DIGITAL TECHNOLOGIES IN WASTE MANAGEMENT
MODERNIZATION IN RUSSIAN FEDERATION
WASTE MANAGEMENT IN RUSSIAN FEDERATION

- 146 mil. people
- 8 mil. legal entities & self-employed
- 60 bil. tones of waste accumulated already
- 5 bil. tones of waste produced every year
- 71 mil. tones of municipal solid waste produced every year
- 20 th. garbage trucks
- 2 mil. dumpsters
- 340 bil. a year municipal waste industry revenue

GUIDELINES

- Waste treatment
- Implementing modern technologies
- Bringing down cumulative damage
- Old landfills recultivation

ACHEIVED RESULTS

- 1000 new infrastructure objects
- 24 bil. a year saving
- $ 420 mil. € 340 mil.

PLANNED RESULTS

- 52 bil. a year saving
- $ 910 mil. € 736 mil.
Modelling and prognosis

- Defining type and characteristics of infrastructure objects in need via computation. Economic necessity of building new infrastructure objects
- Computing costs including investments into building new infrastructure objects. Automatic rates computation for regional waste management operators
- Planning investments into building new infrastructure objects. Investment input into rate assessment
- Making forecasts for 20 years and more. Capacity deficiency prognosis for infrastructure objects. Capacity shortage prognosis
- Creating and comparing as many territorial scheme variants as needed
- Taking into account both macroeconomic and regional characteristics and special features
- Computing logistics for waste transportation including railway routes. Cutting transportation costs for 25%
- Making optimal routes with up to 4 links. Providing optimal load for infrastructure objects
- Integration with FTA, FSSS, GIS “Housing and utilities”, Yandex, Google, etc.
- Gathering all necessary paperwork and forms from waste producers. Whole scope of solid municipal waste produce assessment. Data verification
- Determining environmental damage limits. Systemizing authorization documents
- Detection of environmental regulations violations. Automation of all supervisory activities

Real-time managing

- Automatic forming and updating waste producers data base
- Integration with Federal Tax Service System
- Sending out formal offers and signing contracts
- Billing and finance processing
- Planning and tracking routes. Remote shutting down the engine in case of route violation. Adding new route points in real time
- Mobile app for vehicle drivers. Taking pictures of a dumpster before and after emptying it
- Mobile app for illegal dumps detection. Further supervision of the situation including the growing or cleaning of the dump
- Integration with weight checking stations and surveillance cameras
- Integration with existing accounting systems
- Installing RFID devices into garbage cans to track activity
- Connecting up vehicle trackers (GLONASS/ GPS) with a possibility to install surveillance cameras on vehicles

Unified Information Framework

- Reports, analytics, theories verification
- External systems integration bus
Electronic models
necessary functions

- Computing logistics for waste transporting
- Computing costs including investments into building new infrastructure objects
- Creating and comparing as many territorial scheme variants as needed
- “Public hearings” feature
- Integration with FTA, FSSS, GIS “Housing and utilities”, Yandex, Google, etc.
- Automatic control over regional waste management operators
API
Integration with FTA, FSSS, GIS “Housing and utilities”, Yandex, Google, etc.

Whole scope of solid municipal waste produce assessment

Data verification
Computing logistics for waste transportation

Making optimal routes with up to 4 links

Providing optimal load for infrastructure objects

Saving up to 25% in cost for transportation

Average NGP for RF territorial entities: 3 bil. rubles a year

Transportation costs: 30% of NGP

Saving: 250 mil. rubles a year

Absolute value of cutting the rate: 21 ruble a month per person
Analyzing locations for building new infrastructure objects

- Economic necessity of building new infrastructure objects
- Defining type and characteristics of infrastructure objects in need via computation
- Capacity shortage prognosis
- Investment input into rate assessment
Including investments into building new infrastructure objects

Automatic rates computation for regional waste management operator

Including operating costs

Taking into account both macroeconomic and regional characteristics and special features
Dividing RF territorial entity into zones of responsibility for few regional waste management operators

Minimizing waste transportation between zones

Risk reduction during transfer to the new waste management system

Making all zones equally appealing to the investors
Making forecasts for 20 years and more

Regional program

Forecasting of landfills overfill

Planning investments for building new infrastructure objects
Automatic forming and updating waste producers database

Integration with Federal Tax Service System

Sending out formal offers and signing contracts

Billing and finance processing

Planning and tracking routes

Mobile app for garbage truck drivers

Integration with weight checking stations and surveillance cameras

Integration with existing accounting systems

Integration with Postal Service and GIS “Housing and Utilities”

Installing our own RFID devices into garbage cans to track activity

Connecting up vehicle trackers (GLONASS/ GPS) with a possibility to install surveillance cameras on vehicles