
Leif J. Olestad

DILAX

PUBLIC TRANSPORT
CASE STUDY

COUNTING ON IMPROVEMENTS

Understanding Daily Operations to Provide Effective Transport Solutions and Reliable Services to The Public

» In our daily operations it is essential to thoroughly understand the processes and dimensions of travel behavior. To be able to deliver top-notch services to the public, we need to provide the right capacity at the right time and on the right departures. We have to know the passenger numbers and understand the passenger flow during the day, over the week and throughout the various seasons. This information is crucial for us to be able to continuously improve the infrastructure that is required for an optimal offering. «

Peter Hausken, *ICT Manager Operations at NSB*

NSB

CHALLENGE

Oslo is currently one of the fastest growing metropolitan areas in Europe. Over the last 8 years, the Norwegian government has considerably increased its investments in the railway sector. With these investments, the government aims to empower public transport operators to provide an effective and environmentally friendly public transport system that meets the passengers' needs. At the same time, these initiatives will advance overall regional development and reduce the need for private vehicles in more rural areas.

NSB ordered more than 60 new passenger trains to modernize its fleet and create new capacity in order to bring forward the long-term expansion of the public transport system. To be able to optimally plan their service offering and improve revenue sharing with other transport companies and the counties in the Oslo area, NSB needs accurate insight into the actual number of passengers travelling.

In the past, passenger statistics at NSB was based on manual surveys. However, the survey results did not provide the required data quality. The hope was that electronic ticketing data would supply the needed information and would eliminate the need for an APC system. But E-Tickets proved just as inappropriate for providing exact passenger figures since boardings and alightings of all commuters using non-electronic seasonal tickets could not be tracked.

THE NORWEGIAN STATE RAILWAYS – NSB

NSB is a Nordic transportation group owned by the Norwegian Ministry of Transport and Communications. Its main activities are passenger transport by bus and rail, freight traffic by rail, train maintenance, and property development. Together with its subsidiary NSB Gjøvikbanen they run the passenger trains all across Norway. In 2012, NSB transported 53.8 million train passengers and 133 million bus passengers.

THE SOLUTION

Eventually, a new mindset in the top management brought about significant change by formulating a strategic long-term project which paved the way for APC. In 2007, NSB established the project Train on Net. The aim of this project was not only to provide internet access to the passengers, but to build one common IT architecture in which many different systems on board the NSB trains communicate with a central system 'on shore' via standard internet protocols. Hence, the need and cost for hardware within the trains is reduced to a minimum as cables and antennas are now shared by multiple systems.

Consequently, the implementation of the DILAX system no longer posed a challenge as it could be smoothly integrated into the existing infrastructure and hence it has become part of the strategic project. By the end of 2013 around 30% of all trains operating in the Oslo area were equipped with an APC system. The sample counts from those vehicles are being extrapolated across the entire network using the DILAX software suite DavisWeb Mobile.

REAL-TIME DATA RETRIEVAL

NSB implemented DavisWeb Mobile as the basis for APC data reporting and analysis. In order to be able to test how the APC system performs and to better demonstrate how APC actually works, NSB initiated a real-time data retrieval project together with DILAX. Within the framework of this project, NSB is able to create comprehensive reports about all trains equipped with an APC system and the data they have collected to date.

GETTING THE FULL PICTURE

Currently, NSB is developing models for statistical prediction based on APC and other data. The APC data needs to be coordinated with the counting data which is still collected manually on long distance trains. In addition, the data needs to properly reflect the complexities of the daily operations of a railway company by taking into account that in a train consist there might just be one train set equipped with an APC system. DavisWeb Mobile is again serving as a core source of information and daily, train specific operations.

NSB is further remodeling its operational data and the way they report on it. Obviously, APC data is one key factor, but NSB also takes into consideration other important data, such as weather and punctuality. This helps them to see how passenger flow and numbers are influenced by rain or the trains' timeliness. NSB wants to get the full picture and know exactly what the general performance of their rolling stock is and how passenger numbers influence energy consumption of the fleet.

MAKING THE COUNTS LAST

In 2012, NSB carried out a significant timetable change for the first time in 15 years and set up a new timetable from scratch for the entire Oslo area. As a matter of fact, NSB created a completely new pattern of trains without being able to refer to high quality passenger data. This made it difficult for NSB to foresee how the changes in the timetable would affect the passengers' travel preferences. As a result, seat capacities were not fully in line with passenger numbers and capacities had to be adjusted to accommodate new travel patterns. Hence, a further timetable change is planned for 2014 – though not as big as the one before. This time, NSB will of course use the new APC data.

An important step for NSB is the effective coordination of the timetables with the other public transport operators in the area. Many of the buses no longer travel into Oslo's city center, but end at train stations to reduce the traffic volume during peak times, make connections faster and bus services more efficient. As a result, road and rail transport companies no longer compete for passengers, but cooperate to ensure good service and travel comfort for the public.

CONCLUSION:

Constant availability of network data helps NSB plan daily operations more efficiently, increase customer satisfaction, optimize use of resources, and improve revenue sharing – all at the same time. The smart combination of DILAX and third party information is an ideal basis for the extensive optimizations at NSB. Looking at the benefits and savings generated, NSB rates DILAX APC technology as a highly valuable investment.