# BUSINESS AND FEASIBILITY MODEL FOR INITIATING THE LOVIISA – KUNDA ROPAX SERVICE

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# Contents

# 1. Aim and content of the document

The aim of the document is to elaborate the issues affecting the feasibility of Loviisa-Kunda roro service based on the prior results in the REFEC project. The report leverages also the shipping company interviews conducted in the project.

The business and feasibility model is constructed on the basis of building blocks of business model canvas with some additional blocks like market and competitor analysis. Each building block is further evaluated trough a SWOT framework. Strengths and weaknesses can be seen directly as an internal qualities of the business model (or company) while opportunities and threats refer rather to the issues in external business environment. Furthermore, the business model is finally tested against different criteria selected from various sources[1]. Finally, a summary of the shipping company interviews is provided.

# 2. Business model elements

The business idea in short is to provide transport service with a ropax vessel between the port of Loviisa (FI) and Kunda (EE). The cargo would consist mainly of trucks driving between (eastern) Finland and the eastern half of Europe all way down to Turkey including naturally the Baltic states. In addition, the Estonian commuters with car would use the service for their travel to Finland and back to Estonia.

## 2.1 The market and customer segments

The main clients of the Loviisa-Kunda ferry service are the transport and forwarding companies transporting the products of Finnish export industry. The most important cargo owners are the Finnish forest industry enterprises. Furthermore, Finnish metal industry makes another important cargo owner. They have outsourced the transportations to the service providers which mainly operate with foreign truck fleet (Polish, Estonian etc.). Finnish trucking companies operate mainly in special cargoes like liquids. Other clients using the ferry service consist of those forwarding miscellaneous niche market cargoes like oversized cargo, hazardous cargo, waste, liquids and other chemicals. For hazardous cargo (under the IMDG Code) an open deck vessel is needed. As for import to Finland the emphasis is on general cargo where the consumer goods are an important segment. The consumer goods are distributed around the country via Helsinki area logistics centres. There is also direct import to eastern Finland but the volume is lesser compared to the export.

The Estonian export & import has mainly destinations & origins in Finland, on the contrary to Finnish trade which mainly transits Estonia. The export from eastern Estonia to Finland would be based on

[1] https://www.cleverism.com/how-to-assess-quality-of-business-model/

miscellaneous cargo types like food, mineral and wood products (like furniture and building components), metal products, machinery and building materials. The import from Finland to Estonia would be manufactured goods and chemicals. The consumer goods would be directed mainly to logistics centres in Tallinn area. All in all, the traffic would be driven by the Finnish market.

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| Strength<br>• strong client base in industry in eastern Finland | Weakness<br>• import volumes weaker than export (Finland) |
| Opportunity<br>• growing demand creates possibilities for a new alternative route and niche cargoes | Threat<br>• not achieving the sustainable client base & volume early on |

## 2.2 Value propositions

The core of the value proposition is the reliable ferry service with competitive prices. The important element is also functional ferry schedules providing shorter mileage and thus time savings within REFEC corridor. This translates into economically competitive alternative to transports starting/ending the REFEC area. Shorter haulage in land transport contributes also to smaller CO2 emissions compared to other routes.

The avoidance of congestion and less emissions in capital regions and consequently, decreased waiting time resulting decreased overall travel time are essential part of competitive advantage of the ferry line.

The benefits for commuter traffic are basically the same as for cargo traffic. The low budget alternative would be primary profile of the service.

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| Strength<br>• competitive new alternative in REFEC area | Weakness<br>• intense competition<br>• for commuters schedule may not be ideal since it is based on cargo interests |
| Opportunity<br>• possible future limitations for heavy traffic in city centres may push cargo to alternative routes | Threat<br>• are the benefits large enough for shippers to switch from current ferry routes |

## 2.3 Market and competitor analysis

The roro cargo market has grown in the period 2008-2017 from 210 000 to 387 000 roro units. The market leader is Tallink having currently about 2/3 of the transported cargo units. DFDS has about

10% share on its Hanko-Paldiski route. Viking Line and Eckerö Line are sharing the remaining 30% with about equal shares[2].

