GPS and vehicle monitoring -where we are now and what's next?

Michał Kucharski
CEO of PlusFlota and Deputy Manager of Polkomtel and Cyfrowy Polsat

PLUS FLOTA

GPS evolution

The historical perspective technology development

PLUS FLOTA

The history of Plus Flota company…

LABELS

- Service
- Fleet
- Savings: fuel consumption

	2012	2013	2014	2015	2016	2017	2018
Service			• Renting up to 24 months • Operating Lease • CFM full service • GPS Monitoring	• Fleet Management Policy • Advance data analysis • FMS system implementation	• Short term rental • Internal rental service dedicated to Polkomtel and Cyfrowy Polsat companies		• Car sharing – rental service dedicated to whole Capital Group • Rental service for individual customers – private purposes usage
Fleet			384	530	537	1064	1560
Savings: fuel consumption			N/A	N/A	24%	34%	35%

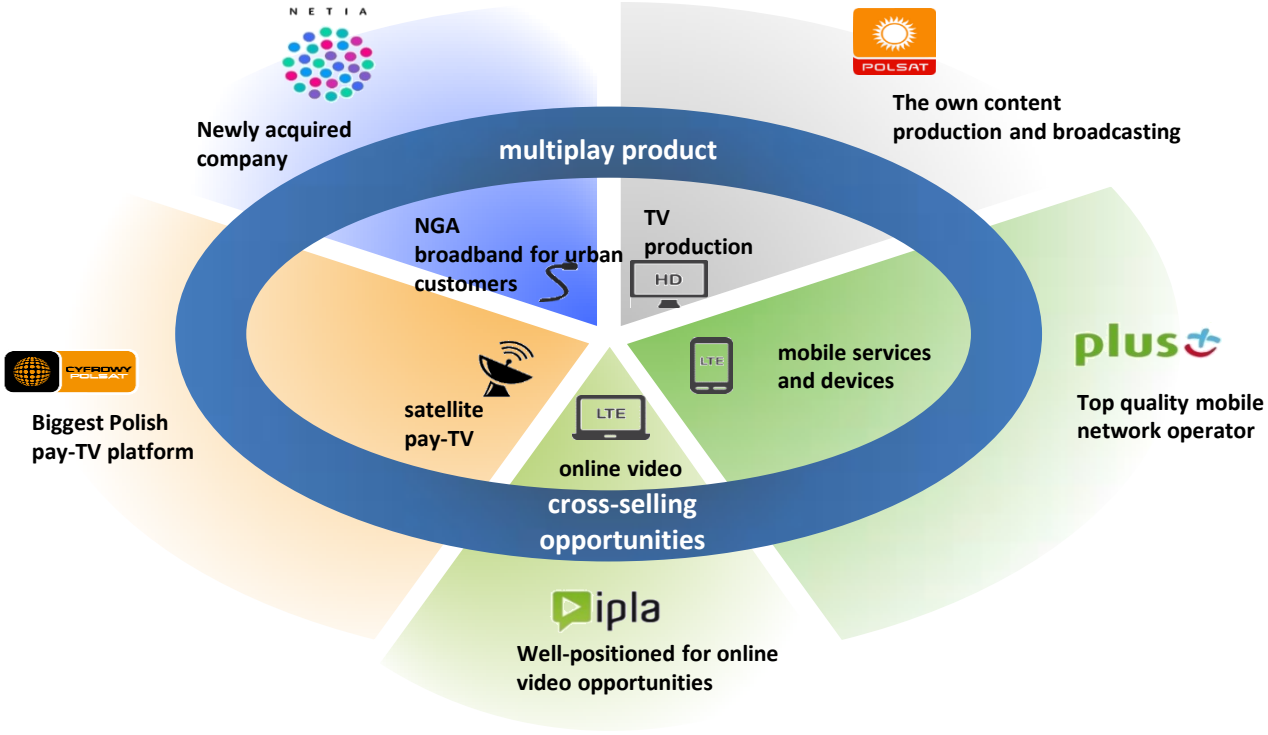
In 2012, Cyfrowy Polsat Group further strengthened its position by acquiring the undertaking Polkomtel company

The companies car fleet consolidation starts

The fleet management process consolidation in companies: Polkomtel, Cyfrowy Polsat, Telewizja Polsat, Liberty, Plus Bank, ZE-PAK etc.

