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“Finland is an island” – a brief look into options for reducing Finland’s reliance on sea transportation

Introduction

The phrase featured in the title is a proverb often spoken by logistics operators in Finland. While the country is connected to the rest of Europe by land in east and north, the phrase rings true from practical standpoint. Geographical features, distribution of population and industrial activity, and geopolitical borders prevent convenient land transportation from Finland to our most important trading partners. This applies not only to cargo, but also to passenger traffic - the most common travel destinations are Sweden, Estonia and Spain – the first two of these are mostly served by boat or plane.

Most of Finnish trade (both import and export) is done within EU-28 (~62.6%), namely Sweden, Germany, Netherlands and UK. Besides EU-28, our most significant trading partners are Russia (11,4%) and China (7,4%). (Statistics Finland, Trade 2015) Of these, we only possess direct land routes to Russia and Sweden. To access central European markets via land, one would have to detour either through Russia and Baltics or through Sweden. Both of these options are considered rather inconvenient.

For example, an overland trip from Turku to Stockholm via Tornio would be almost 1800 km according to Google Maps. In comparison, a ferry from Turku to Stockholm would be around 10 to 11 hours or 300 km. Overland trip from Helsinki to Tallinn would be roughly 750-800 km when routing through St. Petersburg, while ferry from Helsinki to Tallinn would take approximately 2-2½ hours or 80 km. Crossing EU borders to Russia would also likely cause additional complexities and expenses. As such, it comes as no surprise that most of the traffic is handled by boat and ferries.

Why is this considered an issue? The problem has both economic and political dimensions. Finland gains 40% of its GDP from foreign exports (Foreign Trade 2015, Confederation of Finnish Industries). According to a 2013 report of Finnish Transport Agency, 88.5% of all exports and 82% of all imports crossed borders by sea. Furthermore, per Finnish Statistics Centre, most of all passenger traffic leaving Finland heads to either Sweden or Estonia.

