OUR COMPANY

INVESTOR
PRESENTATION

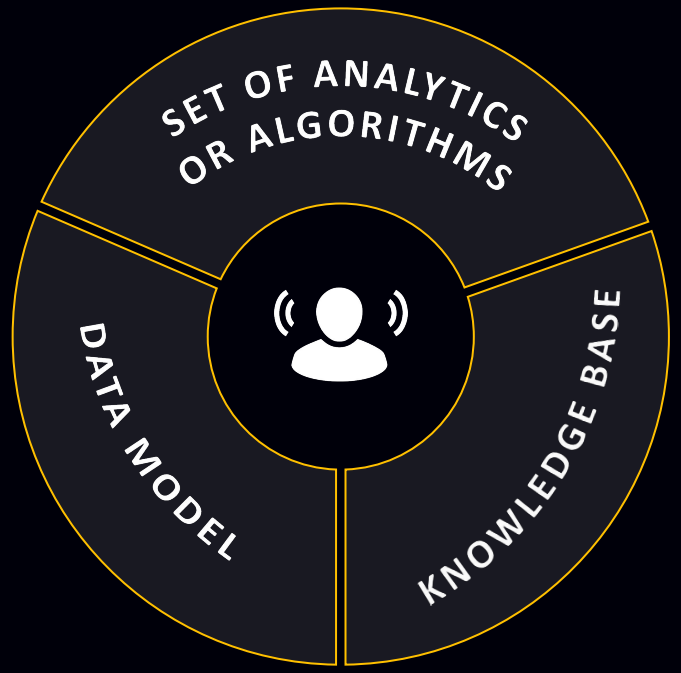
DIGITAL TWIN

The massive and rapid digital transformation of companies in the next few years is predicted for all sectors of the economy. This will lead to a change of the business model, increase productivity and the emergence of new roles.

DIGITAL TWINS - digital replicas of the physical assets and processes used to understand, predict and optimize production performance.

Business and technology trends are forcing clients to rethink their view on production efficiency expecting following benefits from digital twin concept:

- Managing assets in real time
- Greater business continuity, equipment downtime reduction through advanced maintenance and monitoring
- Cutting maintenance costs
- Improving product and production system efficiency
- Enhanced productivity through optimization based on data



Business decisions based on actual view on production state

Up to USD ~1 million savings per hour for large industrial companies

PRODUCT OVERVIEW

MAKE
DIGITAL
SIMPLE

We provide innovative experiences to make your assets digital, smart and manageble via simple touch

Next generation
DIGITAL TWIN PLATFORM

SMART. SIMPLE.VISIBLE

- Ease of use through innovative UI
- Smart services based on AI, LoT and Big data
- All information in a single place in real time

CONTEXT

DIGITAL WORLD PROVIDES HUGE OPPORTUNITIES. BUT ITS ALL COMPLEX, TECHNICIAN AND FRUSTRATING

Current market is represented with a number of complex technical platforms to use and benefit from digital technologies (Predix, Mindshpere, niche players)

Plant

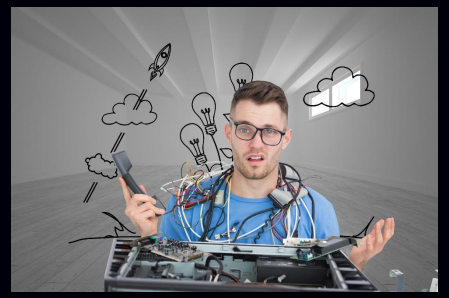
Mining, oil, construction fileds

Manufacturing

City infrastructure

Digital technologies

Good for IT people but frustrating for users and executives



Shift the paradigm!

New digital era needs intuitive tools to make digital simple and exciting even for conservative industries

With digital your assets should be on your palm

Next generation

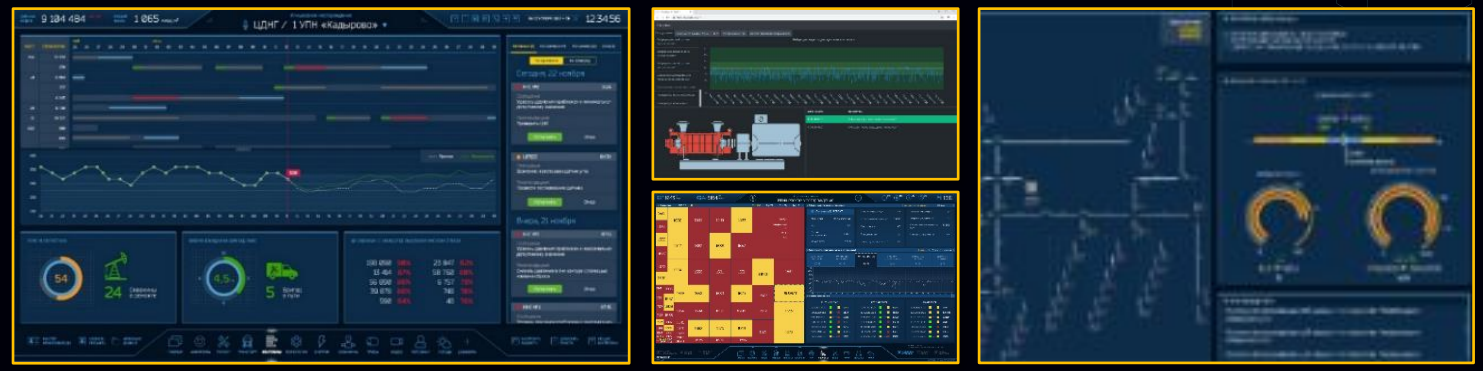
DIGITAL TWIN PLATFORM

OVERVIEW

SMART

Next generation
DIGITAL TWIN PLATFORM

- Digital twins & models
- Big data solutions
- Computer vision
- Artificial intelligence
- Imitation modelling and optimization
- Predictive analytics