There are about 14-15 daily departures from both countries. Vuosaari-Muuga and Hanko-Paldiski are basically cargo driven routes although passengers with cars are taken onboard too. The Helsinki-Tallinn services are ropax services with emphasis on passenger (leisure time, commuters) traffic. Cargo, however, is also important in this route. In summary, the competition on Finnish-Estonian routes is intensive. Nevertheless, if the market grows like in the previous decade, or even with more modest pace, there will be inherently room for a new ferry connection.

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| Strength<br>• The market is expected to grow | Weakness<br>• competition is hard, challenging for new player to enter<br>• frequency compared to the capitals |
| Opportunity<br>• new connection in the market may increase demand for the service | Threat<br>• political risks affecting the volumes |

## 2.4 Channels

For a shipping company already operating Finland-Estonia ferries contacting the clients for the new connection should be easy especially for the cargo clients since shipping companies already have an extensive contact database. The commuters could be a more challenging target group. The public media should be used optimally to reach the target group. Furthermore, the client contact information from previous trips could be used for reaching the target group. The passengers with a probable commuter profile could be sorted out with little effort.

It goes without saying that a web-based access to ticket sales and other services should be organized in easily accessible and user-friendly way. Specific public media advertising campaigns (besides company web site) is less important since the cargo clients can be reached directly and commuter as regular travelers follow the market and compare different options. The media in both countries will anyway inform about the new service in the market. For commuters comparative cost and time calculations could be provided to help them realising the benefits of the new ferry route. This could work especially for a new shipping company entering to the market. For a new shipping company entering to the market the marketing effort needs to be more extensive compared to the currently operating companies.

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| Strength<br>• current players have the contacts to the potential client base | Weakness<br>• new entrants need to start from scratch to contact customers |

[2] Based on 2017 situation and recent developments. Major chance since 2017 is Eckerö Line starting with one mainly cargo vessel on Vuosaari-Muuga route.

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| Opportunity<br>• user-friendly online purchase system, possibly showing the cost benefit | Threat<br>• any problem in online services etc. while launching the service |

## 2.5 Customer relationships

The shipping company has two major target client groups: the roro cargo transportation companies and commuters. The major daily client interface is the web platform. Clients expect the booking of tickets in web to work fluently. That will make the basis of the satisfactory customer relationships. In all, self-service should be applied as much as possible since it is mostly considered positive by customers as generating less costs and therefore cheaper service. The major cargo clients naturally deserve special attention in the form or e.g. regular meetings. If the shipping company operates other routes in the Baltic Sea the customer relationship can be adapted to this model.

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| Strength<br>• The established companies can build on the existing relations | Weakness<br>• may prove to be difficult to stand out from already well-established ferry services |
| Opportunity<br>• targeted campaigns on niche markets esp. in pax segment (camper vans etc) | Threat<br>• commuter segment can be volatile, permanent clientele harder to consolidate |

## 2.6 Revenue streams

The foreseen ferry connection is based mainly on the transport demand from cargo clients. Therefore, the revenue base differs from the most commonly established business model in northern Baltic Sea ropax market where the onboard sales (services and commodities) make an essential share of income although there are also cargo driven ferry services3. As for the client segments the preliminary revenue streams could be roughly based on ticket sales by 2/3 from the cargo and 1/3 from the commuters. However, most probably the ferry connection would be used also by some other passenger segments like leisure time travelers, e.g. camper vans and other car passengers who want to avoid city areas or specifically visit the areas in REFEC corridor. Although the revenues would be based mainly on ticket sales some 20% of the revenues could be reserved for onboard sales in catering and shopping which is a very essential component in “regular” FI-EE ropax routes. The onboard sales would be mainly generated by commuter and other travelers’ consumption. The supply provided should be limited since the clients are not expecting wide selection nor willing to pay for luxury services in the utility travel type connection. This would also save in tied-up capital and staff costs, and probably results in better profit margin in this type of

[3] Between Finland and Estonia Hanko-Paldiski and Vuosaari-Muuga routes.

ferry service. The market targeted and the concept where the onboard sales play lesser role underlines the minimization of the costs in operation of the service.