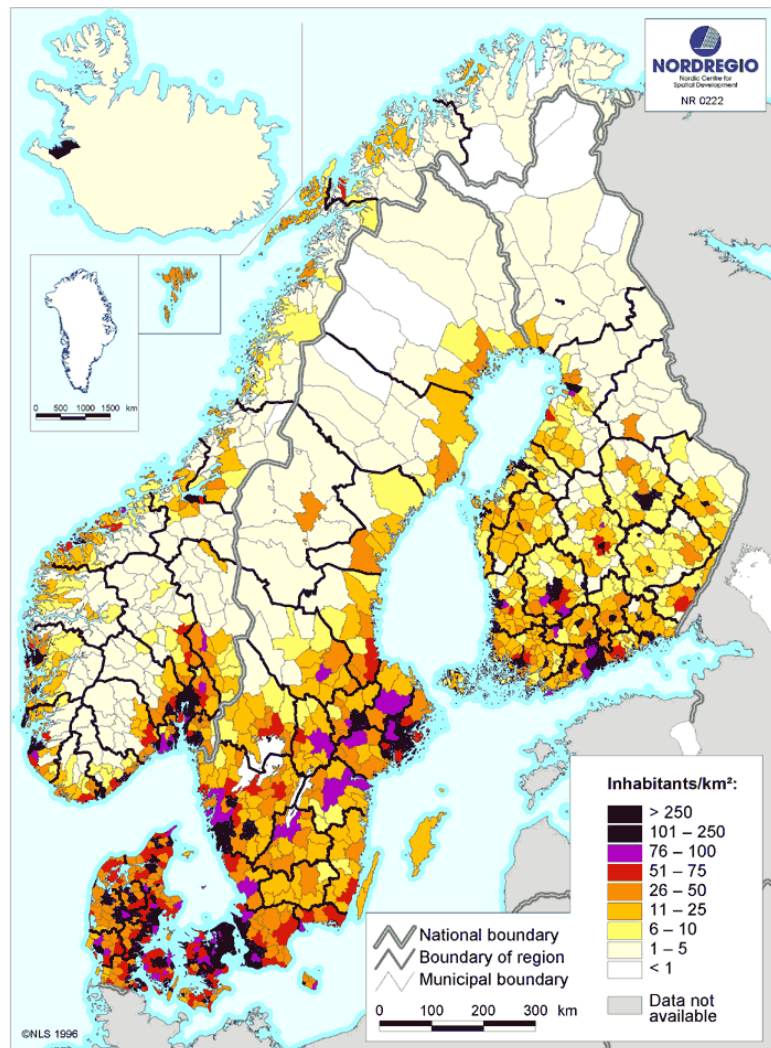


Picture 1: Northern Europe and the Baltics (from Google Maps)

Politically the economic importance of harbours grants a position of power to local shipping companies and dockworker unions. Strikes, should they happen like in 2014, can cause significant economic damage as almost all cargo traffic grinds to a halt (unless companies are willing to detour by land or fly). In prolonged situations, lockdown of harbours may cause a shortage of goods available in the markets. As Finnish harbours are often used to transport goods to or from Russia, re-routed traffic would cause further economic loss.

The implementation of sulphur oxide ruling by EU in 2015 cast a shadow on cargo transportation in the Baltic Sea, as it was accused of potentially raising shipping costs by as much as 30-40% (Hilmola 2012). In hindsight the cause for fear was unfounded, as low oil prices offset any extra costs. However, the potential future price hikes in marine ship fuel still incentivize investigation of alternative shipping methods. (Maaseudun tulevaisuus 23.6.2016, "Pelätty rikkidirektiivi vähensi ilmansaasteita, teollisuudelle ei käynyt kuinkaan")

As a note of Finnish and Swedish demographics, most of the population and industrial activity is clumped towards the southern parts. Please see the picture 2 above for demonstration. According to Wikipedia, Finnish Lapland has less than 200 000 inhabitants and Swedish Lapland less than 100 000 (with respective total populations being around 5.6 million for Finland and 9.6 million for Sweden). As such, the land bridge is quite distant from where most of the population resides. On the other hand, greater Helsinki area boasts some of the densest habitation in the country and is located close to Tallinn. Thus southern Finland would pose a more advantageous location for improvement.



Picture 2: Population density in the Nordics (from Wikipedia)

Proposed solutions

Two solutions have gained attention in the public discussion – a bridge, a tunnel or a combination of the two to Sweden, or a tunnel to Estonia. More attention will be given to the Estonian route, as it has been more thoroughly studied so far.

See picture 3 for an example of the current and planned routes: The Swedish route options are highlighted in red. The land route heads up north to Tornio before descending back south towards Stockholm. Proposed bridges would cross either at Umeå-Vasa midway to north, or at Turku-Åland islands-Stockholm at south. A common ferry route also travels from Turku to Stockholm the same path. The routes to Estonia are highlighted in blue. The land route travels via St. Petersburg, Russia, while the sea-crossing tunnel and ferries go from Helsinki to Tallin directly.

Bridge to Sweden

Finland's Western neighbour would lend access to central European markets by crossing central-southern Sweden to Denmark and Germany. The path would also cross the largest overseas bridge in Northern Europe, the Oresund bridge.

For the Finland-Sweden bridge, two crossing points have been proposed: from Vasa to Umeå, and from Turku to Stockholm via Åland islands. The proposed bridge from Vasa to Umeå would be located on the narrowest point in the Gulf of Bothnia, roughly 60 km from shore to shore. The bridge would take advantage of the islands between the two nations to reduce the engineering load. However, the population around Vasa and Umeå regions is not very dense. The Turku-Stockholm route in turn would run either a tunnel or a set of bridges through Turku archipelago to Åland islands, which are located halfway between the nations. Onwards from Åland the route would carry on as a bridge. On wilder proposals, even Hyperloop has been suggested to connect the two nations, but such proposals have so far been dismissed as fluff.

Despite appearing somewhat regularly on media, not much actual planning has been devoted to the idea so far. Availability of estimates is therefore still non-existent.