Digital twin core

Smart services to leverage industry 4.0 capabilities

AI

Machine learning

Optimization

Simulation

Big data

USE CASES:
Predictive maintenance, Online ML based optimization, Integrated planning

OVERVIEW

SIMPLE

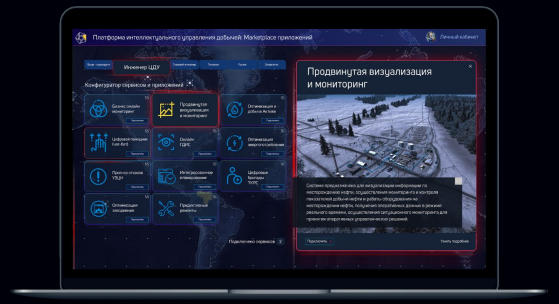
Next generation
DIGITAL TWIN PLATFORM

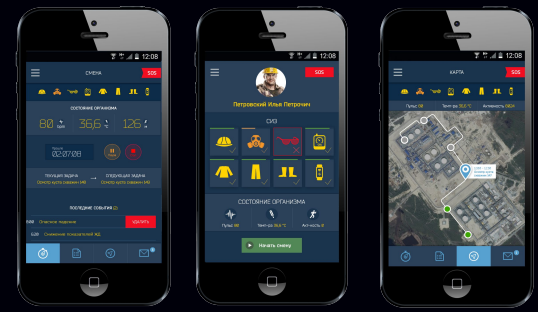
Innovative and intuitive UX

- You access all the needed information from your device in a single touch

Single solution paradigm

- We integrate and represent data about all your assets, staff and events in a single solution
- We put the solution on top your legacy technical applications





USE CASES:

Plant in a tablet, Digital oilfield, Smart city

- 3D visualization
- AR \ VR
- Object repository
- Geographic information system
- BI / Advanced dashboards

OVERVIEW

VISIBLE

Next generation
DIGITAL TWIN PLATFORM

Realistic objects

- You manage your assets in virtual world like they are real.
- The «touch effect» engages people to drive all the digital agenda and generate new ideas

Real time enterprise

- 3D models are enriched with real time data from devices, smart apps and legacy systems

Data factory layer

- Provisioning, Management & Monitoring
- Unified data access
- ETL & Dataflow management tools
- Data storages (Relational, Key-Value, Timeseries, Blobs)
- Batch & Streaming processing
- Security
- Machine learning

USE CASES:

HSE (workforce monitoring), Plant in a tablet, Digital oilfield)

PRODUCT STRATEGY

We are going to start with enterprise on premise solutions and migrate to SMB and SAAS business model

Enterprises

- Select early solution adopters, create required platform foundation with implementation on selected use cases. Show feasible and visible results to the business and market. Use clients as a rocket lab for further development of product core.

2020 – 2021
2-3 clients

Set up and market capture

2022 +

Product core & custom digital services

Enterprise market penetration

On premise custom solution

On premise custom solution

On premise custom solution

On premise custom solution

On premise custom solution

Technical core
Industrial use cases

Small medium business

- Transform product for SMB segment in production / manufacturing area with focus on light cloud based solution provided on subscription with customization option services.

2022 +

Return of investments

Product adoption for SMB

Cloud based SaaS platform services for SMB. Industry specific bundles.

