On the cusp of revolutionary changes in transport

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We are seeing many eye-catching IoT initiatives in the transport sector, but we are truly still at the beginning of the changes that IoT will bring to our world, writes **Igor Ilunin, head of the IoT practice at technology consultancy DataArt.**

IHS predicts there will be about 70 billion IoT devices by the end of 2025, but don't worry, we won't have to wait an entire decade to experience this incredible evolution. Most cities are tackling the same issues when it comes to transportation – traffic congestion, air pollution, transport speed and cost.

According to **Inrix, traffic congestion costs US motorists $305 billion (€263 billion) in 2017** with the average US commuter spending 42 hours in traffic per year. In addition to the direct effects on economic growth and quality of life, the indirect effect on climate change from air pollution is becoming increasingly evident and concerning. According to the World Health Organisation (WHO), transport is the fastest growing source of fossil-fuel emissions of carbon dioxide (CO2), the largest contributor to climate change.

Cities around the world are taking steps to tackle these issues. Of these initiatives, there are several approaches that are leading the way in transforming the transportation sector.

Premature deaths in Barcelona

In Barcelona's metropolitan area, several studies have found that air pollution causes 3,500 premature deaths a year. Another study released by the local Environmental Epidemiology Agency determined that by simply reaching levels of nitrogen dioxide mandated by the European Union could prevent 1,200 deaths.
To improve the environmental impact, Barcelona initiated an innovative smart city plan with the concept of so-called 'superblocks', a 3×3 block square that would reduce traffic and limit speed inside the zone. Some streets would be free from cars, and more space made

available for pedestrians. A bold experiment, the city will have to analyse massive amounts of traffic and commuter data for the system to be efficient, but this is definitely an initiative to watch.

In the US, San Francisco expanded the SFpark parking pilot to the whole city in 2018. SFpark goal is to reduce time people waste looking for parking and introducing demand-responsive price adjustments based on the occupancy, time of the day, and geographic areas. The project uses real-time data from a network of GPS wireless sensors installed **next to the city's parking meters to detect parking availability. SFpark has led to a** 30% reduction in exhaust emissions and vehicle miles traveled to find parking.

San Francisco is also relaunching a dockless e-scooter sharing pilot to improve first and last mile transit experience. Similar pilots are already launched in more than a dozen cities in California; San Jose, San Diego, Oakland. The approved scooter sharing companies have agreed to provide municipalities with all the transportation data collected, at no cost to the municipalities.

Uber shares its Movement tool that lets cities and inhabitants analyse travel data based on millions of trips collected by the company in Boston, Manila, Sydney, Washington, D.C. and other cities. This data helps to provide deep insights about the travel time – based on time of day or day of the week, analyse travel patterns, and see how road closures or big city events impact the traffic.

What's next?

The trends in transport are all focused on Mobility as a Service (MaaS), autonomous and connected vehicles, replacing gas with electricity, and transparency. We will continue to see vast progress in these spaces.

Ten years from now, or fewer, car companies will no longer be at the top of the ecosystem. Their place will be taken by the Ubers, **Lyfts** and **Waymos** of the time. Personal vehicle purchase will be less economically efficient, resulting in a greater shift to car-sharing services, autonomous vehicles and the ride-hailing market.

Igor Ilunin

The ride-hailing market will become better integrated into public transportation systems, replacing traditional buses and leveraging data and artificial intelligence to calculate optimal and custom routes for commuters.

The future of autonomous buses is close: they are being tested in many countries with trials on public roads that include ordinary people as passengers. The US, Sweden, China and several other nations are operating a small number of self-driving buses in the expectation of massive rollouts soon.

Autonomous vehicles are expected to include a much higher percentage of gas-free offerings, providing much-needed relief from the enormous toll taken on our environment by the emissions of traditional buses and cars.

Vehicle-to-vehicle (V2V) and vehicle-to-everything (V2X) technology, aimed at enabling data exchanges between a vehicle and its surroundings, carry the potential to radically improve transportation in a variety of ways from reduced collisions to increased energy efficiency.

We are on the cusp of revolutionary changes in the way we travel. And who knows, maybe **we'll see flying cars pretty** soon!
You can find more information about DataArt [here](#).

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