<O 3.5 >

"Mobile realtime info and ticketing pilot in Öresund Area"

Summary result description

Interreg Baltic Sea Region Project #R032
"Sustainable and Multimodal Transport Actions in the Scandinavian-Adriatic Corridor"

Work Package	WP3 Multimodal Transport
Activity	3.5
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Output Description (Application Form)

- The output is:
- a) A merged Skåne/Själland traffic information system accessable also for third party uses.
- b) extended Skanetrafiken apps for iPhone / Android mobiles providing
- - the opportunity to purchase tickets for the entire Öresund area via the mobile,
- real time public transport information, i.e. informing about disturbances / delays etc.

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1 Background

Skånetrafiken changed the ticketing system 27.03.2017. With the change the customers got an opportunity to pay and save the monthly ticket in the app. But only within Skåne. The customers commuting between Skåne and Själland where still forced to use the old system.

Furthermore the ID-controls that got enforced in January 2016 where still resulting in 14% loss of Öresund passengers.

So we wanted to give the commuters a better experience with better information and an easy buy function in the app.

This would hopefully give us, and the Danish commuters better reasons to go back to the train instead of using the car. Giving the Öresundsregion a positive effect for the environment and easing the problematics of car congestion within both of the bigger cities Malmö and Copenhagen.

Together with Rejseplanen, Banedanmark and DSB we could combine disturbance information, such as tracks, delays/cancelled, traffic messages, track changes, alternative routing and exchange information. This is information that Skånetrafiken can't get from the Danish side without the help of these partners.

2 Solution

The Danish static and realtime data needed to be integrated into Skånetrafikens travel app backend systems so a customer could search for a train going across the bridge.

Skånetrafiken first worked with Rejseplan to implement their GTFS[1] data into a separate server, giving us the geographical and static data over the busses and trains.
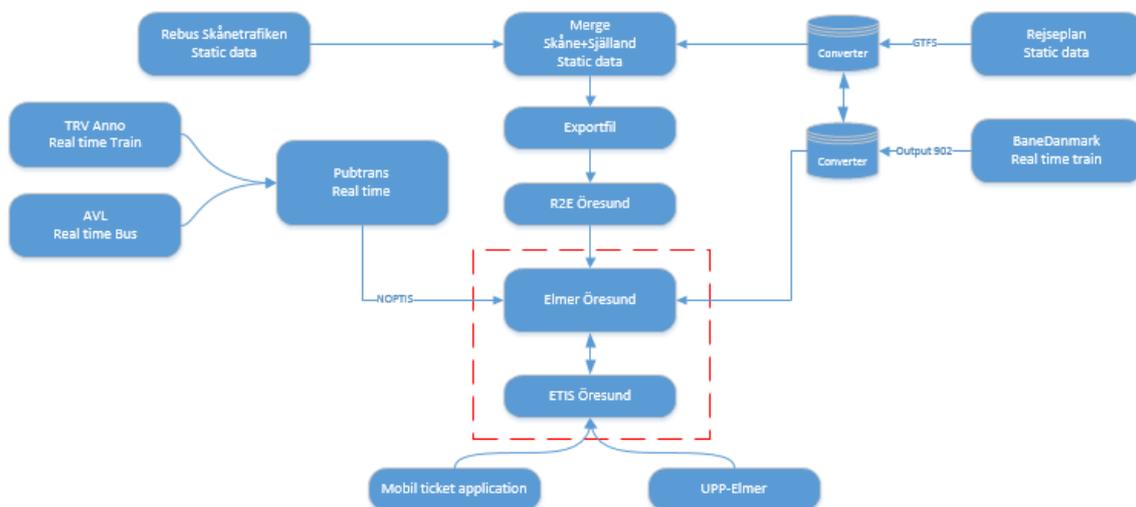
The GTFS data set is not a Transmodel[2] based format and therefore we needed to convert the data set into a manageable one for Skånetrafiken. So we constructed a converter service that could manage this. After this was done we were able to merge the two static data sets, giving us a complete set of both Skåne and Denmark that could act as the basis for matching real time information from Denmark. But Rejseplan had not implemented the second Google Transit API, GTFS-RT[3] at the time of the project. This denied us the possibility to add the real time data from Rejeseplan.

Banedanmark have a proprietary format called Output 902, which could be used to add the real time for trains. As this isn't a Transmodel based format, we had to construct yet another converter service.

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[1] https://developers.google.com/transit/gtfs/

[2] http://www.transmodel-cen.eu

[3] https://developers.google.com/transit/gtfs-realtime/

The problem that we faced in the project was the difference in granularity of data sets. The costumer of Skånetrafiken where use to data with high granularity.