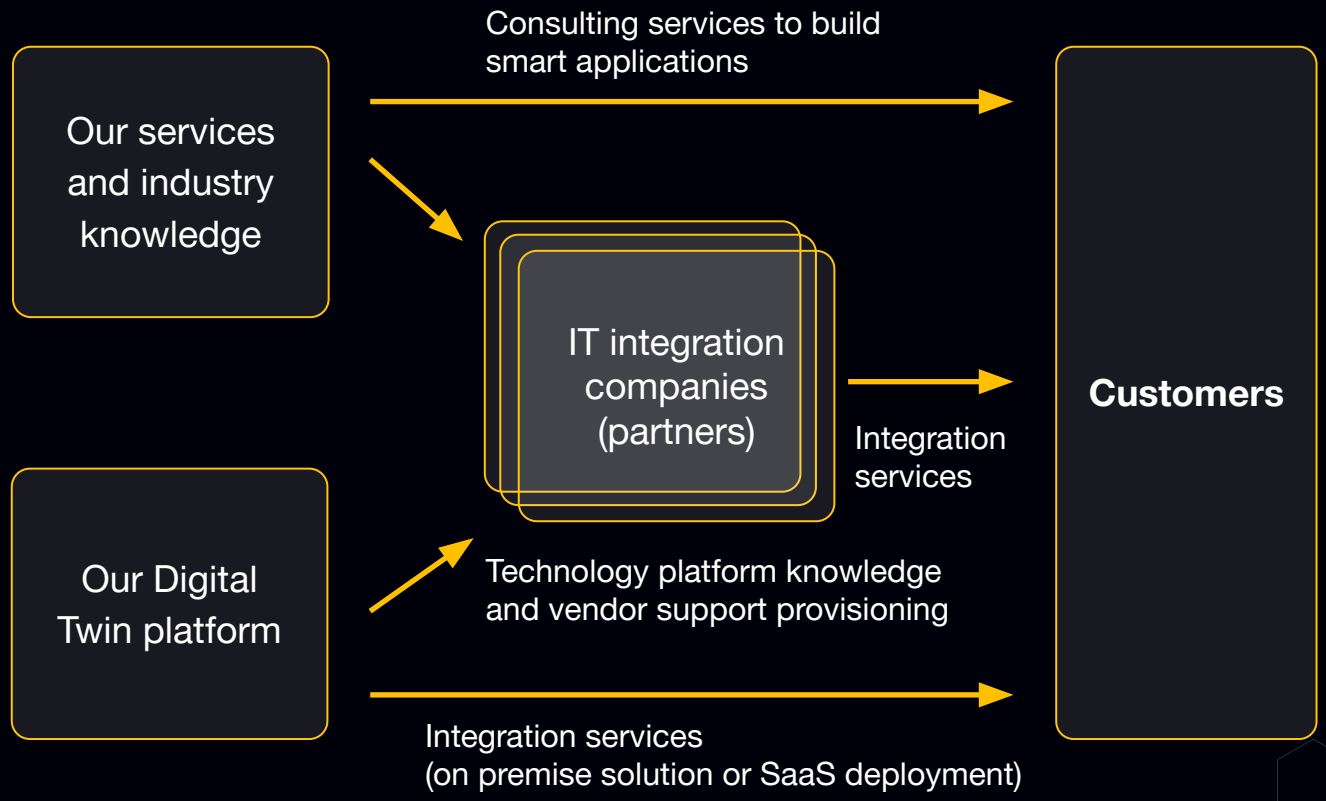
OUR TEAM AND BUSINESS MODEL

Our team is built from top industry and its experts with proven market background

- Management team
- Industry experts and product owners
- IT architects
- Data scientists
- Developers

- Unique IT capabilities and expertise
- Deep oil and gas industry knowledge
- IT and digital innovation executive roles background
- Top IT consulting companies background

Our business model assumes both direct consulting and deployment services as well as working through technology partners



PRODUCT DETAILS

PRODUCT ARCHITECTURE

Using our experience we have developed a new platform for creating digital twins (MVP version). This platform is comprised of three key components: data acquisition and processing system, data storage and analysis system and advanced visualization system.

ADVANCED VISUALIZATION PLATFORM

- 3D VISUALIZATION
- GEOGRAPHIC INFORMATION SYSTEM
- OBJECT REPOSITORY
- AR/VR
- BI/ ADVANCED DASHBOARDS

SMART SERVICES PLATFORM

- AI
- MACHINE LEARNING
- OPTIMIZATION
- SIMULATION
- BIG DATA

DATA FACTORY PLATFORM

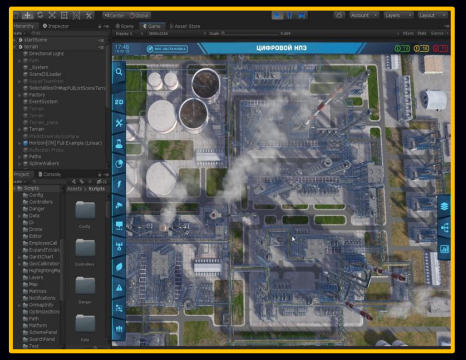
- ETL & DATAFLOW MANAGEMENT TOOLS
- BATCH & STREAMING PROCESSING
- UNIFIED DATA ACCESS
- MACHINE LEARNING
- PROVISIONING, MANAGMENT & MONITORING
- SECURITY
- DATA STORAGES (RELATIONAL, KEY-VALUE, TIMESERIES, BLOBS)

TECHNOLOGY. PART 1

ADVANCED VISUALIZATION PLATFORM

Based on Unity3D engine

To remain competitive in the future, businesses of all scales will likely need to incorporate the use of data visualization methods. Based on a powerful game engine our visualization platform is used for advanced real-time 3d graphics rendering of a digital twin. We believe that a game-like design will make a more efficient user experience and interaction.





