide PER food is imported by developed countries

Source: United Nations and Worldbank

March 2016
Strong correlation: spend on food <> PER food import

Value of food perishables import per capita (US$ in 2014)

Food spend per capita (US$ in 2014)

Source: United Nations and US Dep of Agriculture
Income growth coupled with population growth will lead to increased PER demand in India and China.

Source: United Nations and IMF

March 2016
Developed countries spend more on fresh food

Figures per capita in US$ in 2014:

- **Switzerland**: 1,958
- **Australia**: 1,472
- **Norway**: 1,470
- **Finland**: 1,401
- **USA**: 693
- **Poland**: 676
- **Hungary**: 551
- **China**: 392
- **Indonesia**: 351

Source: The Nielsen Company, United Nations, and US Dep of Agriculture
Changing shares in global middle class consumption

Shares of global middle class consumption (2000 to 2050)

Middle class = households with USD10-100 daily expenditure p.p. in purchasing power parity terms
World’s largest food retailers keep growing, which provides them with scale for global sourcing of PER

Retail turnover in top-15 countries (trillion US$)

- Retail turnover expected to grow at CAGR of 6.0% between 2015 and 2020
- Almost 70% of absolute growth is expected to be realized in developing countries
- Groceries logistics market expected to grow at CAGR of 5.5% in same period

Source: Institute of Grocery Distribution and Technavio

March 2016
Top-10 origins for perishables-by-air

Top-10 countries based on perishable volume – 2015

1. Kenya (1)
2. India (3)
3. USA Pacific States (2)
4. Australia (4)
5. Netherlands (8)
6. Egypt (7)
7. Ecuador (5)
8. Colombia (6)
9. Norway (11)
10. Chile (9)

( ) = position in 2014

Source: WorldACD
Freighter deployment in PER markets

Percentage of actual weight carried on freighter aircraft

- **Top-10 PER origins**
- **All other origins worldwide**

<table>
<thead>
<tr>
<th>Month</th>
<th>Top-10 PER origins</th>
<th>All other origins worldwide</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nov 2014</td>
<td>47.2%</td>
<td>46.6%</td>
</tr>
<tr>
<td>Dec 2014</td>
<td>47.0%</td>
<td>48.3%</td>
</tr>
<tr>
<td>Nov 2015</td>
<td>46.1%</td>
<td>41.6%</td>
</tr>
<tr>
<td>Dec 2015</td>
<td>45.5%</td>
<td>43.6%</td>
</tr>
</tbody>
</table>

Source: WorldACD flight level data (31 airlines contributing)
Key markets perishables-by-air (top-3 flows per sub-category)

Source: WorldACD
Country rankings based on absolute perishable volume growth from 2014 to 2015

### Lowest growth
1. Argentina
2. UK
3. USA Pacific States
4. Sri Lanka
5. Chile
6. Peru
7. USA North East
8. Brazil
9. Thailand
10. USA Atlantic South

### Highest growth
1. Netherlands
2. India
3. Australia
4. Norway
5. Egypt
6. Kenya
7. Pakistan
8. Ecuador
9. South Africa
10. Morocco

Country name in red denotes country in the world's top-10 PER-by-air origins

**Source:** WorldACD

March 2016
Worldwide shares – volume & yield changes

SHARE of perishable volume last 2 years together

- Fruits & Vegetables: 47%
- Fish & Seafood: 27%
- Flowers: 17%
- Meat: 9%

Vol CHANGE 2014 > 2015

- ALL CARGO: 2%
- Flowers: 9%
- Fish & Seafood: 8%
- Fruits & Vegetables: 6%

Source: WorldACD
Perishables (PER) compared to other air products

2015 Yield (in USD)
General Cargo =100

<table>
<thead>
<tr>
<th>Product</th>
<th>2015 Yield (in USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>100</td>
</tr>
<tr>
<td>AVI</td>
<td>163</td>
</tr>
<tr>
<td>DGR</td>
<td>141</td>
</tr>
<tr>
<td>PER</td>
<td>68</td>
</tr>
<tr>
<td>PIL/TEMP</td>
<td>154</td>
</tr>
<tr>
<td>VAL</td>
<td>269</td>
</tr>
<tr>
<td>VUN</td>
<td>126</td>
</tr>
<tr>
<td>Special</td>
<td>95</td>
</tr>
<tr>
<td>All products</td>
<td>99</td>
</tr>
</tbody>
</table>