Tunnel to Estonia

A more recent and popular proposal has been to build a Channel style railway tunnel from Helsinki to Tallinn, Estonia. The cities are separated by only 80 km distance, residing on opposite sides of Gulf of Finland. The link would primarily serve passenger traffic to further integrate the two northern capitals, but could also serve cargo. Passage time is estimated to be around 30-45 minutes, against current 2 hours on a ferry (Sweco 2015). The rail width is planned to be same as the standard in mainland Europe, creating a



Picture 3: Existing routes and proposed solutions

possibility of integration with the upcoming Rail Baltica. The rail width, however, is not compatible with the existing trains in Finland. (“Helsinki–Tallinna-tunneli ottaa askeleen eteenpäin – Suomi ja Viro sopivat selvityksestä”, Helsingin Sanomat 4.1.2016)

The current regional integration of the Helsinki-Tallinn area can be compared to that of Vienna and Bratislava area in central Europe. Both Finnish and Estonian are highly service based and knowledge intensive, yet the common science base and networking is still weak. Furthermore, there are notable price and salary level differences between Finland and Estonia, which dominate the relationship. This causes asymmetric traffic, where Finns generally travel to Estonia for leisure while Estonians travel to Finland for work or study. (Laakso & Kostiainen 2013; Nauwelaers, Maguire & Marsan 2013)

Leaders of both Helsinki and Tallinn find the tunnel a lucrative option (“Helsingin johtajat haluavat jatkaa Tallinnan-tunnelihanketta”, Helsingin Sanomat 11.2.2015), as it would support creation of a twin city area similar to that of Malmö and Copenhagen or the aforementioned Vienna-Bratislava. In Finland and Estonia combined, there are approximately 4 million people living within 200 km of the capitol cities, which could benefit of the improved connectivity. Further unification of markets and employment areas would supposedly boost the economy of not only Helsinki and Tallinn, but both nations in general. Yet how the benefits would be accrued would likely be asymmetrical, as most of the nationwide benefits would supposedly go to Finland. In a nutshell, Finland would benefit of the increased connectivity to central and eastern Europe, while Estonia would mostly benefit of increased connectivity to Helsinki and increased integration of the economic zones. (Spiekermann & Weneger 2013)

So far two studies have been funded by the EU and municipalities to investigate the viability. In 2014, a 100 000 EUR study was funded and carried out by consultation company Sweco. The results of the study were released in February 2015, concluding that the project appears viable enough to warrant a more comprehensive survey. Based on the results, in 2016 June EU granted 1 million EUR for a follow-up study that would focus more on state-level benefits and geological surveys. (“EU provides €1 million for Tallinn-Helsinki tunnel feasibility study”, ERR.ee 15.6.2016)

According to the feasibility analysis by Sweco in 2015, the estimated costs for the project would be in range of 9-13 billion EUR. Of this sum, the actual tunnel would cost roughly 4 billion and the remaining money would be required by other involved infrastructure projects within mainland Finland and Estonia. The tunnel would open at earliest by 2030. Report by City of Helsinki (2016) estimates that the loans required for the project would be paid in 35-40 years.

Conclusion

Both solutions face economic concerns – while the cost of building might not be prohibitive, the uncertainty of economic gains diminishes the lucrativeness of the projects. While there may not be a reason to lay suspicion on estimates of generated profits and forecasted passenger numbers, feasibility studies such as these have had a history of bending truth for more favourable view, such as in the case of the Channel tunnel.

While Sweden is more important as trading partner than Estonia, proximity of Helsinki and Tallinn and the possibility of creating a wider market area appear to tip the scales in favour of the Helsinki-Tallinn tunnel. It has gained significantly more visibility in Finnish media, and it receives more support from the city leaders.

Sweco’s analysis claims that the tunnel would break even in a timespan of a few decades. Even if the tunnel never truly turns profitable, the increased integration of Finnish and Estonian economies combined with

the improved access to central and eastern Europe might make the tunnel worthwhile at least for Finland.

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