Key benefits

- Speed up the decision making and do faster action
- Optimize productivity with visual access
- Improve product quality
- Understand connections between operation and results
- Interact with data
- Visualization tools show insights that may be missed in traditional reports

Technical features

- Data visualization in context
- Team collaboration
- Multiplatform and multiscale
- High-performance real-time rendering
- Large scale and detailed environments support
- Using CAD, 3D laser scanning and photogrammetry technologies to automate the digital twin creation
- Using drag and drop constructor to create digital twin environment and map assets to the data
- Unified 3D-models storage to simplify change management
- BI-widgets and advanced reporting
- VR and AR visualization tools for various business cases

TECHNOLOGY. PART 2

TECHNOLOGIES USING TO CREATE ADVANCED VISUALIZATION

Laser scanners and photogrammetry technology to create 3D models of the real assets

A built-in easy to use Digital Twin composer to create a precise copy of the environment with geoid model support

Common 3D models storage to simplify twins data and models update

High-performance 3D rendering engine to create like the realistic 3D and superior user experience

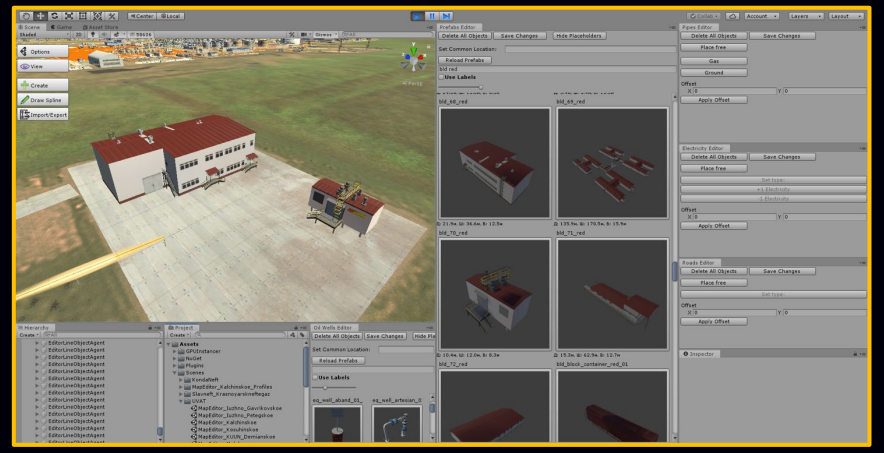
Business intelligence and dashboards, predictive analytics

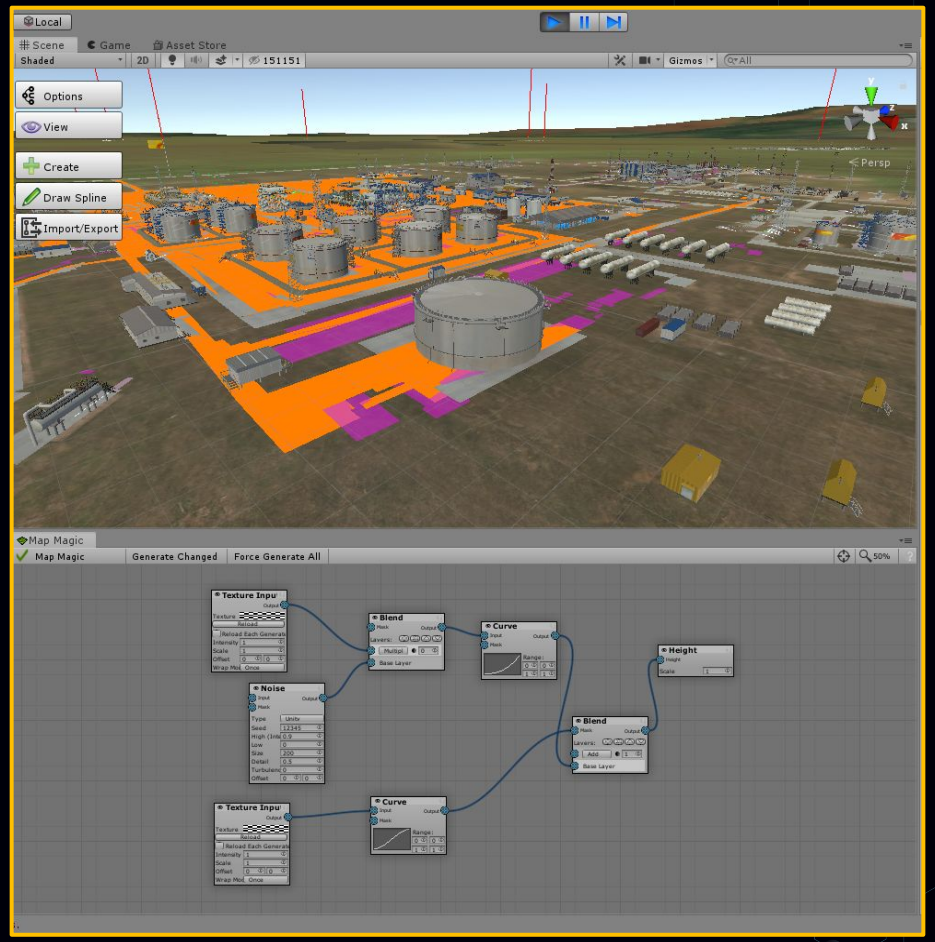
Virtual and augmented reality interfaces beside a common pc and tablets.

