How Estonian-developed digital solutions can help in a contactless world

DIGINNO network is sharing best practice examples from around BSR in order to demonstrate how sharing knowledge and benefits between IT and industry sector will lead to innovation.

Estonia, one of the most digital nations in the world, has several practical solutions either in development or in active use that could help overcome some of the global challenges posed by the coronavirus crisis and lockdown.

The global transport and logistics industry have been hit hard during the COVID-19 outbreak, as countries have declared lockdown measures one after another, with massive build-ups of various cargo vessels at airports, borders and ports. Many other industries have suffered a great deal as well, among them restaurants and classic retail operations.

But consumers still need access to medical supplies and other vital equipment, not to mention comfort food from their favourite restaurants for beating the blues. As we are getting increasingly used to contactless interaction with vendors and service providers, there could be other intelligent transport solutions available as well.

Estonia, one of the most digital nations in the world, already has several practical solutions either in development or in active use that could help overcome some of these challenges. Maarja Rannama, the head of the intelligent transportation network, ITS Estonia, is convinced that Estonia is rather well-prepared for social distancing and for conducting business remotely due to being used to digital services in everyday life. The same solutions can be implemented all over the world — some examples are presented below.

SIMPLIFYING CROSS–BORDER TRAFFIC

Estonia has been developing a digital border crossing solution to ease congestion at important transit points. Pre-designated time slots make it easy for truck drivers to plan ahead and avoid idle waiting time, instead trucking all the way into the night.

Madis Sassiad, a sales director at software developer GoSwift — a company that handles electronically queues of vehicles and people at traffic bottlenecks at border checkpoints, ports and tourist attractions — points out that the same software could be used during the ongoing coronavirus crisis for seamlessly replacing drivers and trailers at borders, without wasting anyone's time and maintaining a completely contactless environment for truckers.

"Otherwise these truckers might have to spend a fortnight in quarantine in each country that their delivery route runs through. But our software may have other advantages as well in the new post-COVID era, as it's also suitable for managing access to warehouse facilities without human interaction — arriving trucks are identified by licence plate and mobile information," Sassiad says, adding that the software's mobile data collection could be useful for gathering information about the exact entry point of vehicles carrying coronavirus-infected people in retrospect.

CREDIT CARD PAYMENTS ON PUBLIC TRANSPORT

Public transport is still in use in most countries, albeit with restrictions in place to avoid contact with other passengers and vehicle drivers. Bothering the driver to buy a ticket for cash is a big no-no these days and not everyone has a period card at hand when boarding a bus or a tram, particularly when the borders open up again and tourists want to use public transport in other countries.

The largest cities of Estonia have already simplified payment procedures on public transport. Using pre-paid tickets and validation cards such as Oyster or MOBIB is a common practice but paying for a fare directly at the validator with a credit card is still a rare service worldwide. The service is, however, already available in the Estonian capital, Tallinn; in the second largest town, Tartu; as well as in Sweden — in Malmö and Skane region.

"Limiting interaction with the driver or a kiosk-vendor is absolutely necessary during the coronavirus outbreak and we believe the future of fare validation to be even more contactless, with the system developed to understand if the passenger is using public transport on a regular basis and to calculate the fare discount based on that," Argo Verk, the head of sales of the system's developer, Ridango, explains.

A SIMPLER AND MORE AFFORDABLE SOLUTION FOR DELIVERIES

Restaurants and cafes have suffered a lot during the crisis lockdown due to the restrictions. Most of them have transformed their operations to provide take-away or food deliveries, existing delivery services, however, charge an exorbitant rate of 25-30% per delivery, thus weakening the survival chances of smaller cafes and restaurants. Many restaurants have also been forced to either suspend or lay off their waiting staff, contributing towards a potential social catastrophe.

In Estonia, a chance encounter between a restaurateur, a fleet management software developer and an e-shopping solutions developer resulted in a new simplified platform that was launched in just half a day. This set-up can help every cafe and restaurant launch their online sales using their own delivery service within a matter of minutes. A simple template helps the restaurateur quickly convert their menu into an online shopping list and the former waiting staff can become couriers using fleet management software to quickly deliver food to clients in the area without having to rely on expensive external service providers.

The solution was developed quickly to help out restaurants in Tartu, the developer FleetComplete's sales director Jaanus Truu says — but it has already picked up considerable interest nationwide and could be exported to any place in the world. "Our solution is easy to set up and functions at a fraction of the cost of using dedicated delivery companies, at the same time also maintaining the work staff — this way the restaurants have a higher chance of survival and can resume their operations swiftly after the crisis retreats," Truu notes.