One example was the geographical shapes of routes for buses. Skånetrafikens data was resulting in correct lines drawn of the bus route when looking at it on a map. With the data from Rejseplan the buses seems to fly over the map. Rejseplan needed to update their export module to the newer version before we could use the data.

Example when shape-file are incorrect.
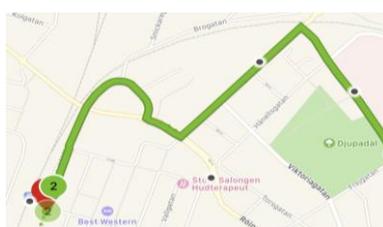

Example when shape-file are correct.

Another example was that the data from Banedanmark resulted in a discrepancy in departure time when shown in our systems compared to Rejseplan. This is due to a truncation of data in the time format contra rounding of data.

Example of use of trunkating contra rounding of data.

Train departure	Time	Truncated	Rounded
Raw data	12:32:59		
Rejseplan		12:32	
Skånetrafiken			12:33

As is today we are showing different times when compared, we are rounding the data and Rejesplan are truncating. This is not thought of as the ideal solution but due to technical heritage either Rejseplan or Skånetrafiken can change the way of handling data.
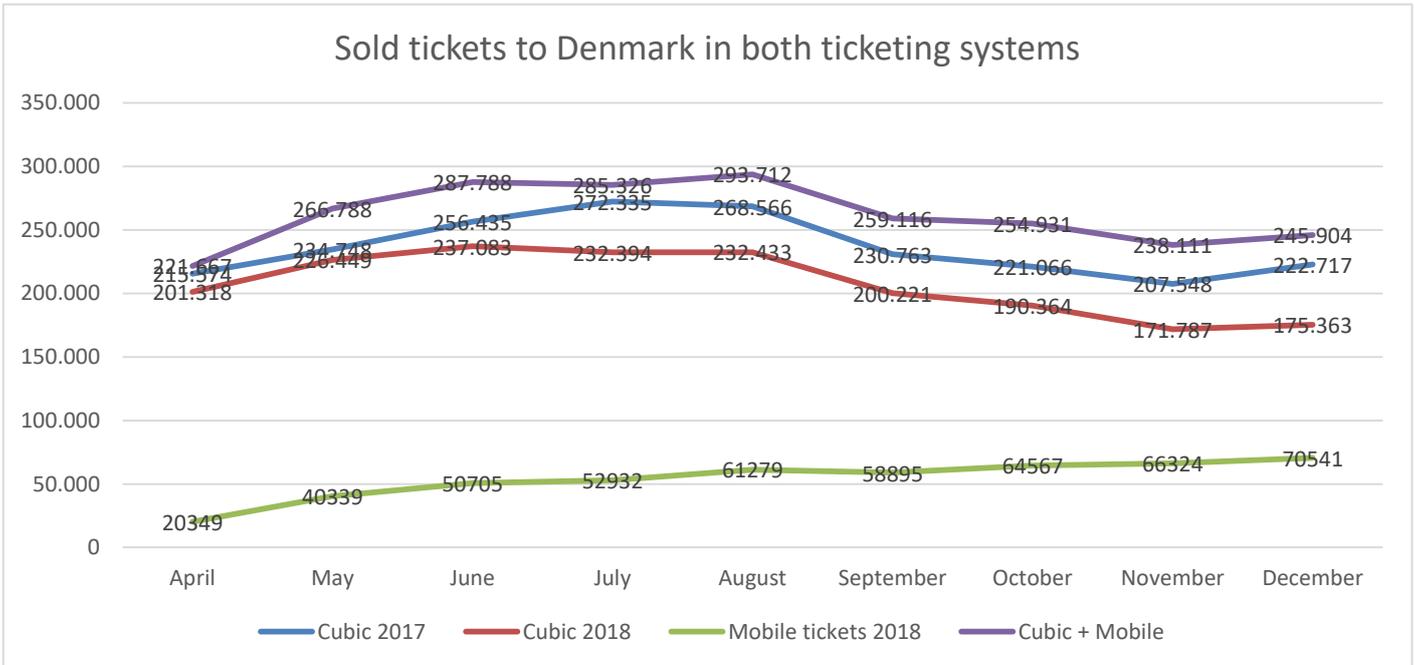
The app itself is available for both Apple and Android telephones. After downloading it is pretty self-explanatory. The customer starts with typing in where he or she wants to go, the field "From" are always based on your GPS position if you don't write something other yourself. Then the costumer will get suggestions on different trips. In this window the customer can chose to click on the map and the route of the trip will beshown on a map.
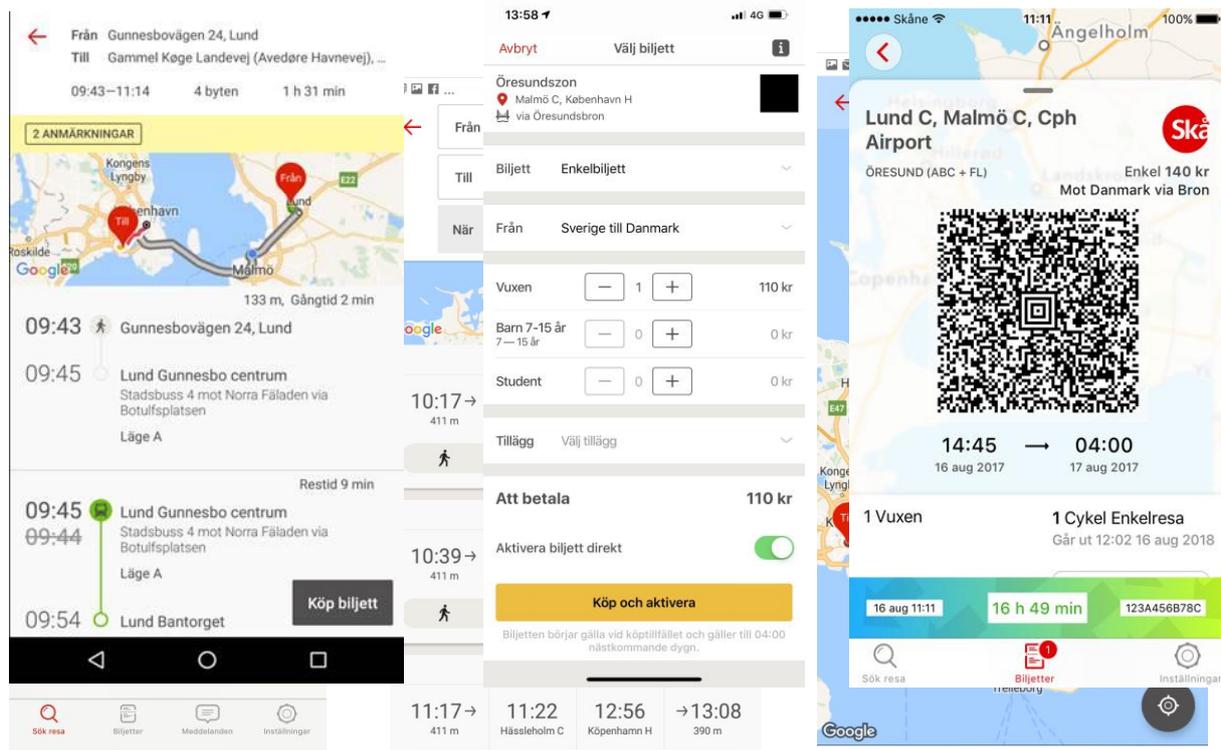
