



CHILL-ON

Opale Seafood

**New technologies to
increase fresh food value**

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Agenda

- What Opale Seafood does
- What will increase price of seafood products
- What will push industry implementation for new technologies
- How its organized today, weak points
- New technologies that support food security, increase competitiveness of manufactures/sales organisations
- Solutions, cost-benefits
- Market introduction / requirements
- What will push industry implementation
- Next steps, timeframe

30 min

- **What Opale Seafood does**

- Manufacture high quality smoked salmon for Retail and Food Service sectors
- Manufacturer different chilled smoked herring products for retail.
- Manufacture fresh cod and haddock loins
- Raw material procurement from Norway, salmon - herring
- Raw material from procurement from Iceland, cod - herring
- Sell products under its own brands
- Processing site on France and Iceland



- **What will increase the value of seafood products**

- Increased proportion of total catch and/or harvest proposed to the fresh seafood sectors. Reduce quantities in frozen and salted conservation state, where consumers perception and values are lower.
- Delivering seafood as fresh as possible to the market by reinforcing all transformation and processing procedures and logistic definitions.
- Adapting products to “healty dishes” and make more consumer friendly, like securing skin-less and boneless products.
- Traceability vision, **Defining a common traceablity platform**, example via internet, to enhance security, transparency and confidence.
- Sustainability, A growing trend amongst clients is to offer to its clients ‘renewability’

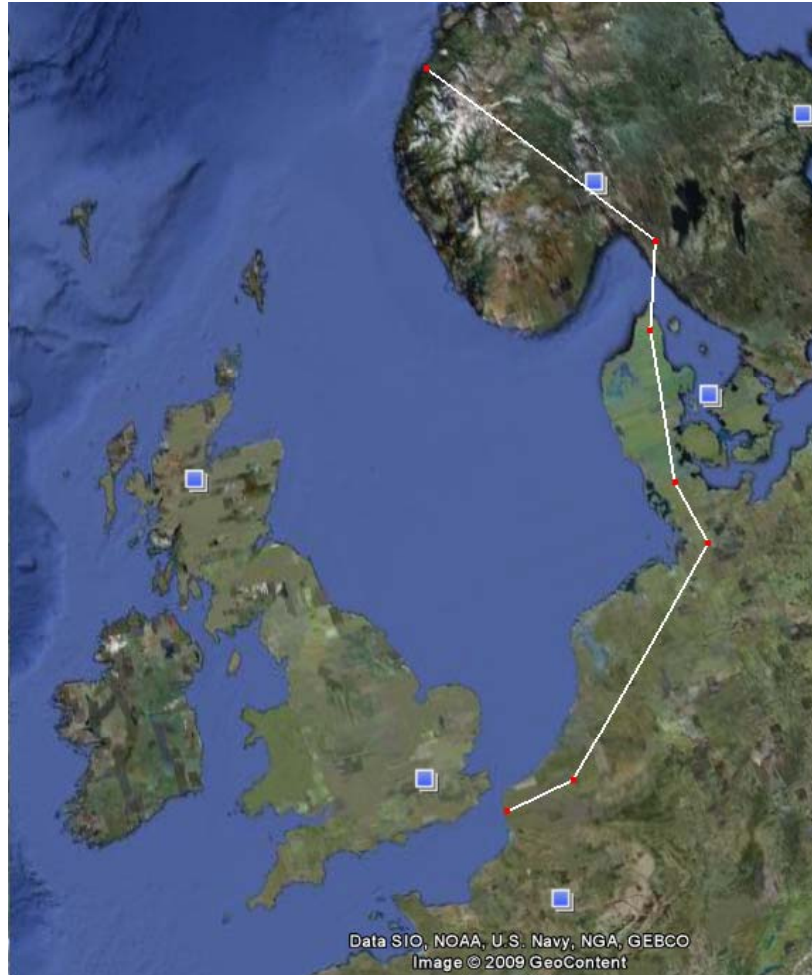
- **What will increase price of seafood products**
 - Origin, some clients are looking for ways to differentiate themselves from the competition by, for example, offering to their customers specific origin for its products with attached values
 - Pollution, latest trend amongst clients is how to attach the quantity of Carbon Dioxins and give affluent customers the possibility to make a chose based on that.
 - Contamination, growing worries amongst customers are for example the heavy metal issues, and elements that the human body can not eject by itself.
 - Reputation, lowering recall costs and needs for recall procedures reduced. Builds up external value, diminishes the probability of a damage to reputation. Internally less amounts in rejected and discarded lots.

- **What will push industry implementation**
 - Regulations from government.
 - Operational savings and improved efficiency, like
 - Lower risk,
 - More precise shelf life predictions and subsequent decisions
 - Improved control and management
 - Reduced cost of quality
 - Decreased raw material bill
 - Requirements from clients. Especially the high end market and large distribution chains
 - Higher price for products
 - Marketing tool that will help to enhance further differentiation and segmentation. Improve offers to consumers.