„Above all it could be viewed as a community tool for organising deliveries in smaller towns and villages to include grocery shops and other mom-and-pop style operations. This ad-hoc solution may well turn out to be the reality of the new world we will be facing, Truu believes.
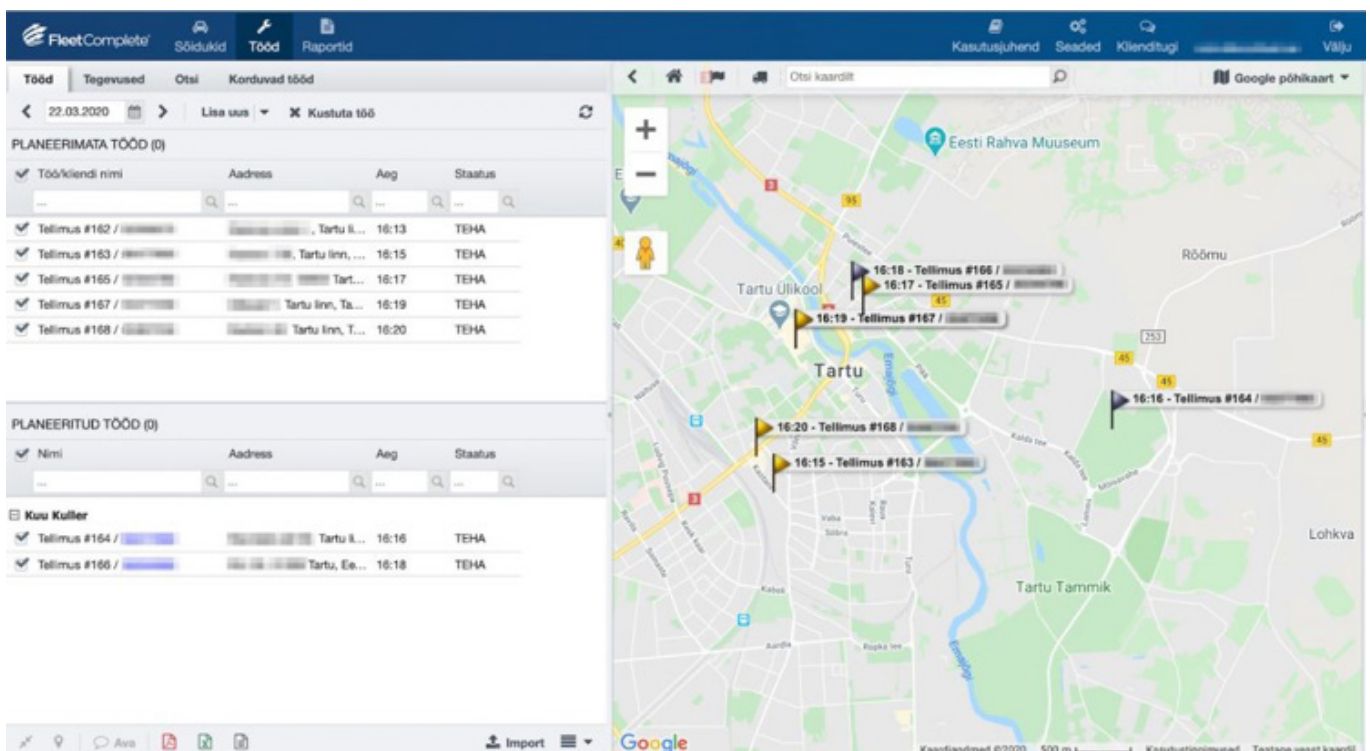
COLLECTING TRAFFIC DATA ABOUT PEDESTRIAN MOVEMENTS AND PUBLIC GATHERINGS

With most of the world now practicing the two-metre (6.5-foot) social distancing norm, information about people gathering or moving in larger groups could be particularly important to law enforcement agencies.

In Estonia, traffic data from Smart Pedestrian Crosswalks (SPC) and CCTV cameras can be used for monitoring larger gatherings and alerting the authorities when necessary. The data feed is not personalised and the identities of the people monitored are kept anonymous.