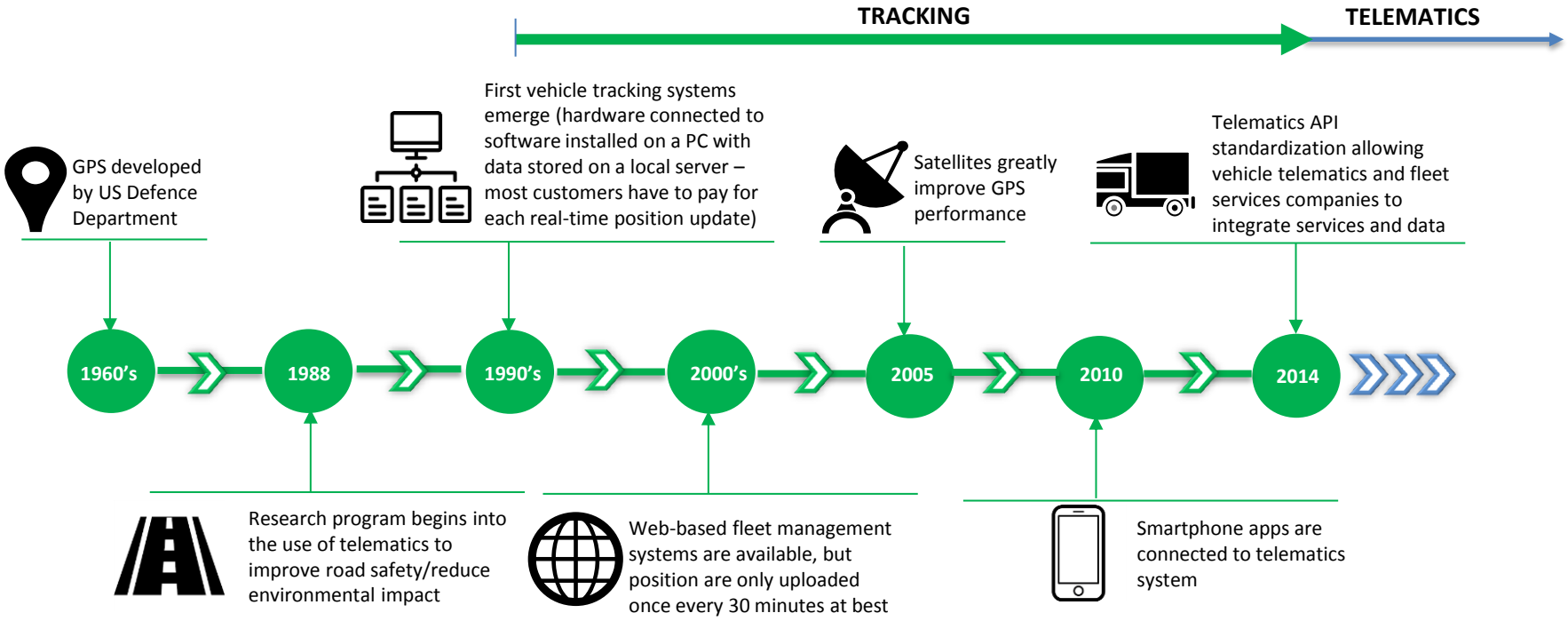
PLUS FLOTA

Unique market strategy based on complementary business pillars



PLUS FLOTA

History of GPS Vehicle Tracking and Fleet Telematics solutions



PLUS FLOTA

Vehicle Connectivity

COMFORT

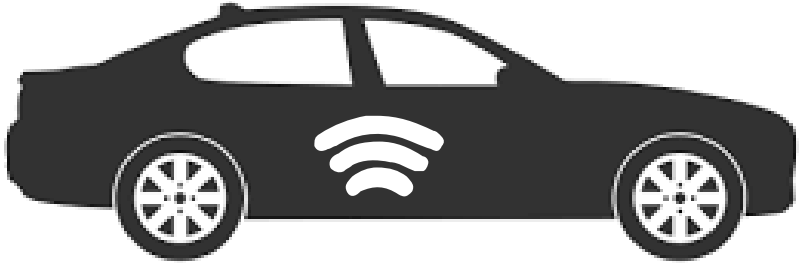
- Call & Surf — 2G/3G/4G
- Vehicle Entertainment — 4G

