Overview

- The global leader in live fish logistics for the aquaculture industry
- State of the art fleet consisting of 17 vessels, with 5 additional vessels in the pipeline
- International operations in all key salmon farming markets. Europe, Tasmania, Canada and Chile
- Headquartered in Ålesund (Norway) and has approximately 300 employees
- Sølvtrans AS owns 48% of the Chilean company Sølvtrans Chile SA (Presented by general manager Victor Vargas later)

Geographic footprint

- Founded in 1986
- ~300 FTE's
“Sølv Trans” was established and the first vessel was a rebuilt freighter named “Sølv Trans”.

1986

1996
First new vessel Ronja Fisk, which was the company’s first purpose built vessel for live fish handling

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1998-2005
Main portion of operations were moved to Scotland in 1998, several wellboats added to the fleet during 2001-2003

2007
Re-enters the Norwegian market through the acquisition of Frøyfisk

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2010
Sølvtrans Holding AS listed on Oslo Axess through an IPO on 13 March 2010, enters the Canadian market

2014
Oaktree Capital Management purchases majority of shares in July 2014 and Sølvtrans is de-listed from Oslo Axess. Enters the Australian market.

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2017
Newbuilds Oystrand (3600m³) and Ronja Ocean (3200m³) and Ronja Diamond (3200m³) delivered respectively January, March and September.

2015
Acquires Bømlo Brønnbåtservice to become the globally leading wellboat operator

2016
2 New long term charter contracts in UK for our newbuilds Ronja Challenger and Ronja Supporter. The company is celebrating 30 – years.

2017
Newbuilds Oystrand (3600m³) and Ronja Ocean (3200m³) and Ronja Diamond (3200m³) delivered respectively January, March and September.

2018
Going forward 4 newbuilds to be delivered in 2019, among them the world's largest nominated for «Ship of the year 2019». Recently contracted a new build for 2020 and a new build for 2021.

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LIVE FISH LOGISTIC CHAIN

Broodstock / genetics

- Eggs
- Growth phase onshore (smolt)
  - 0-250g

10 – 16 months

Transfer to sea

- Growth phase at sea
  - 250g – 5kg

14 – 24 months

Harvest

- ~4-5kg

Primary / secondary processing

Live fish logistics & handling is a core part of the salmon farming value chain

Typical distance: 5 - 100km
Closed system

- Developed as a consequence of Scottish ISA in -98
- Reduces risks for disease spreading
- Gives a less responsive and stressed fish due to cooling with 1,5° per hour

Delousing with H2O2

- Method for environmentally friendly delousing developed in -09 together with MH
- Reduces the need of lice-medicine in the feed

AGD freshwater treatment

- Sølvtrans developed in 2014 a new cost-effective system for freshwater treatment against AGD
- The treatment water can be cleaned and reused a multiple number of times

Going forward

- Continuous development of the wellboat technology based on:
  - Operational improvements
  - Regulatory changes and customer demands
  - Improvements in fish welfare
  - Bio-security issues (PD / ILA)
FIRST WELLBOAT - 1986
FIRST PURPOSE BUILT VESSELS

Ronja Fisk - 1996

Ronja Christopher - 1997
Existing wellboats were identified as a large biosecurity risk. The existing wellboats were moved out of Scotland while the fish farming industry recovered.

- Closed valve transport when within 5 km of any fin fish farm site.
- Cleaning and disinfection procedures for wellboats – standard defined
- Biosecurity focus

➢ New Technology evolved
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CLOSED VALVE SYSTEM – NEW TECHNOLOGY

South Shian harvest station after ISA – Scotland
Ronja Skye (2001) – Closed valve system pumping fish directly onshore. No harvest pens.

Ronja Settler - 2002

Ronja Commander - 2003
Is UV safe enough for live fish transport?

UV was equal to closed valve system before 2018...