USD Yield DECREASE 2014 > 2015

<table>
<thead>
<tr>
<th>Product</th>
<th>2015 Yield (in USD)</th>
<th>USD Yield DECREASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flowers</td>
<td>60</td>
<td>-6%</td>
</tr>
<tr>
<td>Fish &amp; Seafood</td>
<td>66</td>
<td>-9%</td>
</tr>
<tr>
<td>Fruits &amp; Vegetables</td>
<td>88</td>
<td>-10%</td>
</tr>
<tr>
<td>Meat</td>
<td>50</td>
<td>-9%</td>
</tr>
</tbody>
</table>
PER yield has dropped less than General Cargo yield over last two years

Index Jan 2014 = 100

PER
General
JetA fuel

Source: Platts/IATA (fuel data) and WorldACD
EU perishables market: evolution of export and import

Source: WorldACD analysis of Eurostat data

EU perishables total with countries outside EU28 (volumes trade ton)

<table>
<thead>
<tr>
<th>Year</th>
<th>Export</th>
<th>Import</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>38%</td>
<td>62%</td>
</tr>
<tr>
<td>2014</td>
<td>41%</td>
<td>59%</td>
</tr>
<tr>
<td>2015</td>
<td>43%</td>
<td>57%</td>
</tr>
</tbody>
</table>

NB: CAGR of 6.7%

NB:
1) Air portion of PER trade as % of total PER trade (2015)
   - Export: 2.1%
   - Import: 3.4%

2) Average PER commodity value (total of export and import in 2014)
   - Air: eur 4.9 per kg
   - Sea: eur 1.8 per kg

March 2016
Main markets perishables-by-air to and from Europe

Source: WorldACD
Modal shift is best analyzed per individual market

Year-on-year trade growth by mode of transport (2014 to 2015)
For top 10 countries based on perishables weight

Export from Europe

% Air transport

Air growth < > sea growth

% Sea transport

Source: WorldACD analysis of Eurostat data
Modal shift is best analyzed per individual market

Year-on-year trade growth by mode of transport (2014 to 2015)
For top 10 countries based on perishables weight

Source: WorldACD analysis of Eurostat data
Modal shift in key perishables: From Europe TO selected countries

Air and sea share for selected markets and commodities

**Europe to Qatar**
- Flowers & plants:
  - 2014: 80% (Sea), 20% (Air)
  - 2015: 82% (Sea), 18% (Air)
- Vegetables:
  - 2014: 50% (Sea), 50% (Air)
  - 2015: 53% (Sea), 47% (Air)

**Europe to UAE**
- Flowers & plants:
  - 2014: 80% (Sea), 20% (Air)
  - 2015: 82% (Sea), 18% (Air)
- Vegetables:
  - 2014: 50% (Sea), 50% (Air)
  - 2015: 53% (Sea), 47% (Air)

**Europe to USA**
- Flowers & plants:
  - 2014: 66% (Sea), 34% (Air)
  - 2015: 60% (Sea), 40% (Air)
- Vegetables:
  - 2014: 34% (Sea), 66% (Air)
  - 2015: 40% (Sea), 60% (Air)

**Europe to Japan**
- Flowers & plants:
  - 2014: 36% (Sea), 64% (Air)
  - 2015: 40% (Sea), 60% (Air)
- Vegetables:
  - 2014: 64% (Sea), 36% (Air)
  - 2015: 60% (Sea), 40% (Air)

Δ in air share = -2% (Flowers & plants), -3% (Vegetables), -6% (Fish), +4% (Vegetables)

Source: WorldACD analysis of Eurostat data
**Modal shift in key perishables:**
From selected countries TO Europe