TELEMATICS

- Vehicle Tracking — 2G

CUSTOMER'S CAR EXPERIENCE

- Car Insurance — 3G
- Car Finder — 2G
- Car Service Diagnostic — 3G/4G

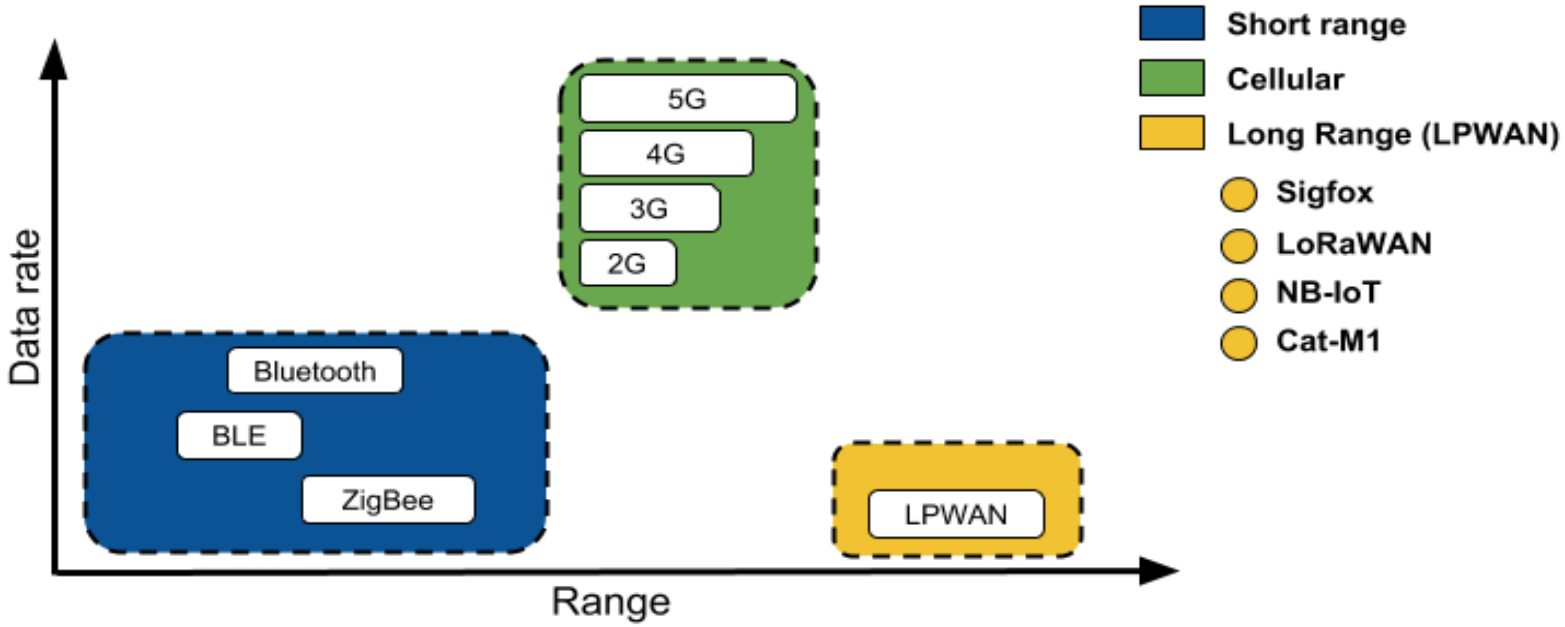


SAFETY

- eCall — 2G
- Map Update — 3G/4G
- V2X — 4G

PLUS FLOTA

ABC of Connectivity



PLUS FLOTA

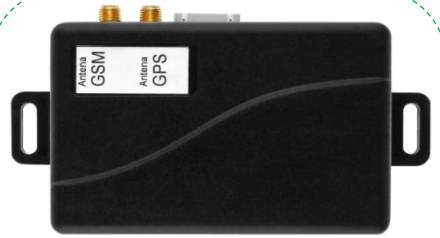
Devices

Connectivity 2G, LTE CATM1

ADAS

Peripheral devices

GPS, GNSS, Galileo



Advanced GPS Tracking & Telematics devices with connect to CAN and optional add-ons.

Smart sensor device designed for crash detection and driving behavior analysis. Fits into 12V outlet of any passenger car.

Car tracking and diagnostic devices with OBD II socket. (Plug & Play)