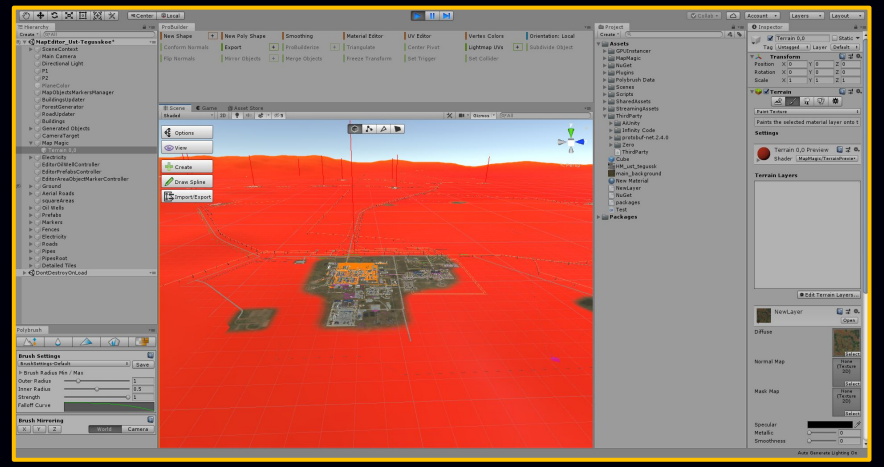
TECHNOLOGY. PART 3

BUILT-IN EASY TO USE DIGITAL TWIN COMPOSER TOOLS

- 3D asset model library;
- Environment editor;
- Large scale maps;
- GEOID model support;
- Interactable objects mapper;
- Trees and vegetation;
- Roads, pipelines, cable lines;
- Weather conditions;







TECHNOLOGY. PART 4

DATA FACTORY

Complete enterprise ready data platform based on big data technologies Apache Hadoop Ecosystem

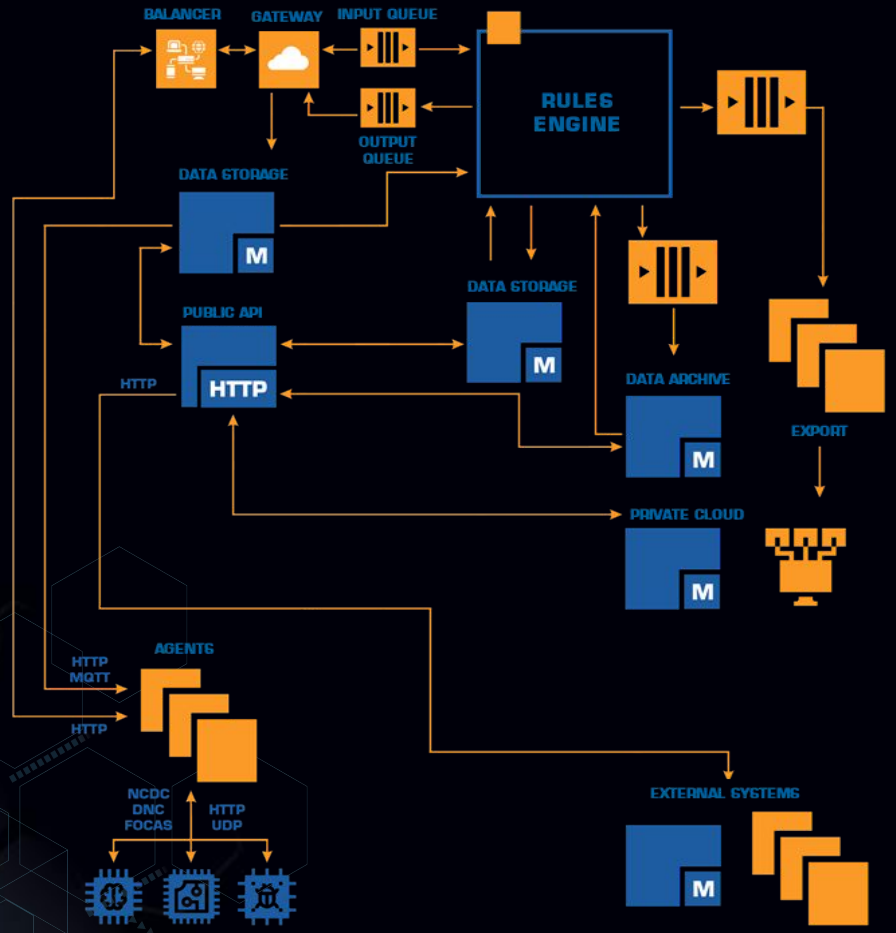
- Easy to deploy and integrate;
- Predefined templates for different scenarios;
- Unified data access;
- Heterogeneous data storage;
- Data Quality service;
- Real-time analytics, ML, Predictive;
- Covers lots of enterprise needs;