**Air and sea share for selected markets and commodities**

<table>
<thead>
<tr>
<th>Country to Europe</th>
<th>2014</th>
<th>2015</th>
<th>Δ in air share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cut flowers</td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Vegetables</td>
<td>21%</td>
<td>23%</td>
<td>+2%</td>
</tr>
<tr>
<td>Vegetables</td>
<td>54%</td>
<td>57%</td>
<td>+3%</td>
</tr>
<tr>
<td>Melons &amp; papayas</td>
<td>90%</td>
<td>91%</td>
<td>-1%</td>
</tr>
</tbody>
</table>

Source: WorldACD analysis of Eurostat data

March 2016
Main markets perishables-by-air to Japan

Source: WorldACD

March 2016
Modal shift in key perishables:
USA TO Japan

Key PER commodities ranked by 2015 air volume (tons)

- Apricots, cherries & peaches: $\Delta = +0.8\%$
- Strawberries & other berries: $\Delta = -0.5\%$
- Tomatoes: $\Delta = -1.8\%$
- Lettuce: $\Delta = +1.7\%$
- Fish (fresh): $\Delta = \text{no change}$

Source: WorldACD analysis of Japan customs data

March 2016
Modal shift in key perishables: Australia TO Japan

Key PER commodities ranked by 2015 air volume (tons)

Source: WorldACD analysis of Japan customs data
Modal shift in key perishables: Malaysia TO Japan

Key PER commodities ranked by 2015 air volume (tons)

Δ = +4.7%

Source: WorldACD analysis of Japan customs data
Water stress

Areas likely to experience water stress in 2050

Source: Center for Sustainability and the Global Environment
Climate change

Climate change vulnerability index 2016

Source: Maplecroft
Food outsourcing (outside country)

Future food demand may increase food sourcing outside Asia for Asian countries, given more competition for land use, increased demand and challenges with water.

Source: IFTF
Income growth and population growth are shifting the PER trade growth from developed to developing countries.

Supermarket chains will become bigger facilitating the year round supply of fresh produce, thus supporting international PER trade, also by air.

Many types of fresh fruit such as different berries and various vegetables are transported by sea already: even with volume growth, it may be a challenge for air cargo to maintain its current volumes.

Cut flowers and certain fish commodities remain the exceptions, for which air cargo is able to maintain a very high market share.

Given investments in the air cargo community, there are high hopes for cool chain products to support the bottom line.

Agriculture land sourcing by third countries for large countries like China, could further support growth of international PER trade.
Conclusions

- PER products by air showed much higher growth than the overall cargo market in 2015.

- Growth of PER demand will mostly be seen in developing countries, where regional supply is insufficient.

- New long distance PER trade will emerge.

- Growing middle classes in emerging countries will play a large role in future PER trade patterns, and therefore in the demand for PER by air.

- Modal shift is best analysed per individual market: different results for different markets are observed.
Further Information

SOURCES USED FOR THIS PRESENTATION:

Center for Sustainability & the Global Environment
Drewry
Eurostat
IFTF
IMF
Institute of Grocery Distribution
Japan Customs
Maplecroft
OECD
Platts / IATA
Technavio
The Nielsen Company
United Nations
US Department of Agriculture
Worldbank

&

WorldACD databases:

• More than 225 million AWB's
• Adding > 2 million AWB’s every month
• Monthly inputs of full worldwide AWB-data from over 60 airlines & flight data from over 30 airlines
• Data provided cover all sales via all distribution channels as well as direct sales

FOR FURTHER INFORMATION:

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March 2016  32
Perishables Track - Flying it fresh!

Averting the Modal Shift

Natasha Solano
Global Business Development Manager Perishables Logistics
Kuehne+Nagel
Modal Shift in Perishables

Reality versus Assumption

Natasha Solano, Global Business Development Manager Perishables Logistics
Berlin, March 16 2016
IATA World Cargo Symposium, March 2016 Berlin

Agenda

- Kuehne+Nagel Perishables Airfreight BU
- Perishables Transport Development First Decade 21st Century
- Modal Shift Triggers and Underlying Development
- Perishables Airfreight Industry Circle of Influence
Agenda

Kuehne+Nagel Perishables Airfreight BU
Perishables Transport Development First Decade 21st Century
Modal Shift Triggers and Underlying Development
Perishables Airfreight Industry Circle of Influence
OUR REEFER AND PERISHABLES LOGISTICS NETWORK SPANS THE WORLD’S KEY MARKETS
Global and K+N Perishables airfreight development 2010-2014