Compatibility with IoT

Accelerometer

Triangulation BTS

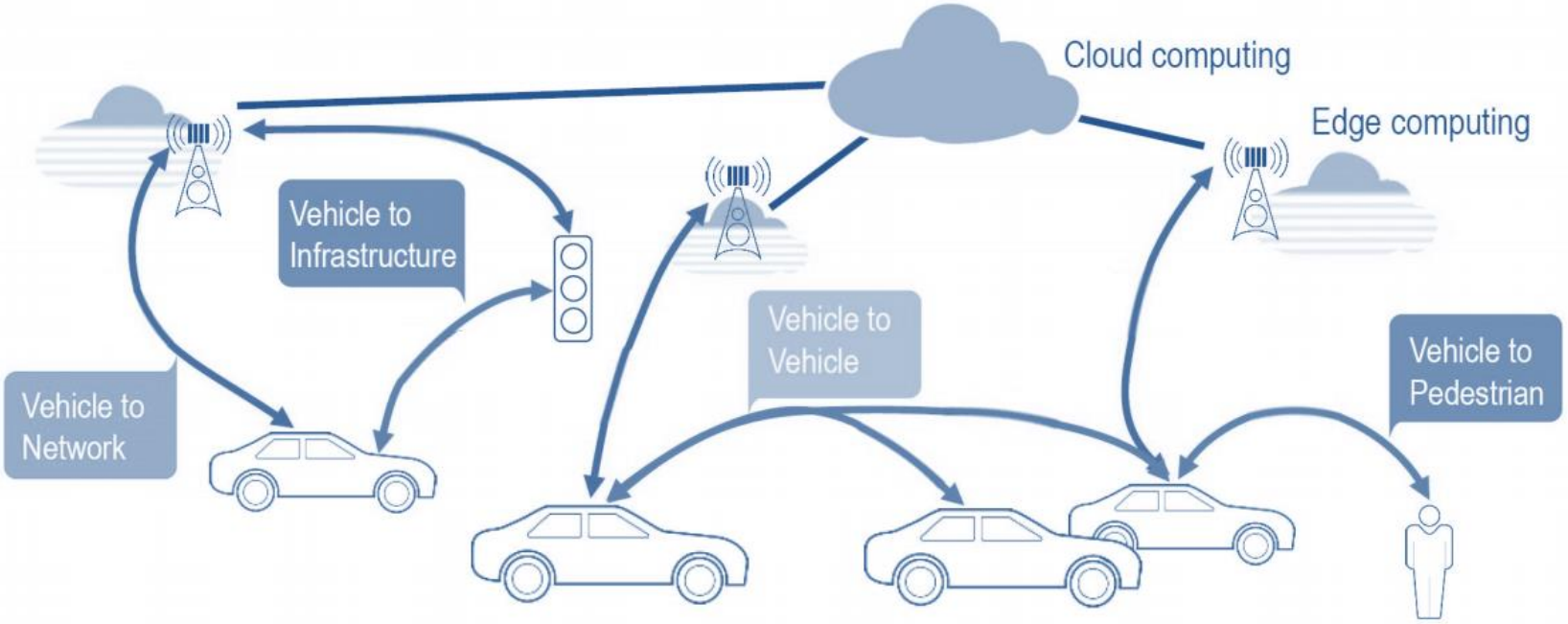
Intelligent management

PLUS FLOTA

GPS tracking

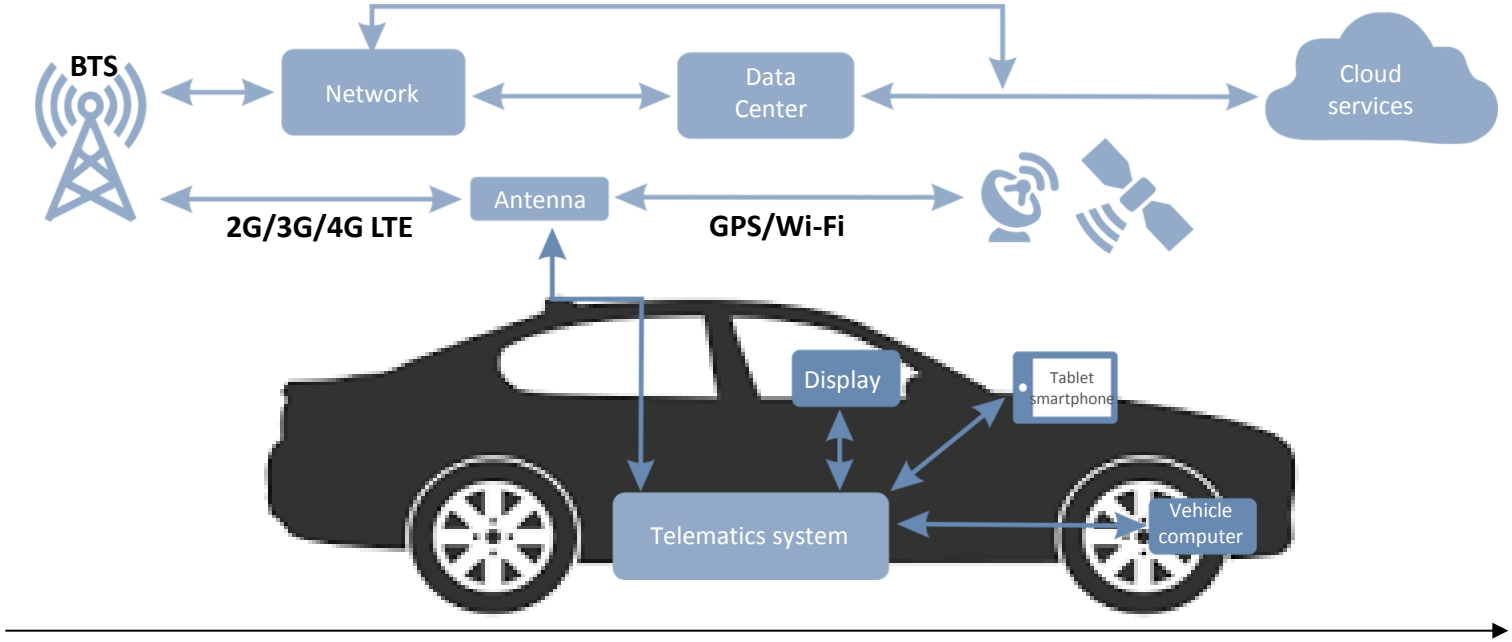
PLUS FLOTA

GPS telematics



PLUS FLOTA

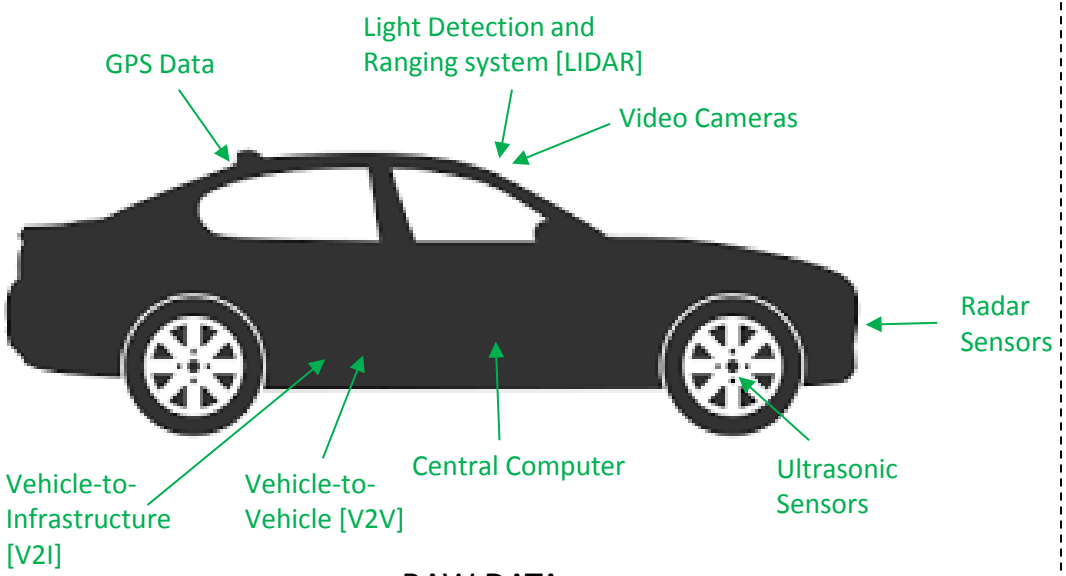
GPS telematics



BIG data, IoT and…
The new approach of fleet data analysis

PLUS FLOTA

Do you know power of data managed by you?



RAW DATA

Analytical engine:
- Machine learning
- Robotic Process Automation
- Artificial Intelligence
- Fraud Detection rules
- Data aggregation
- Drivers scoring rules

ANALISYS

Management reports:
- TCO report
- Car's service and maintenance costs per 100km
- Avg. fuel consumption report, etc.

Business value:
- Gamification App
- Fraud Management System
- Fleet cost reduction

RESULTS

The basic data collected from *'Central Computer' and GPS* allows for carrying out **80% of baseline analysis**: avg. fuel consumption report, avg. vehicle mileage, avg. speed.

New approach to the fleet data analysis

PRESENTATION LAYER

Gamification APP
- driving style analysis

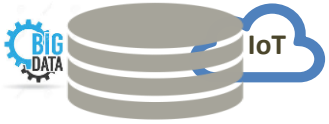
Fraud Management System
- alert module
- data visualization module – ex. SNA

Management Information System
- reporting module
- data visualization module (ex. Tableau, Power BI, MicroStrategy)

ANALYSIS LAYER
- Machine learning
- Robotic Process Automation
- Fraud Detection Rules
- Data aggregation
- Scoring

