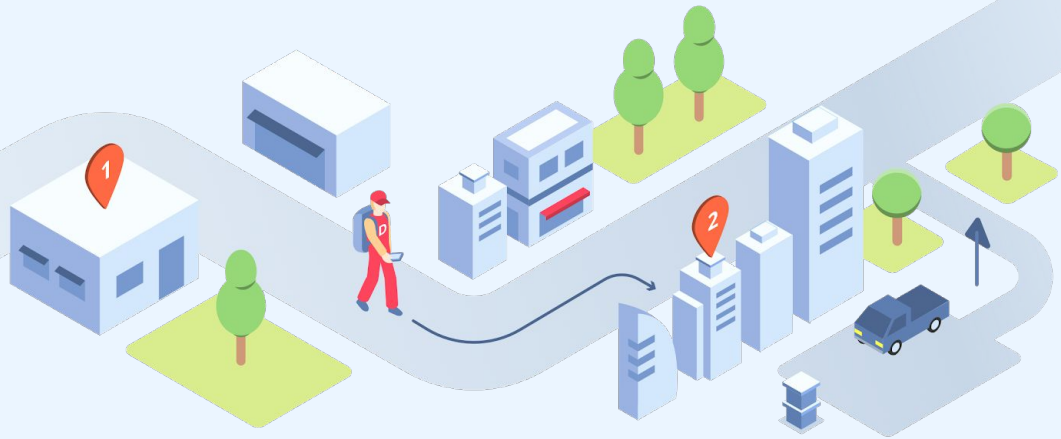
Dostavista

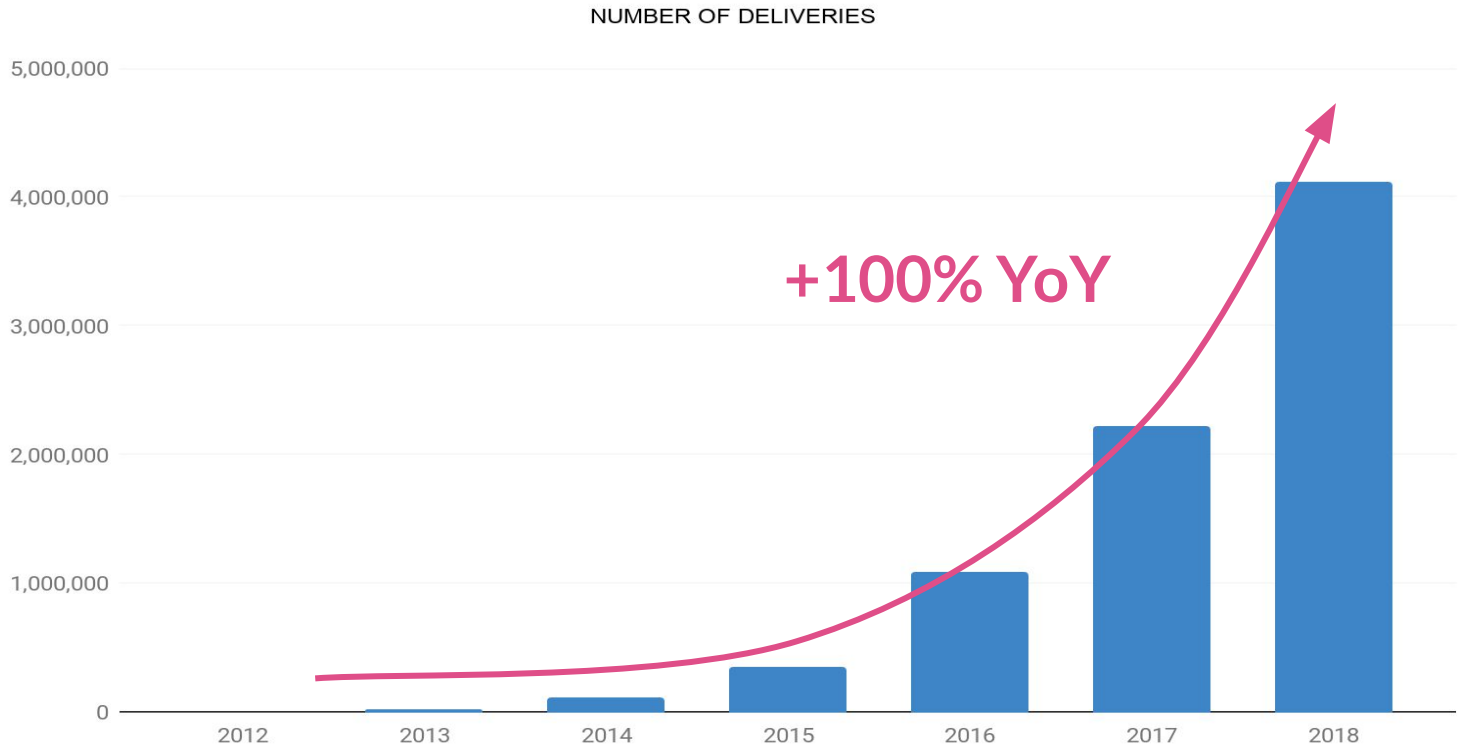
Phystech.Genesis / Diversity.Hack



Dostavista story

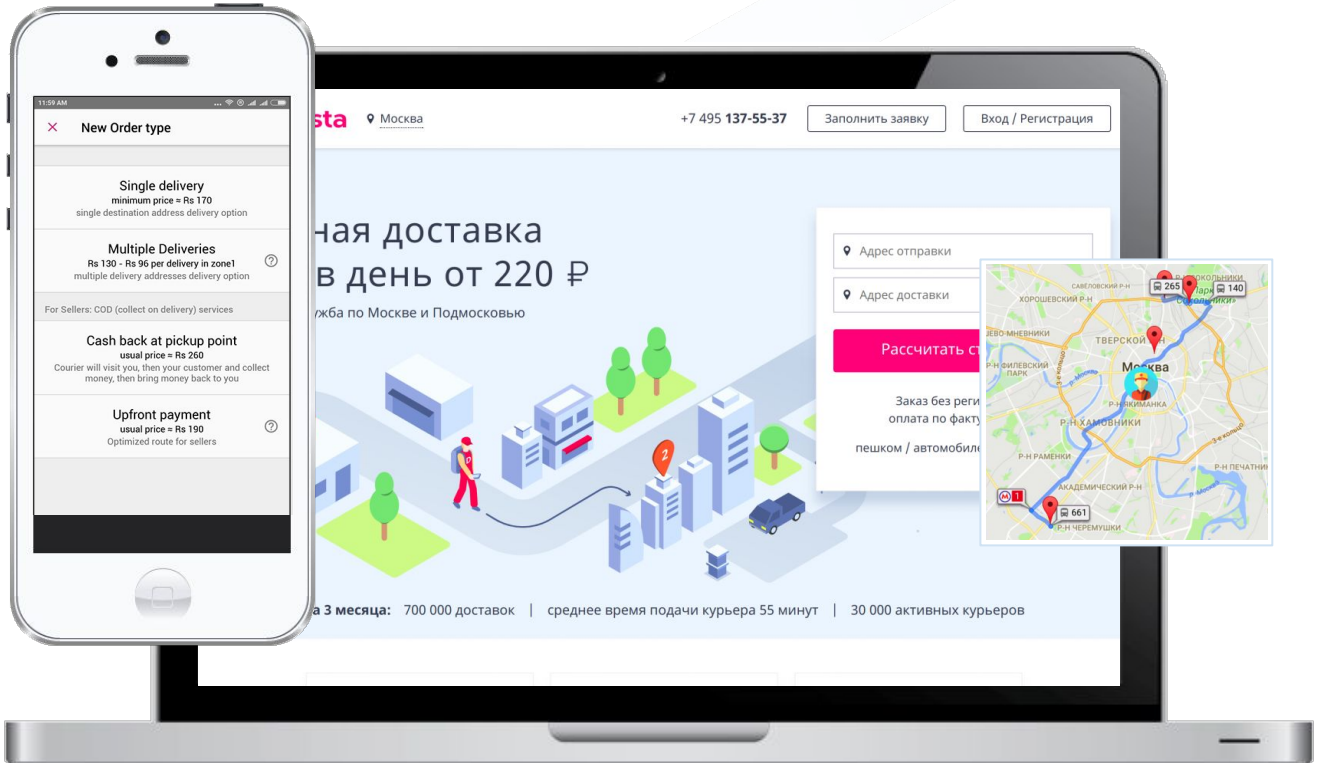
- Founded in 2012. R&D in Moscow, Russia
- Focus on innovative delivery services for SMEs
- 281 people in the team. 65 in R&D and management
- 4M+ deliveries in 2018
- Market leader in Russia, India and Turkey
- Launched in 13 markets since May 2016 with local team in each country; 2 shut down (UK, China)