There are a few uncertainties regards to the UV systems:

- UV dose in controlled area (Lab) versus wellboat?
  - Minimum 25 mWs/cm²
- Pre-filtration 150 - 300 micron?
- Maintenance and durability?
- Documentation?
NEW MODERN VESSELS
FLEET OVERVIEW

High focus on biosecurity and fish welfare

- Straight pipes for loading/unloading (Under – and overpressure)
- 20 inch loading/unloading pipes
- Water quality
  - Sensors to measure water quality parameters
  - CO2 airaiton
  - Oxygen production
- Sideways circulation
  - Low velocity of water gives less stress for the fish
  - Pressure channel is washed and disinfected every day
  - Less pipes than longitudinal circulation
- RSW – Refrigerated seawater
- Open/closed valves are logged to secure 100% closed transport
- Filter
- Fuel efficient propulsion systems
- Reuse of water – Environmentally friendly and effective
New building program

• The Ronja Storm – with Havyard:
  - When delivered in October 2019 she will be the world’s largest wellboat
  - Tank capacity will be 7,450m³, nearly double the size of a current wellboat and indicates the industry development towards larger vessels

• 3 wellboats 2,500 m³ - Aas Mek
  - June 2019, Q4 2019 and Q4 2020
  - Suitable for most of the areas where we operate and for all kind of jobs

• 1800 m³ - Aas Mek
  - To be delivered Q3 2019

• 4000 m³ - Myklebust
  - To be delivered Q1 2021
Thank you for your attention!
Seminar on fish health, 19th of August
Biosecurity and transportation of fish
Solvtrans Chile S.A. was established in 2005.
Today Solvtrans Chile operate 5 wellboats; 2 traditional - and 3 modern wellboats
Around 100 full time employees
We strongly believe that our service add value to our customer,
Our facilities for the crew is one of the best inside the wellboat industry in Chile
Ronia Austral (660 m³)

| Eslora | 40,00 m |
| Manga  | 10,00 m |
| Calado | 5,00 m  |
| Andar pomedio | 10 nudos |
| Año Construcción | 2003 |
| Volumen de carga | 2 x 330 m³ total 660 m³ |
| Capacidad Carga | Salmon: 90 tons - Trucha: 80 tons |
| Combustible | 50 m³ |
| Agua Dulce | 15 m³ |
| Thrusters | 2 x Brunnnvoll, 300kw. |
| Tipo de navegación | Abierto / Semi – Cerrado |
Ronia Pacific (660 m³)

Eslora 40,00 m
Manga 10,00 m
Calado 5,00 m
Andar pomedio 10 nudos
Año Construcción 2003
Volumen de carga 2 x 330 m³ total 660 m³
Capacidad Carga Salmon; 90 tons - Trucha: 80 tons
Combustible 50 m³
Agua Dulce 15 m³
Thrusters 2 x Brunnnvoll, 300kw.
Tipo de navegación Abierto / Semi – Cerrado
# Ronia Atlantic

<table>
<thead>
<tr>
<th>Característica</th>
<th>Valores</th>
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<tbody>
<tr>
<td>Eslora</td>
<td>68,00 m</td>
</tr>
<tr>
<td>Manga</td>
<td>14,00 m</td>
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<tr>
<td>Calado</td>
<td>6,30 m</td>
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<tr>
<td>Andar pomedio</td>
<td>11 nudos</td>
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<tr>
<td>Año Construcción</td>
<td>2009</td>
</tr>
<tr>
<td>Volumen de carga</td>
<td>2 x 570m³ + 1 x 800m³ total 1.950 m³</td>
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<tr>
<td>Capacidad Carga</td>
<td>Salmon: 300 tons - Trucha: 280 tons</td>
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<tr>
<td>Combustible</td>
<td>120 m³</td>
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<td>Agua Dulce</td>
<td>97 m³</td>
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<td>Thrusters</td>
<td>2 x Brunnnvoll, 300kw. + 500kw.</td>
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<td>Tipo de navegación</td>
<td>Abierto / Semi – Cerrado / Cerrado</td>
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**Ronia Pioneer**

<table>
<thead>
<tr>
<th>Eslora</th>
<th>51,00 m</th>
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<tbody>
<tr>
<td>Manga</td>
<td>12,00 m</td>
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<tr>
<td>Calado</td>
<td>5,00 m</td>
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<td>Andar pomedio</td>
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<td>Año Construcción</td>
<td>2006</td>
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<td>Volumen de carga</td>
<td>2 x 550m³ total 1.100 m³</td>
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<td>Capacidad Carga</td>
<td><strong>Salmon; 165 tons - Trucha: 138 tons</strong></td>
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<tr>
<td>Combustible</td>
<td>160 m³</td>
</tr>
<tr>
<td>Agua Dulce</td>
<td>50 m³</td>
</tr>
<tr>
<td>Thrusters</td>
<td>2 x Brunnvoll, 300kw</td>
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<td>Tipo de navegación</td>
<td>Abierto / Semi – Cerrado / Cerrado</td>
</tr>
<tr>
<td>Especialidades</td>
<td>Datos</td>
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<td>-----------------------------</td>
<td>--------------------------------------------</td>
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<tr>
<td>Eslora</td>
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<td>Manga</td>
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<tr>
<td>Calado</td>
<td>7,00 m</td>
</tr>
<tr>
<td>Andar pomedio</td>
<td>12 nudos</td>
</tr>
<tr>
<td>Año Construcción</td>
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<td>Volumen de carga</td>
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<td>Capacidad Carga</td>
<td>Salmon; 500 tons - Trucha: 400 tons</td>
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<td>Combustible</td>
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<td>Agua Dulce</td>
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<td>Thrusters</td>
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</table>
Salmon Map