IATA World Cargo Symposium, March 2016 Berlin
Agenda

Kuehne+Nagel Perishables Airfreight BU
Perishables Transport Development First Decade 21st Century
Modal Shift Triggers and Underlying Development
Perishables Airfreight Industry Circle of Influence
Perishables flows to Europe 2014 vs. 2004
Perishables flows to Middle East & Central Asia – 2014 vs. 2004
Perishables flows North & South East Asia – 2014 vs. 2004

- 143,674/93,030
- 189,502/49,369
- 73,214/13,692
- 42,306/17,687
- 11,373/5,833
- 102,037/98,224
Worldwide trade in perishable reefer cargoes – 2002-2017 (in mio ton) – by all transport modes

Source: Drewry
Worldwide seaborne perishable reefer cargoes – 2002-2017 (in mio ton)

Source: Drewry
Share ocean transport in total traded tonnage of perishable cargo

- Flowers: >5%
- Ornamentals: 95%
- Dairy: 28%
- Meat/Poultry: 63%
- Fish: 68%
- Fruit:
  - Banana: 99%
  - Exotics: 80%
  - Citrus: 57%
  - Deciduous: 43%

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Example transport fruit
Modal split fruit import Belgium, Netherlands, Germany, UK and France in 2013 (source Eurostat)
Example transport flowers – development containerized flower flows 2013

Source: Flora Holland
Agenda

Kuehne+Nagel Perishables Airfreight BU

Perishables Transport Development First Decade 21st Century

Modal Shift Triggers and Underlying Development

Perishables Airfreight Industry Circle of Influence
Main Modal Shift Triggers

- Cost reduction needs
- Environmental concerns
- Advanced reefer container technology

Modal Shift

- Development of new varieties and improved post-harvest
- Constant and uninterrupted cold chain
- Increased deployment of container vessels (versus conventional)

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Underlying development past decades and into the future

<table>
<thead>
<tr>
<th>Transport/equipment related</th>
<th>Product related</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faster vessels/ongoing containerization</td>
<td>Improved post harvest procedures ensuring the product enters the transport chain in perfect condition and correct temperature</td>
</tr>
<tr>
<td>Modified atmosphere packaging ensuring shelf life is unaffected</td>
<td>R&amp;D of new varieties with longer shelf life</td>
</tr>
<tr>
<td>Advanced controlled atmosphere reefer containers</td>
<td>Advanced ripening techniques and facilities at destination to handle climacteric fruit</td>
</tr>
<tr>
<td>Development of real time temperature/humidity monitoring systems</td>
<td></td>
</tr>
<tr>
<td>Improved infrastructure e.g. better road infra to ports or to the hinterland</td>
<td></td>
</tr>
</tbody>
</table>

IATA World Cargo Symposium, March 2016, Berlin
Development refrigerated transport of goods by sea

Source: Adapted from Drewry Shipping Consultants.
## Advanced Technologies

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<table>
<thead>
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</thead>
<tbody>
<tr>
<td><strong>1</strong></td>
<td><strong>CA Reefers</strong></td>
<td><strong>2</strong></td>
<td><strong>MAP</strong></td>
</tr>
<tr>
<td>Controlled atmosphere reefers – suitable for products with high respiration rate (fast ripening). Seamless control of oxygen and carbon dioxide mix within the container in order to prolong the product shelf life.</td>
<td>Modified Atmosphere product packaging – to slow down the process of spoilage by replacing the air in the packaging by a mixture of natural gases suitable for the specific product.</td>
<td>R&amp;D – new and stronger varieties with longer shelf life both in the fruit/vegs segment as well as in the flower segment. Most recent development in the field of highly perishable goods: raspberry.</td>
<td>Ripening chambers in destination markets enable achieving the required quality of fruit in a very short time span.</td>
</tr>
</tbody>
</table>

IATA World Cargo Symposium, March 2016 Berlin
Underlying developments past decades and into the future