Dostavista a rapidly growing global business that targets first and last-mile delivery market



Dostavista product (demand)

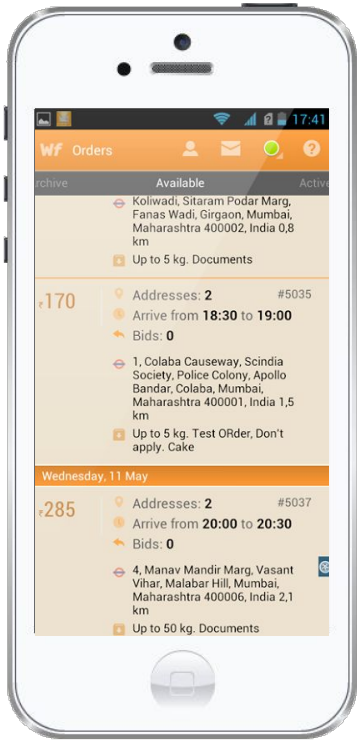
Dostavista has a unique feature set tailored to businesses and specifically to e-commerce

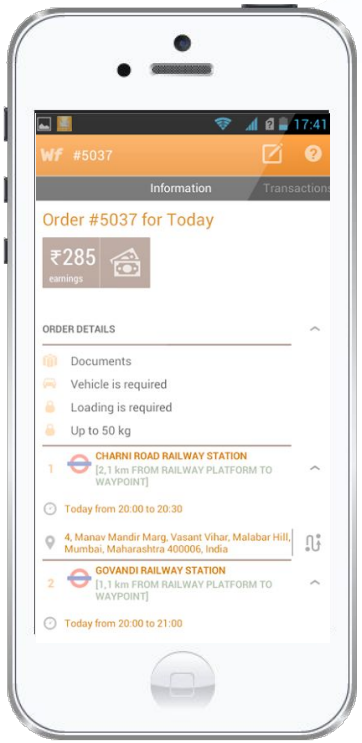


- Order online, via mobile app, or integrate with our API
- Request a courier on foot, car or truck up to 20 tons with loaders
- Pick up at a specified time.
- Plan a route to deliver up to 30 packages with 1 courier
- Deliver each package within a specified time interval
- Track delivery progress on a map
- Cash on delivery options
- Courier can purchase items anywhere with personal money
- Proof of delivery by signature, photo, QR code, location matching
- Insurance for valuable items

Dostavista courier app (supply)

We believe in the future of flexible employment. Over 1 million freelance couriers registered on our platform globally. Average earning per hour is comparable to pay rate at similar jobs with full time employment.