RULES ENGINE
- Telematics data analysis

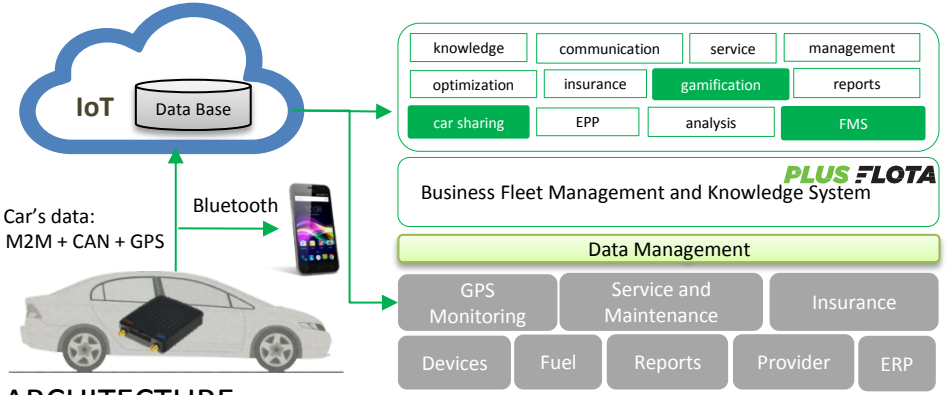
DATA LAYER



- Raw data
- Processed data

DATA SOURCES

- Unstructured data
- Web-services data
- Data Warehouse



DATA ARCHITECTURE

PLUS FLOTA

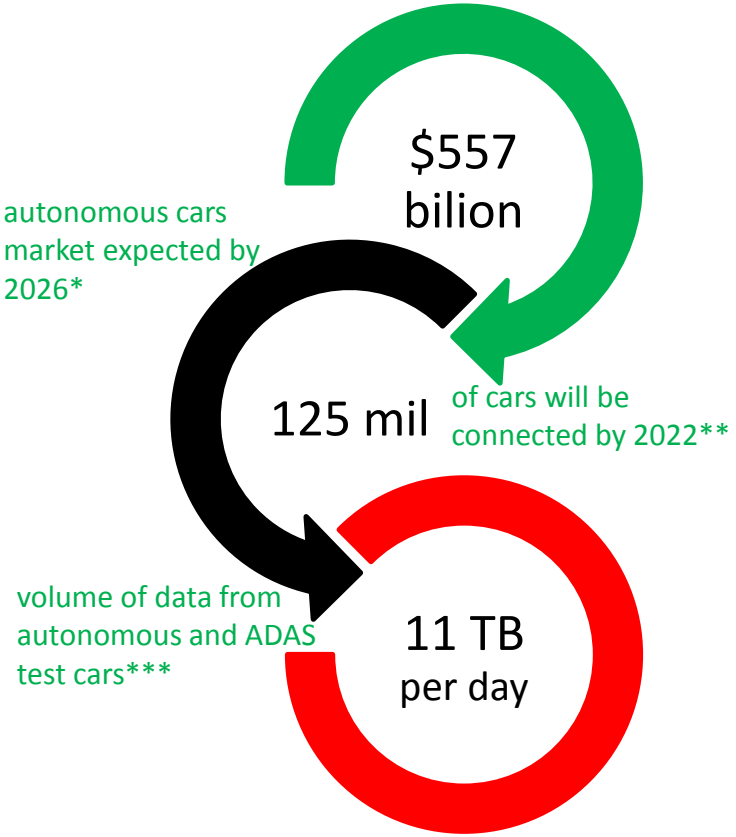
Future….

The fast rise of data volume forces companies to change the approach to data analysis. The new technology trend, open source solutions and growing spread of embedded in-vehicle connectivity technology require investment in new solutions and searching for new directions of development.

KNOW YOUR DATA = KHOW YOUR CUSTOMER

According to the forecasts, the amount of data 'produced' by cars will continue to grow, mainly due to the development of the autonomous car industry.

Data generate per second	GPS 50 KB	LIDAR ~10-100 KB
SONAR ~10-100 KB	RADAR ~10-100 KB	CAMERAS ~10-100 KB



Source:
https://www.networkworld.com/article/3147892/one-autonomous-car-will-use-4000-gb-of-dataday.html

**https://www.alliedmarketresearch.com/autonomous-vehicle-market*
***https://internetofbusiness.com/worldwide-connected-car-market-to-top-125-million-by-2022/*
**** https://www.tuxera.com/blog/autonomous-and-adas-test-cars-produce-over-11-tb-of-data-per-day/*

Thank you!
PLUS FLOTA