- The wellboats sail mainly from north to south.
- The distance between Pto Montt and Pta. Arenas is ca. 1000 nautical miles.
- Round trip for sailing will take around 9 days with average speed of 10 knots.
- Average distance in region X is ca. 100 nautical mile.
- The distance from Pto Mott to Pto. Chacabuco in the XI is ca. 270 nautical miles, almost 3 days to do the round trip.
First transports - harvesting

- In the start the harvesting of the fishes was done on site. The fish was placed in boxes that was transported on barges to the processing factory.
- No technology was used.
- The biosecurity was not focus
- The regulations were not good and the farmes focused mainly on growing the fish.
The first wellboat appeared in the start of the year 2000.

- Start of live fish transports
- Simple technology, loading and unloading by Vacuum pumps
- Easy long way circulation with O2 injection trough.....
- Average capacity of 450m3, around 50 tons of live fish.
- Every ship owner and farmer decided standard of biosecurity regards to wash and disinfection.
- Biosecurity regulations were not good.
Converted Fishing vessels

- Rebuilt fishing vessels for live fish transport began around 2005.
- Bad results in terms of the final quality and biosecurity.
- High level of mortalities.
- Expensive operations.
- Complicated to maneuver.
- High impact on the environment.
- Restricted only to harvest.
- Technology was very simple, loading and unloading by Vacuum pumps.
- Inefficient O2 systems.
- Inefficient water circulation.
- Average capacity of 700m3.
- The regulation approved open transportation.
Wellboat after ISA Crisis

- Until 2012 the total wellboat fleet had an approx. capacity of 25,000m³.
- Today the capacity of the Chilean wellboat fleet is more than 50,000m³.
- Different types of vessels have been designed.
- Most of the fleet are still converted fishing vessels. Some of the wellboats were built in Chile, another in China and several imported from Norway.
- Improved regulations regarding biosecurity since 2012. The food authority forbid open transport with live fish.
- New regulation approved semi-open (UV) and closed system.
- New regulations require treating all the water in and out for smolt transportation and out for harvesting fish.
- The Chilean fleet uses UV treatment systems to treat the water.
- The minimum UV dose is 90 MJ/cm².
Smolt Transportation

- The smolt in Chile are transported mainly in another type of vessels, “Smolt Boat”.
- Some of the wellboats do smolt transportation.
- The smolt boat has an average capacity of 350m³.
- The smolt boats are equipped with several fiber glass tank on deck, with O₂ injection by O₂ bottles and monitoring system.
Challenges

- The industry will need more crew with wellboat expertise.
- Most of the wellboat can sail close just some hours.
- Sea Lice strategi – Sea lice need to be captured and not put back to the sea.
- Algae Blom.
- Most of the wellboat still unloading the fishes to the waiting cages, using air pressure that creates high level of stress.
- Moving Bulkhead is used just for some wellboats. This minimize stress.
- Just some wellboats can discharge directly to the killing station.
- Most of the wellboat fleet, 90%, is concentrated to transport only harvesting fish.
- Just some wellboat has the technical solution to do smolt transportation, sea lice and AGD treatment, grading, etc.
- Theres is a few wellboat treating ballast water, this is very important to protect the environment and reduce the risk of algae contamination.
Solvtrans Chile Goals

- To be a long term partner for the salmon farmers. Assist our customers not only with wellboat services.
- Handle the fish gentle
- Minimize environmental impact
- Continue develop new technologies to generate more value to our services.
- Crew training and education.
- Work together with the authorities to find better solution inside the wellboat industry.
- Participate with community in different social projects.
GRACIAS POR SU ATENCIÓN!!!

Yesterday....

Today....

Tomorrow....