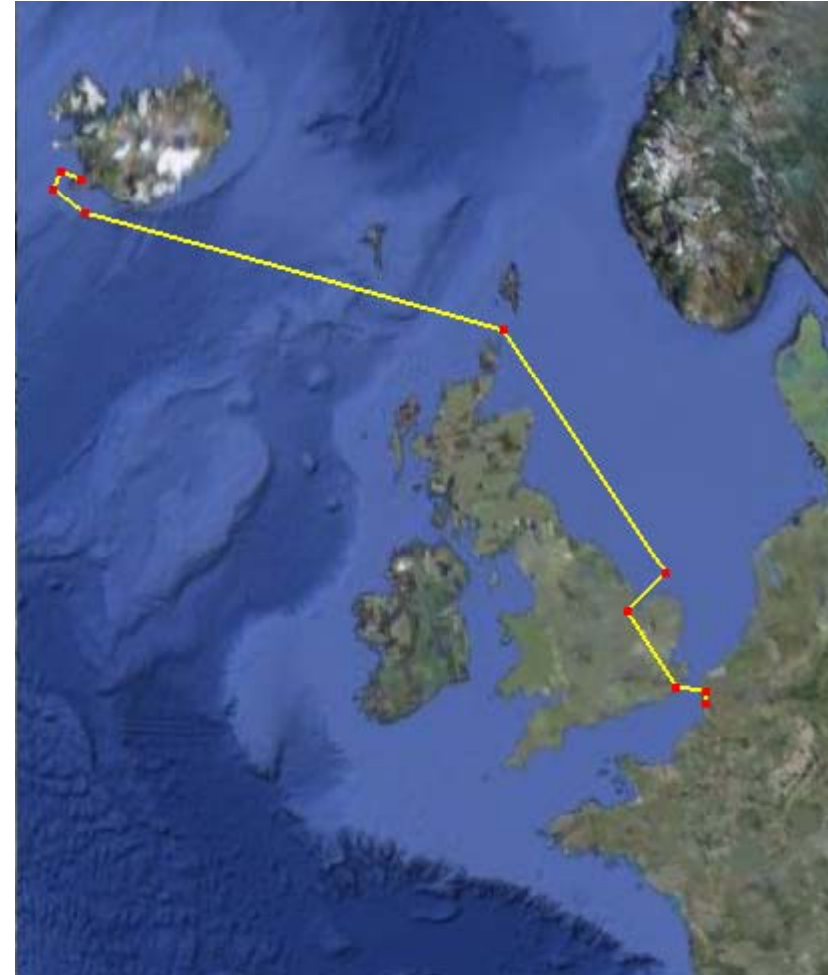
- **How its organized today, weak points**
 - Opale has two main supply chains for raw material:
 1. From different locations in Norway to Boulogne S/Mer in France
 2. From different locations in Iceland to Boulogne S/Mer.
 - Multitude of distribution routes of finished products
 1. From Boulogne S/Mer to all over France and Italy
 2. From Boulogne S/Mer to Iceland

Increase fresh food value

1. Norway-France



2. Iceland-France



More than 10 weak cooling points in each cooling chain!



- **New technologies that support food security**
 - Temperature sensors that can remotely convey product temperature. Store temperature when off-line and convey all data when reconnected. Very easy implementation, 1-2 T-sensors per shipment in a plastic bag with the product.
 - Communication unit that gather information from remote T-sensor and conveys the info through the cellular network along with shipment location through GPS. Implementation a bit more tricky with endless number of container already in use. Fixed installation on chosen locations easier to begin with.

- **New technologies that support food security**
 - Supply chain management, traceability in one system with powerful statistical analysis on repeated shipments.
 - Tracechill server collecting real time temperature and location data, issuing warnings for high temperature and giving unparalleled details of shipment and product status. When implemented a revolution in logistic.
 - With theses tools eventual problems are know when they occur giving manufactures like Opale the possibility to react and manage a situation well in advance to ensure quality and contract obligations.

- **New technologies that support food security**
 - Additional tool is the QMRA model which can, when fully developed and tested, predict spoilage and pathogenic bacteria's taking into account the transport temperature of the raw material. Shelf life can then be evaluated with much more accuracy giving more time for sales. Simple utilisation, the model is fed with real time temperature data and results are sent from the Tracechill server.
 - Time/temperature indicators. A simple sticker on the product which reveals the status from packing to consumer. A brilliant idea that may be difficult to implement unless required by regulations.

- **Solutions**

- Incremental implementation when new technology becomes commercial:
 - 1. T-sensors, fixed communication units and Trace-chill server
 - 2. QMRA model implementation, flexible shelf life date and better risk management.
 - 3. Time/temperature indicators when accepted/required by distributors and clients

- **Benefits**

- Raw material logistic including quality and schedule greatly improved
- Lot of uncertainty and risk factors eliminated
- Clear competitive advances, that could bring around new standards
- Marketing tool that could lead to better match between offers and consumers needs and preferences
- Enhanced revenue management. (higher prices – lower costs)
- Increased level of operational security by cutting out uncertainty
- Various direct cost-benefits, such as lower cost of quality systems and need for recall procedures
- Improved level of ‘Peace of mind’ and serenity for operators

- **Costs**

- Material and installation cost of new equipment and software. All of the modules are still in development phase and have no price tag
- Implementation and training on many locations
- Should not, and may not increase production cost at least not more than it will save
- T-sensors have to be shipped back
- Technical competence needed to ensure proper operation of the system

Next steps

- Manufactures form a group to share implementation cost
- Official plan with timeline when new methods should be implemented (in years)
- Propose small and cheap improvement packages in cooperation with manufactures and clients. Many steps, similar to Microsoft (also in years)
- Inform and educate industry partners to open doors.
- New technologies and equipment have to be ready for a trouble free use
- Listen to the manufactures, what are they thinking e.g. simple - clever procedures and interfaces

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