We plan make Big Data technologies friendly and effective for customers

TECHNOLOGY. PART 5

HIGH PERFORMANCE DATA ENGINE

Scalable solution for data acquisition, processing, storage and integration

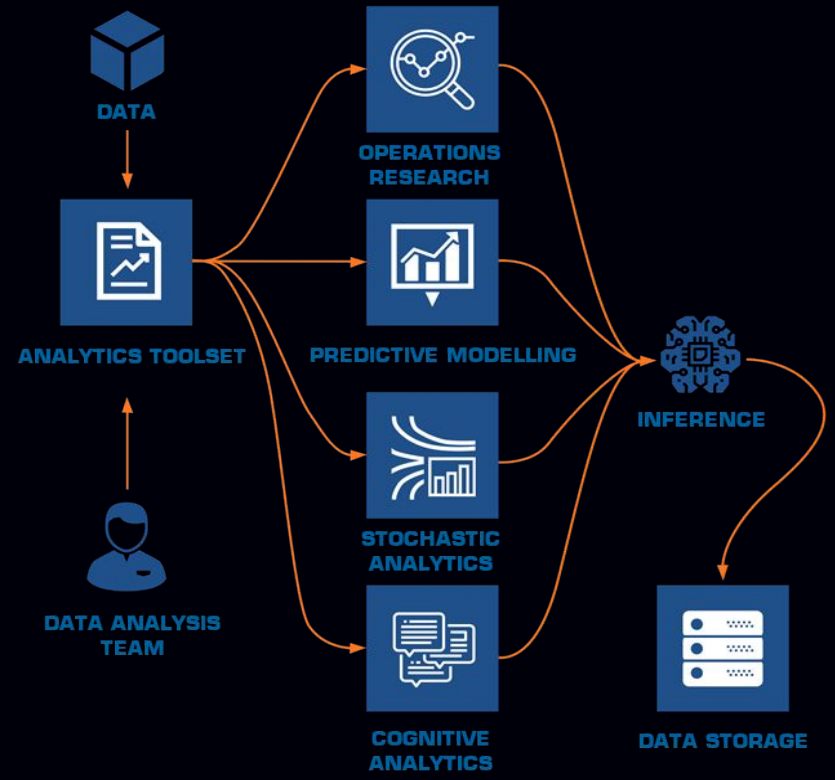


REAL TIME ANALYTICS AND MACHINE LEARNING

Data analytics tool for identification of patterns and features

Streaming analytics tool for predictive analysis of incoming data set

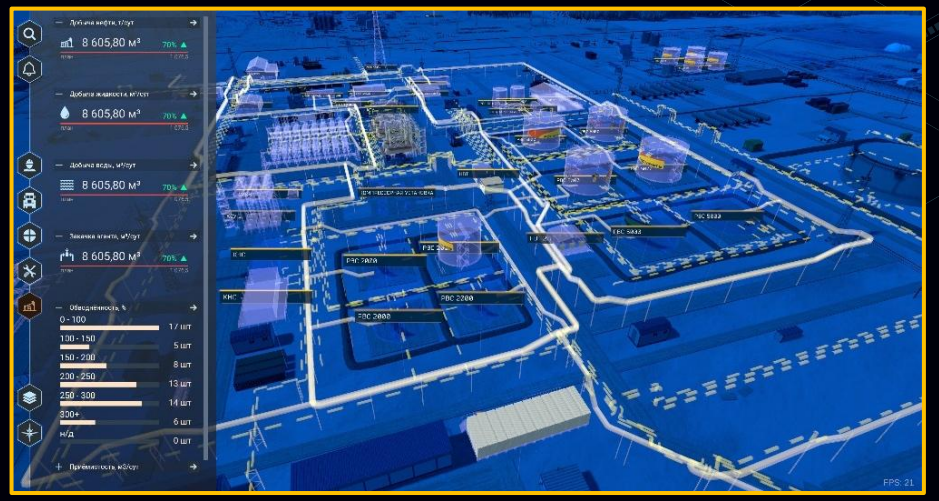
Advanced open-source technologies: Spark Streaming, Apache Mahout, TensorFlow, Keras, SciLearn