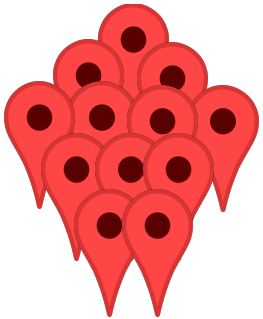


1. Couriers install Dostavista app, upload documents, pass online test and start working
2. They see a list of available orders and place bids for the ones they like
3. Dostavista robot assigns each order to the optimal courier from the ones who bid
4. Alternatively, couriers can skip bidding and opt-in for auto assignment
5. At each step of delivery couriers check-in and mark their steps
6. Upon delivery couriers collect recipient signature or other proof of delivery
7. Depending on type or order, after delivery courier transfers commission to Dostavista
8. As couriers grow their reputation they gain privileges in order assignment

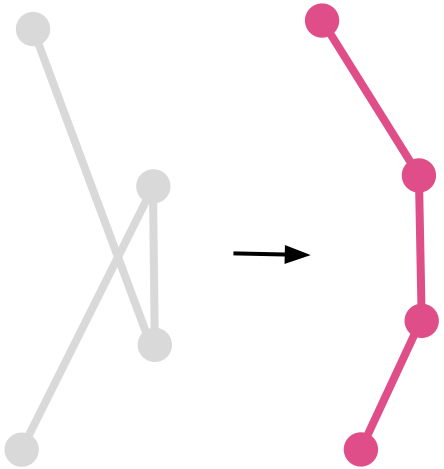
Market expansion by price simplification

Lowering price of same-day delivery exponentially increases demand by eating away from traditional next-day delivery market, as well as, generating new demand for delivery. In December 2018, in our initial tests of our ML-driven route optimization algorithms, we have been able to improve courier utilization by more than 50%, **achieving 1.4 deliveries per hour compared to historic average of 1.0 deliveries per hour**.

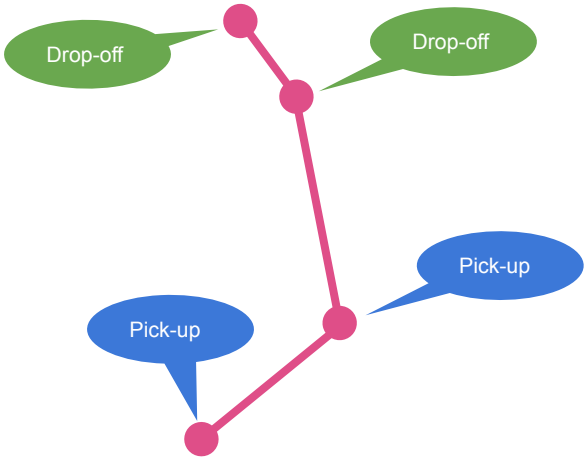
Scale and delivery density



Route optimization



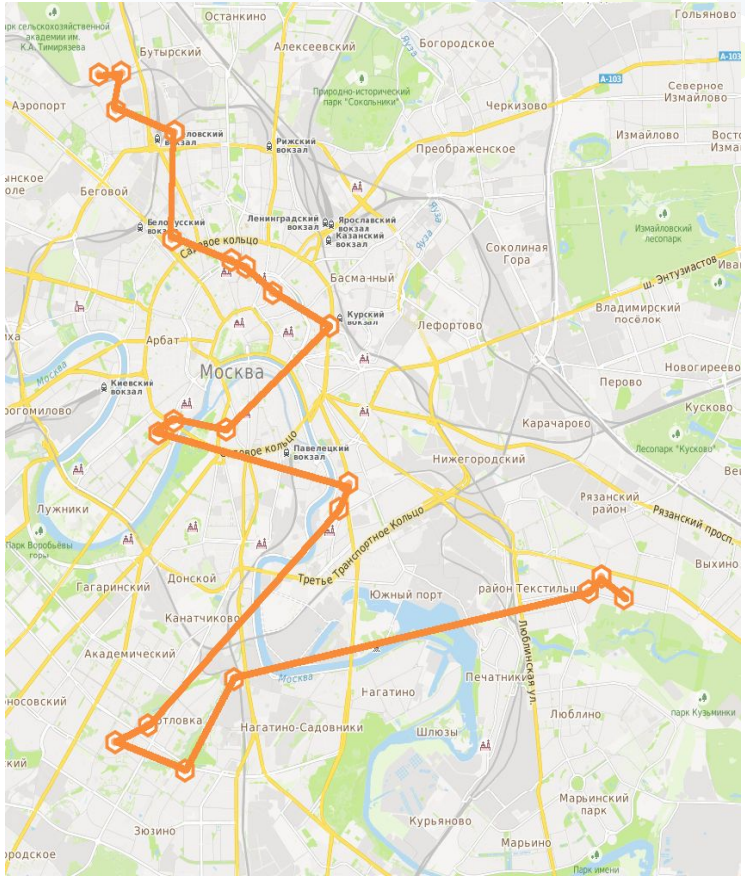
Delivery pools (parallel deliveries)