<table>
<thead>
<tr>
<th>Market related</th>
<th>Environment/food safety related</th>
</tr>
</thead>
<tbody>
<tr>
<td>扩张生产区域 <strong>→</strong> 增加竞争和更多利润压力 → 增加运输成本役</td>
<td>压力食品安全规则和法规 <strong>→</strong> 增加对无缝冷链的兴趣</td>
</tr>
<tr>
<td>零售商越来越占据主导地位 <strong>→</strong> 增加利润压力 → 增加成本役</td>
<td>增长的碳足迹重要性 — 一般印象往往误导</td>
</tr>
<tr>
<td>FTA’s <strong>→</strong> 增加全球食品移动量 <strong>e.g.</strong> 中国允许越来越多的食品产品进入其领土</td>
<td>食品浪费在全球日程上 <strong>→</strong> 压力对无缝食品供应链管理</td>
</tr>
</tbody>
</table>

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Modal shift initiatives - examples

→ Green Rail – transport of plants to Milano and Poland by rail

→ Future: New Silk Way – cargo train Rotterdam – Chongqing

→ Fresh Corridor – barge transport fruit & vegetables from the port of Rotterdam to the fruit hubs

→ GreenChange – modal shift air and road to ocean and rail, project funded by the Dutch Ministry of Economic Affairs. Objective: 40% import of flowers and 20% of the export flows operates through sustainable logistics
Reverse or temporary modal shift in favor of airfreight occurs frequently as a result of:

→ Congestion in ports – example: situation USA West coast ports and the meat transportation in 2015

→ Animal disease outbreaks causing sudden shortage of a product

→ Unfavorable climatic conditions impacting production and forcing a change of sourcing region and transport mode
Kuehne+Nagel Perishables Airfreight BU
Perishables Transport Development First Decade 21st Century
Modal Shift Triggers and Underlying Development
Perishables Airfreight Industry Circle of Influence
Customer need and perception:

The customer needs a seamless cold chain. Customer perception: Reefer ocean transport enables a seamless cold chain with minimum exposure to high temperature and temperature fluctuations, based on a favorable price/quality ratio.

How can the airfreight industry satisfy this need and create a stable temperature environment and optimum handling conditions where the customer obtains value for his money?
What lies in the circle of influence?

- Product knowledge
- Education
- Infrastructure
- Packaging
- Communication
- Cooperation between all relevant players in the supply chain
Product Knowledge and Awareness

- Temperature
  The factor that matters most!!
- Humidity
- Mechanical shock
- Ethylene

The factor that matters most!!
## Important factors which may impact the cold chain

<table>
<thead>
<tr>
<th></th>
<th>Temperature</th>
<th>Humidity</th>
<th>Ethylene</th>
<th>Mechanical shock</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Too high leads to decay and senescence of the living plant and shorter shelf life</td>
<td>Can cause fast growth of pathogens and fungus or bothrytis</td>
<td>Produced by respiration of certain fruits as well as car exhaust gases and causing fast ripening or senescence of the plant</td>
<td>Causes bruises and damage to the plant tissue which facilitates growth of bothrytys</td>
</tr>
<tr>
<td></td>
<td>Too low leads to chilling injury and change in appearance and/or taste</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Infrastructure and Packaging

Infrastructure
- Cold storage
- Reefer transportation in the airport area
- Pre-cooling equipment
- Temperature monitoring equipment

Packaging
- Suitable passive temperature control packaging
- Quality of the carton boxes
Education and Communication

Education
- Blue collar workforce
- Customer service teams
- In the field of product and handling

Communication
- With the customer to ensure the product enters the cold chain in perfect condition and required temperature
- With all partners/subcontractors in the cold chain in order to ensure the product requirements are being met
Cooperation between all relevant players in the fresh food and non-food supply chain in order to:

- Standardize processes
- Minimize leadtime in the handling links
- Create “out of own comfort zone thinking” and connect the links
- Develop new/improved concepts and solutions

Conclusion: The industry’s circle of influence houses multiple opportunities to improve the cold chain and thus limit the...
Thank you.
Networking Break

Thank you to our Sponsor
Perishables Track - Flying it fresh!