"We developed our urban movement monitoring system from our smart unregulated pedestrian crossings, which monitor approaching pedestrians and alert drivers to their presence, thus improving road safety," Hans Leis from software and hardware developer Bercman Technologies says. "Now, with a little tweaking, we are able to contribute towards public safety as well."

INTEGRATING DIFFERENT SERVICES TO DEMAND–RESPONSIVE TRANSPORT

The largest island in Estonia, Saaremaa, is building a community cloud version of demand-responsive transport (DRT). While DRT has been in use around the world for decades, Estonians aim to integrate social transport and other services into public transport services.

Saaremaa has a limited population density and traditional public transport is usually inefficient, with perhaps only one–two users riding on pre-scheduled routes.

"Our software asks the user to define their need for a particular service and the system then offers the optimal solution — be it the delivery of groceries, providing regular transport from home to the workplace or a scheduled visit to the doctor's," the solution developers Modern Mobility's CEO, Pirko Konsa, says.
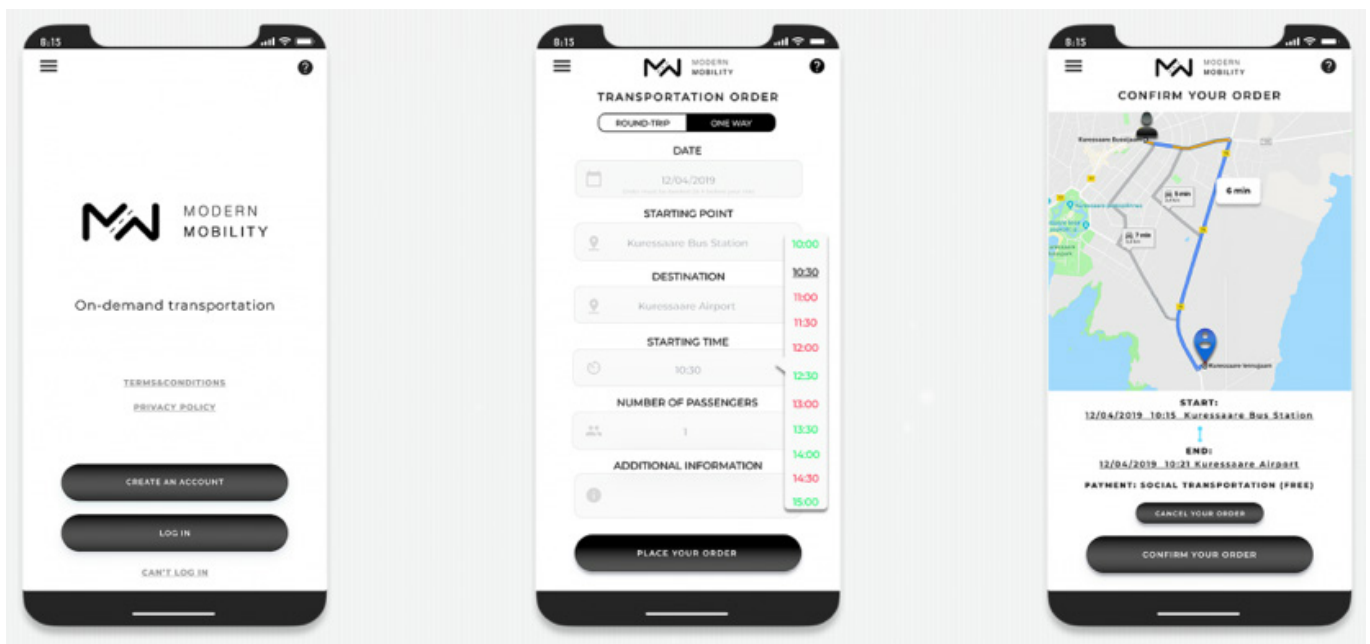
CONTACTLESS INTERACTION WITH STATE AUTHORITIES

The country's unique electronic identity system has built the foundation for contactless interaction with the government and with other businesses or individuals.

„"For example, thanks to a nationally certified digital identity, Estonians can still perform most of their vehicle-related transactions and interactions with the Department for Motor Vehicles (DMV) without leaving the comfort of their quarantined homes," Maarja Rannama says. "The only function that has been suspended for the time being are taking the driving test and technical inspection of the vehicle — all other tasks are still carried out routinely online." In stark contrast to many countries in the rest of the world, the Estonian DMV actually stands as an eponym for a highly efficient and resilient government department even during a crisis.

Text: Priit Koff, photos: Ridango, Bercman