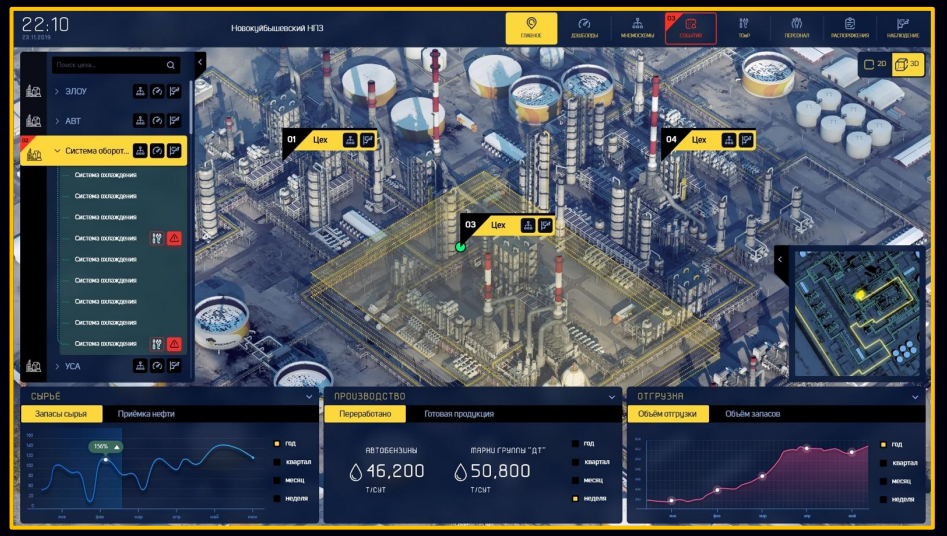


TECHNOLOGY. PART 6

Platform Digital Twin applications development Studio

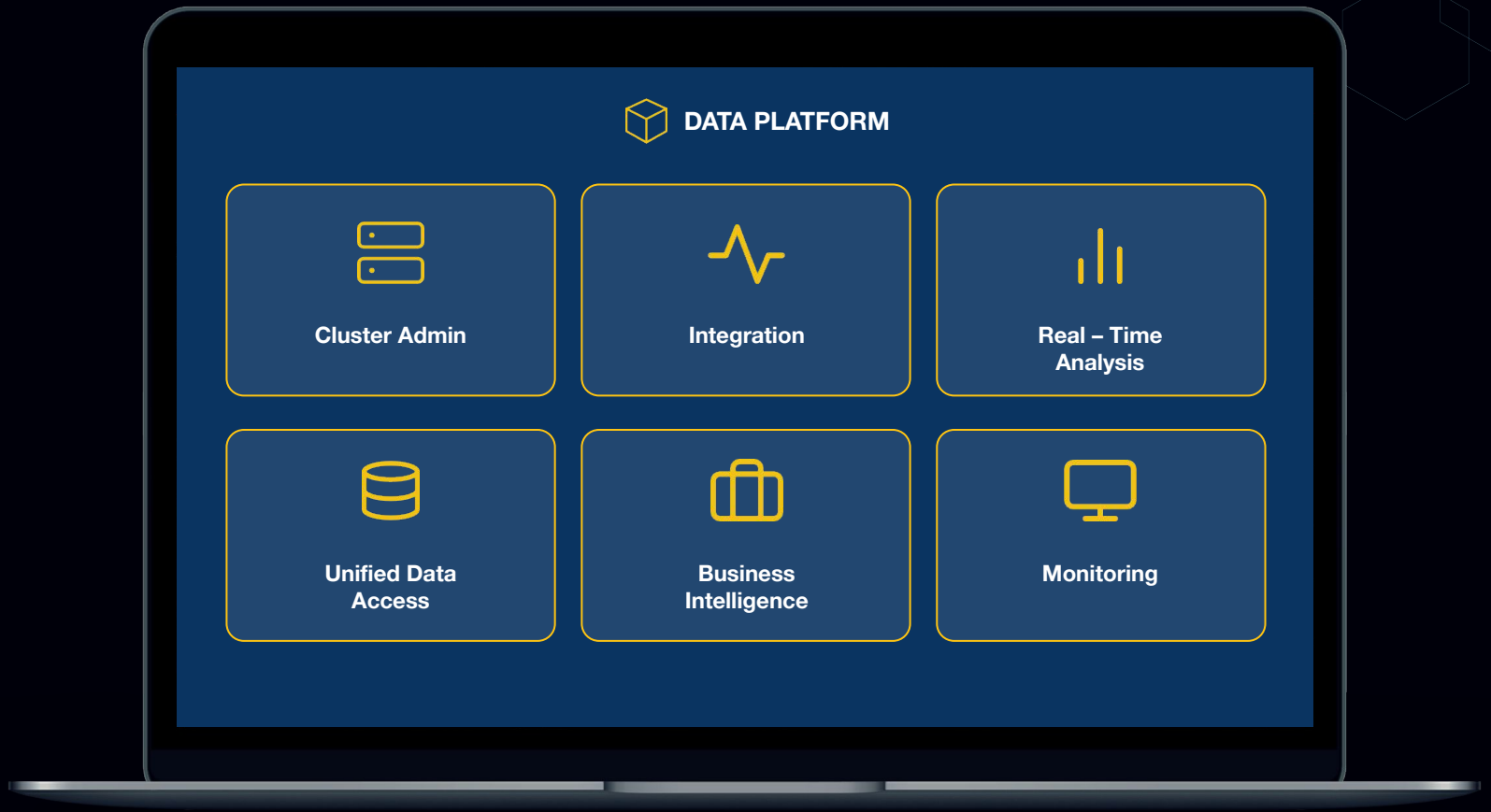
- Entity component system
- GUI-controls
- Camera manager
- Widgets
- Data services





TECHNOLOGY. PART 7

Self-service management portal for all platform components and ready to use applications marketplace