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| Strength<br>• clear focus on core revenue sources providing possibility to control costs | Weakness<br>• dominance of ticket sales in overall revenue base |
| Opportunity<br>• development and testing of new-out-of the-box income sources | Threat<br>• minor role of onboard sales may turn out a double-edged sword |

## 2.7 Key resources

The key resources of the company are the vessel(s) and the crew. Shore staff is needed also although the transactions are mainly made on web-platform and highly automated. The vessel would be optimally an ice-class, second-hand vessel with 1200 -1600 lane meters of truck capacity. It should have an open deck for hazardous goods cargo. Cabins with showers for truck drivers and a catering service is needed. A limited store space for shopping is elementary to generate additional income to the shipping company.

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| Strength<br>• know-how on the operation of ropax transport | Weakness<br>• limited vessel market may affect the launching of service |
| Opportunity<br>• for crews the route is desirable place to work | Threat<br>• non-optimal vessel choice to match the demand |

## 2.8 Key activities

Key activity is providing transportation service in form of ropax ferry traffic between Loviisa and Kunda with 2 daily departures from both ports. There needs to be 1 (later 2) vessels with crew and shore staff (sales, management) to operate the service. Revenues are based on transportation fares and onboard sales.

Since the service is provided in very competitive market the shipping company should pay close attention to the price level to keep the vessel load factor reasonable. This naturally means continuous surveillance of costs, cost structure and pricing. Furthermore, monitoring the service level to keep and increase the client base is essential.

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| Strength<br>• straightforward functional concept | Weakness<br>• starting new activities requires learning of all stakeholders<br>• challenge to regenerate innovations |
| Opportunity<br>• prospects to scale up the business | Threat<br>• failure in quality (e.g. delays) is a big risk to the business |

## 2.9 Key partners

The port authorities in Loviisa and Kunda, and the port operators handling the transport units (trucks and trailers) are the key partners in daily operation of the ferry service. Furthermore, the suppliers and maintenance enterprises, which keep the vessel going are important. The fourth partner group consists of suppliers of catering resources (food, supplies etc.) and merchandise sold onboard. If the prospective shipping company is already in the market the existing channels to make procurements can be used to leverage the economy of scale. The authorities like boarder guard, police, customs, pilotage services and transport administration in general form a group of reference in running the business.

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| Strength<br>• committed partners with clear roles | Weakness<br>• inexperience of key partners in the starting period |
| Opportunity<br>• flexibility of relatively small organisations | Threat<br>• substandard service of some subcontractors |

## 2.10 Cost structure

The cost structure can be divided to direct vessel operation costs and other costs. Vessel costs have three main categories: capital costs, staff cost, insurance and bunker costs; the latter being the most important. The other costs are generated by different kind of fees like fairway dues, port and pilotage fees in the beginning of the service. In addition, the port operator costs and shore staff of the shipping company induce costs. These other cost make less than 1/10 of the total costs of running the service.

Since the cost structure depends very much on the vessel attributes, its capital expenses, fuel economy etc., it is not meaningful to try to provide a budget statement for running the ferry service between Loviisa and Kunda. Budget statement is rather a component in business plan, not business model. Furthermore, that is certainly in the competence of the shipping company who is interested

in operating the route. All in all, the market is very competitive and for the anticipated service mainly cost driven in nature.

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| Strength<br>• costs are mainly fixed i.e. calculable for planning | Weakness<br>• costs do not follow the demand of service |
| Opportunity<br>• negotiate rates wherever possible (dynamic pricing) | Threat<br>• unexpected cost hikes that cannot be transferred to clients |

# 3. The evaluation of business model against generic criteria

There is substantial academic literature on evaluation of business model. There are generic and industry specific, as well as qualitative and quantitative criteria. In this report some generic, qualitative criteria which supplements the above SWOT analysis, were selected to be elaborated briefly. To evaluate the model quantitatively would require more detailed data on the concept and the involved companies.

## 3.1 Uniqueness or novelty of the business model

The ropax traffic across the Gulf of Finland is well established service having a history of nearly 30 years. Therefore, the business concept in broad terms is not new. The novelty of Loviisa-Kunda service lies mainly on the location of the service and its target users: REFEC corridor cargo and Estonian commuters. The Hanko-Paldiski and Vuosaari-Muuga services are cargo driven and thus more like Loviisa – Kunda compared to Helsinki-Tallinn ropax service which is leisure travel driven. The focus on utility traveling is the main differentiating feature in Loviisa-Kunda service. As for imitability of the business model, it is improbable that another company would start an identical service in the same route. The competition comes from the other ferry routes.