The Benefits of Vertical Collaboration

Frank Van Gelder
Business Manager
Adelantex NV
The Benefits of Vertical Collaboration

The Perishables Track: Wednesday 16th of March, 2016

F. Van Gelder, Consultant
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Supply chain optimization
Agenda

- **Introduction:** market trends & behavior
- Current Airfreight model in (perishable) cargo
- What is expected by the industry
- What is needed
- Solutions
The quality of the produce is determined by the weakest links in the supply chain.

30% direct logistical impact
70% awareness impact

- **Loss at production**
- **Loss after production**
- **Loss distribution**
- **Loss consumer**

### Markets & Trends: Waste in food industry

#### 1. Production Losses
- **Grain Products**: 2%
- **Seafood**: 1.1%
- **Fruits & Vegetables**: 20%
- **Meat**: 3%
- **Milk**: 3%

#### 2. Postharvest, Handling and Storage Losses
- **Grain Products**: 2%
- **Seafood**: 5%
- **Fruits & Vegetables**: 3%
- **Meat**: 2%
- **Milk**: 25%

#### 3. Processing and Packaging Losses
- **Grain Products**: 10%
- **Seafood**: 5%
- **Fruits & Vegetables**: 2%
- **Meat**: 4%
- **Milk**: 5%

#### 4. Distribution and Retail Losses
- **Grain Products**: 2%
- **Seafood**: 9.5%
- **Fruits & Vegetables**: 3.5%
- **Meat**: 4%
- **Milk**: 25%

#### 5. Consumer Losses**
- **Grain Products**: 17%
- **Seafood**: 33%
- **Fruits & Vegetables**: 23%
- **Meat**: 12%
- **Milk**: 17%

*Includes out of home consumption

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F. Van Gelder - Perishables Track: Flying it Fresh
Markets & trends: Health problems versus fresh food consumption

Global obesity problem: push to healthy food as impact on health care budget is dramatic: increased fresh food consumption next 5 years
Agenda

- Introduction: market trends & behavior
- **Current Airfreight model in (perishable) cargo**
- What is expected by the industry
- What is needed
- Solutions
Current Airfreight Model: 
lets stay on the surface

- Multi stakeholder model
  - no shared communication
  - information individualized
  - PUSH information model
  - Liability?

- Risks
  - passive attitude versus pro-active attitude
  - no standards & standardization: High waste / Low output / High human error
    - expensive solutions to avoid human error
    - complex logistics

- Image “damage” of airfreight perishable solutions to industry
A case study: Frozen Lobster Shipment

Where did it go wrong?

- no pro-active communication flows
- no shared data
- no active checks
- no vertical integration process
- lack of professional root cause analysis

Box frozen lobster (-25°C)

Box frozen lobster (-8°C)

Proof temp check at departure was okay

requests official claim

Box frozen lobster (-25°C)

No information available prior to arrival

AWB information contains 2 different informations:

- IR temp check -8°C

STOP shipment by Food Safety Authority -8°C

Proof temp check at departure was okay

requests official claim

Where did it go wrong?

- no pro-active communication flows
- no shared data
- no active checks
- no vertical integration process
- lack of professional root cause analysis

who is going to refund $210000
Chaotic communication flows
trying it fresh

Shipper  FFW  Handler  Airline  Handler  FFW  Importer  Retail

Ostrich Airlines

Trying it fresh
Agenda

- Introduction: market trends & customer behavior
- Current Airfreight model in (perishable) cargo
- What is expected by the industry
- What is needed
- Solutions
Food Industry’s Vision: Integrated logistics determining the end products quality and shelf life

- Power shift to Global Retail Industry & digital economy
  - Retail goes to shared data of different subcontractors and vendors
  - E-commerce: FMCG On-demand availability (JIT)

- Risk management through data availability
  - “pro-active” shelf-life management
  - health related data

- Customer Awareness (marketing) through “fresh” data
  - Waste reduction
  - Health
  - Year around availability
An example out of Retail

- Delhaize Belgium launches GDSN GS1*
  - Global Data Synchronisation Network
  - Multi data exchange platform of all vendors
    - Product related data
    - Service related data
  - Quality data immediately available
  - Organized control of product flows
Challenges to meet the needs

- Higher quality standards requested by food industry
- Reliable services
- Increased phyto sanitary controls and regulations
- Quality increase for a commodity that is strongly driven by price as logistics represent a substantial % in the market price/kg
- A season driven commodity asking supply chain flexibility
Agenda