When the customer are satisfied with the chosen trip and time, they press the "buy ticket" button and the menu for ticket sales appear. Here the customer compiles the ticket by adding how many people that shall travel, and what type of travellers it is. Adult, children or student. When the customer are satisfied they press "buy and activate". Then the valid ticket is shown on the screen with fields indicating when it was purchased and how long it is valid

3   Conclusion

With this new solution we achieved our expatiations, the goal was to deliver an app that simplified the traveling process for our travellers going cross-border. We have gotten a lot of positive feedback regarding the usage of the app and can see that the usage is going up.

Sold tickets to Denmark in both ticketing systems

Legend: Cubic 2017 | Cubic 2018 | Mobile tickets 2018 | Cubic + Mobile

Month	Cubic 2017	Cubic 2018	Mobile tickets 2018	Cubic + Mobile
April	215.574	201.318	20349	221.667
May	234.748	226.449	40339	266.788
June	256.435	237.083	50705	287.788
July	272.335	232.394	52932	285.326
August	268.566	232.433	61279	293.712
September	230.763	200.221	58895	259.116
October	221.066	190.364	64567	254.931
November	207.548	171.787	66324	238.111
December	222.717	175.363	70541	245.904

This sales diagram tells us that the release of the app have resulted in more tickets sold in general. Although there is a small cannibalization on the old ticketing system the two systems combined results in more tickets sold in 2018 then 2017. About 10% more tickets sold since the new feature was enabled.