## 3.2 Comprehensiveness or entirety of the scope

Business model is concise but it is covering the different dimensions of the business idea. The following step would be a move towards a more profound business plan with economic calculations and securing the sustainable client base.

## 3.3 Robustness & sustainability

The major issue is the sufficient demand for the service. There are some seasonal variations which are predictable. The utilization rate of vessel and operational margin need to be on sustainable basis on annual level. The key clients have a crucial role in this.

## 3.4 Lock-in/Switching costs

The shipping companies are having contracts with clients on varying periods which limits the change of the ferry service. This make entrants' position challenging in the market in the roll out phase of the service. Therefore, the commitments of some larger clients is a must. If the shipping company is already in the market the situation is easier, and the new service complements the service offering.

## 3.5 Efficiency

If efficiency is understood as transaction efficiency meaning that the more the volume of transactions, the less cost incurred by the company per transaction, it boils down to aiming to the maximum load factor in the ferry. The costs of running the service are about the same irrespective of the volume of cargo onboard. The target average load factor is rather an issue of business plan than business model. The calculations depend much of the vessel and other affecting details.

## 3.6 Scalability

Scalability is a stepwise process from starting service with one departure in both ports per day, the increasing to two departures per day. Increasing the number of departures per day requires an additional vessel. This is the main issue in scalability. The services onboard need to be basically adjusted for full load factor although e.g. catering may be somewhat scaled down to adapt to lower load factor.

# 4. The shipping company consultations/opinions on the prospective ferry connection

The REFEC project approached nine companies operating in roro market in the Baltic Sea. Only those companies[4] which operate on the Finnish-Estonian ferry market participated into consultations (and one not currently in roro business). This clearly implies that the market is considered very competitive and difficult to enter for a new company. Face-to-face consultations were conducted on autumn 2019 and lasted about 1,5-2 hours each.

## 4.1 What kind of process/elements the shipping company has in planning of a new ferry line?

The planning of a new shipping connection starts with mapping the demand. There needs to be the base cargo and base customers for the ferry service although it is difficult to get binding commitments from clients before the service is running.

The port fees are essential cost component. Therefore, the discounts from list prices are needed in the starting phase. The shipping company can calculate the capital involved in the supply chain for the tentative users of the service, as well as for alternative routes. Then the company decides the vessel type (roro, ropax) for the route. The next step would be the revenue and risk analysis (PEST), and finally cash flow statement. The starting of operating the new ferry service takes at last 6 months if the port facilities are ready for traffic. This timeline is for the case where the shipping company has an available vessel for the traffic. Finding an suitable vessel may increase the timeline.

## 4.2 Outlook to freight potential

The interviewees did not estimate the cargo volume for Loviisa-Kunda ferry route besides one exception. His estimation was about the half what was estimated in REFEC cargo potential report (20 00-40 000 units). Forest industry in export is considered sufficient but the problem is seen in limited import potential. Other articles in export might be chemicals. In import (forest) industry chemicals and IMDG are possibilities. The cargo would be based mainly on FTL (full truck load) market.

The shipping company clients do not tell the origin/destination of cargo. The emphasis of all volume is considered to locate in Helsinki-Tampere-Lahti triangle. The surveys on the issue are made but response rates have been decreasing. On the other hand, in Gulf of Finland traffic origin/destination info was not considered so important as in Scandinavian traffic where there are several routing options. In Gulf of Finland traffic options are Via Baltica or direct connection to continent to the continent.

[4] Tallink, Viking Line, Eckerö Line, DFDS. In addition Aalto Shipping, which is not in the operating in the area.

The main cargo type in roro is general cargo which covers various types of merchandise. Forest products is the other major goods type having its own port cargo charge.

The distance to Helsinki/Vantaa was mentioned as a challenge for Loviisa-Kunda route. It would be necessary to compensate this in the ticket price. Furthermore, the cargo potential is not necessarily directly dependent on hinterland distances and location of manufacturing/consumption. There are two factors that affect cargo routing a) availability, i.e. frequency of departures, which is drawing traffic to certain ports b) the contracts of transportation companies are based on monthly or yearly schemes which justify even longer driving distances to city ports since the company gets volume rebates.