- Introduction: market trends & customer behavior
- Current Airfreight model in (perishable) cargo
- What is expected by the industry
- **What is needed**
- Solutions
Change our vision, change our mentality: let us move away from empty marketing slogans

“You can’t just ask customers what they want and then try to give that to them. By the time you get it built, they’ll want something new”

Steve Jobs 1989
Change our vision, change our mentality: speak the language of the consumer

- **Standardization** (in processes)
  - Chrystal Clear Communication
  - SOP based Handling procedures

- **Economically sustained supply chain**
  - Stakeholder / vendor -> partnership
  - Improvement of transparency
  - Objective information through data input, sharing & analysis
  - Regain through process optimization: lower investment needed in
    - controlling the chain through manpower
    - avoiding claims
    - pro-active shelf-life management through integrated logistics data
Visible communication & pro-active actions

CENTRALIZED INFORMATION, MONITORING & COMMUNICATION, BUILDING UP QUALITY DATA (IF NEEDED LINKED TO TEMP/GEO DEVICE)

Shipper | FFW | Handler | Airline | Handler | FFW | Importer | Retail

Consumer
Systems that could work

- Work in a “forecasting” vision as a logistics provider to FOOD INDUSTRY
  - Value chain management through
    - Data (internal & external) sharing
    - Increased performance
    - System reports & sharing
    - People skills
    - Organizational changes

- Usability = simple
  - Easy access device and data sharing

- Smart logistics
  - Pull information: @ every HOP
System “added value” summary

- Multi-flexible system
  - environment independent
- Software as a Service (SaaS)
  - no hardware to be additionally installed
- Content of quality checks is 100% manageable by the customer through UI
- Powerful data source
How should it be used?
How does it work?
Case reviewed frozen lobsters

Stakeholder communication and data sharing:

SUPPLY CHAIN CCP IDENTIFICATION

SOP DATA PULL REAL TIME

Shipper  FFW  Handler  Airline  Handler  FFW  Importer  Retail
Summary

- Perishable logistics are going through a dramatical change
  - Availability-Quality-Cost are balanced
  - Engaging the consumer
  - Centralized quality data

- Logistical partners need to leave “individuality” and get vertically integrated inside the logistical process through innovation and forecasting vision
  - Standardized procedures
    - Down chain communications
    - Clear lines of accountability
    - Transparency & shared data
  - Integration in product’s “condition” not just “time”
  - Meet Industry’s Standards of expertise
    - Best Practice methodology
Perishables Track - Flying it fresh!

Shipper’s expectations meet the Air Cargo Value Proposition

Robert Perucho Coma
Head of Sales Department
Fruits de Ponent

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Policy Manager Air Freight
European Shippers Council

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Director Global Logistics Services
Cargolux Airlines

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Lufthansa Cargo

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Global Business Development Manager Perishables Logistics
Kuehne+Nagel

10th World Cargo Symposium
15-17 March 2016 – Berlin, Germany
ABOUT US

- **Trading Cooperative** founded in 1992 by 4 production cooperatives
- 220 family units
- **Cultivated hectares**: 2.546 ha.
- Production: **65 million Kilo / year**
- 75% stone fruit; 25% seed fruit
- **Employees**: 150 permanent & 1.000 during summer season
- Turnover: **70 million € / year**
- **% Exportation**: 75%
European Shippers’ Council

• Represents the logistic interests of manufacturers, retailers and wholesalers, collectively referred to as shippers on a European Level

• ESC members:
  – National shippers association, European Trade Federation and International Groups

• ESC + Asian Shippers’ Association (ASA) + American Association of Exporters and Importers (AAEI) = Global Shippers Alliance

• Lobby for the interests of Shipper by anticipating and participating in various platforms with Lawmakers, Governmental bodies, Knowledge Partners and Industry Stakeholders.
Air Transport

• E-Freight
• KPI
• EC Aviation Package
• CORE Project
Perishables Track - Flying it fresh!

Closing Remarks

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10th World Cargo Symposium
15-17 March 2016 – Berlin, Germany
Networking Lunch

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