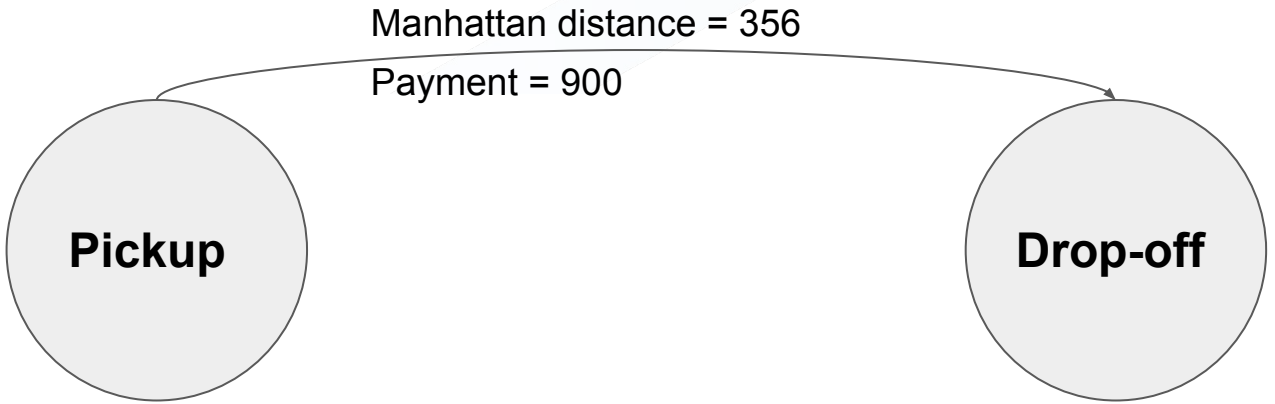
Traveling salesman problem has several difficulty levels

Common traveling salesman problem (TSP)	**Travelling salesman problem with time window (TSPTW)**	**Travelling salesman problem with time window, multiple depots and smth else**
NP-hard	NP-hard	Still NP-hard
Well-known	Not-so-well-known	Not-so-well-known
Can be solved practically	Can be solved practically with some heuristic restrictions	Not solved practically. Yet

The goal is to build efficient routes for couriers



Model of Order



Location:
x = 1, y = 1

Time window:
from 07:00 to 10:00
(from = 420, to = 600)

Location:
x = 208, y = 150

Time window:
from 11:00 to 12:00
(from = 660, to = 720)

Model of Courier

Has known start location

Works from 06:00 to 23:59 (360 - 1439)

Doesn’t spend any extra time on points

May arrive to destination in advance

Does exactly what he was told

Gets crazy after receiving misleading route

Dive into the task:
https://github.com/dostavista/phystech

Ask questions in Telegram:
http://bit.ly/dv-hack