Some trends were highlighted which affect the roro market in future

- Growth of volumes has been based on growth of LTL (less than truck load). This will continue.
- Some container volumes that were previously in trucks are now in roro (e.g. Turkey). The shift from calculating the plain transport costs to the capital involved in transport costs has generated the growth in LTL transports. This is important especially in products where the life cycle is short.
- Rail Baltica is expected to increase the GoF volume (starting around 2030). Part of the volume can be generated from rail connection to China and Central Europe (Poland) .
- In the future there might be also weight based charging on vessel, not only by lane meters as now.

## 4.3 The development of physical port area for roro traffic

The quick overviews of port master plan (Kunda provided as an example) generated positive comments on its comprehensiveness.

For quays planning, it is necessary to take into account different wind directions and preparedness for storms (breakwaters). The ramp arrangements depend on vessel. If the vessel has an option for two-level loading/unloading this makes operation faster and naturally needs a customized two-level ramp. Availability of sufficient tug service could be secured.

In general, the sufficient space (yard) to organize roro traffic was considered essential in the port area. This includes also parking areas where the drivers can sleep and have access to social amenities (rest room, showers). A semi-trailer area is needed and electricity for temperature controlled units. The availability of abundant space could be a good competitive advantage for the ports of Kunda and Loviisa.

Access from ports to main highways needs to be smooth and functional.

## 4.4 The vessel

Ropax vessel is the only feasible alternative since there will be car passengers in addition to trucks ( a conventional roro vessel can take maximum 119 passengers). The vessel needs to have an ice class 1A/1A Super. The market for them is limited. New vessel would be too expensive for this traffic. Retrofitting ice class is expensive alternative and not economically feasible for too old vessel. However, there will be ice class newbuildings entering to the market in the coming years. This means increased availability of second-hand vessels.

The vessel needs to have cabins with showers and catering for drivers. Open deck is essential for IMDG cargo. Electricity should be available for temperature-controlled trucks. The vessel design should be preferably drive-through type to ensure faster loading/unloading.

## 4.5 The role of administrative issues in establishing a ferry connection

The shipping companies did not see any remarkable administrative challenges in establishing a new ferry route. The issues related to administration were mainly the costs related to the operation of the service.

Vessel specific fairway due system is considered inappropriate since it limits switching of vessel in the route while the regular vessel is on dock for maintenance, or adding capacity e.g. in summer time.

Piloting is considered expensive and rigid. The minimum of 30 trips needed before the pilot exam can be taken and the master and mate need both the pilotage exemption certificate for the specific fairway. Furthermore, in Estonia the pilot exam needs to be taken in Estonian language.

In addition, the Finnish port traffic declaration service Portnet was considered outdated.

## 4.6 The role of congestion in centres of Helsinki and Tallinn in possible transfer of traffic to other routes

Politics, regulation and pricing can affect in rerouting the cargo flows. The pricing policy in Helsinki aims at transferring flows from city centre to Vuosaari. The problem is that Vuosaari currently has not much additional capacity for truck traffic to be rerouted from passenger ports.

In longer perspective, if the undersea tunnel is constructed one day, there is then no need to restrict heavy traffic in city centres.

## 4.7 Concluding remarks

In general, the interviewed shipping companies were having reservations of the possibilities of the Loviisa-Kunda ferry service, which was expected. An obvious business case had been already realized by some agile shipping company. However, the idea was not considered impossible. As one

interviewee put it “objectively, there can be small possibility to succeed. “If there is will, there is a possibility”.

**Annex. List of interviewees.**

| | | |
|---|---|---|
| **VIKING LINE** | **Freight director** | **Harri Tamminen** |
| **TALLINK SILJA LINE** | **Group head of cargo** | **Håkan Fagerström** |
| **ECKERÖ LINE** | **Freight director** | **Markku Onniselkä** |
| **DFDS** | **Route director** | **Peeter Ojasaar** |
| **AALTO SHIPPING** | **CEO** | **Tatu Laurila** |