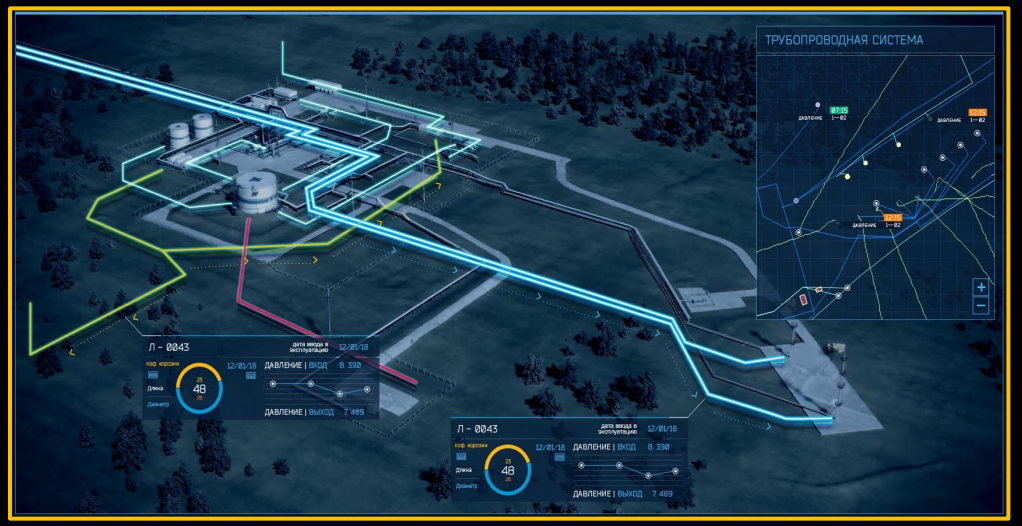


USE CASES & DEMOS

USE CASE: DIGITAL OILFIELD

Integrated solution for the oilfield online control, planning and analytics

- 3D-visualization of an Asset map of the region where oil and gas;
- 3D visualization of the general scene of the field: bushes, wells, pipelines, roads, power lines, production facilities, dynamic objects: transport, people;
- Production and economic dashboards, analytics and KPI:
  - plan/ actual production,
  - well profitability,
  - number of repairs,
  - the number of employees and etc.
- The mechanism of event notification: accident, equipment, events, transport, personnel, predictive and etc;
- The ability to view attribute/parameter values of any object, personnel, equipment in real time or close to real time;
- Personnel and transport online monitoring;
- Integrated planning and optimization;
- Computer vision;



Predictive alerting

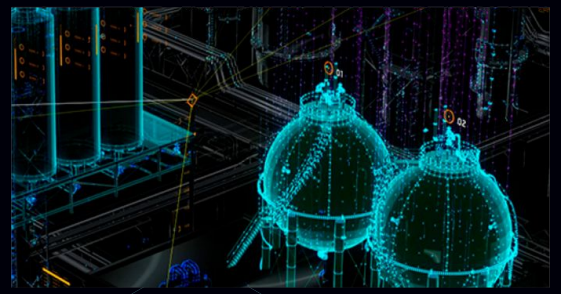
Designation and technological parameters of the equipment in real time, its technical condition

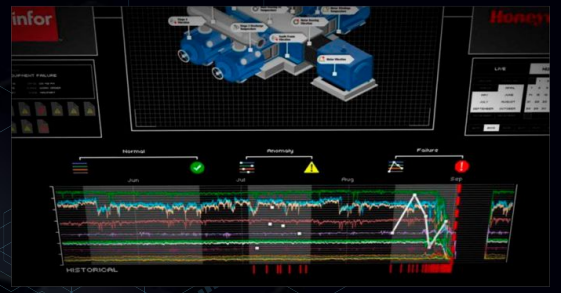
Identification of the registered personnel location. Employee's card (widget)

Identification of the registered vehicle location. Vehicle's card (widget)

USE CASE: DIGITAL PLANT

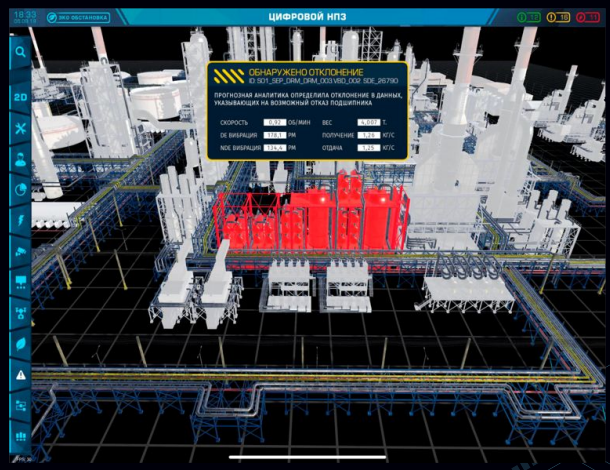
Digital Plant is a software complex managing a real-world factory model as well as all its production processes and technological and business performance indicators.





BUSINESS AND TECHNOLOGICAL SYSTEMS
MES ERP SCADA HSE REPORTING ECM

- real-time production quality control
- business case parameters simulation
- efficiency improvement
- resources usage efficiency
- profits and losses optimization
- enviroment control and safety
- prodictive reliability managent
- efficient equipment load

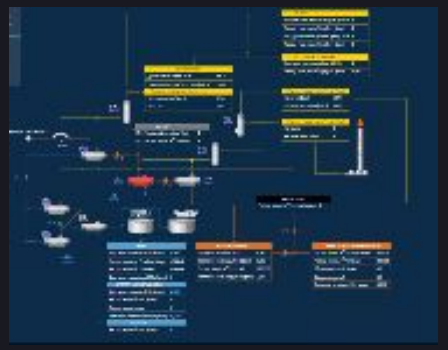


USE CASE: OIL WELL AI - OPTIMIZATION

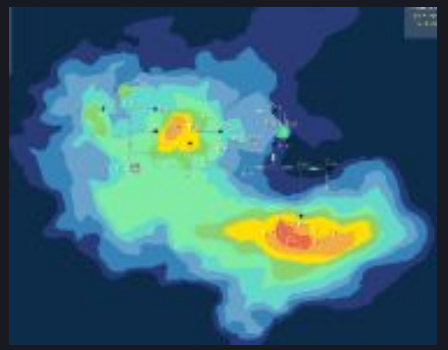
DIGITAL TWIN

an integrated oil & gas filed model based on ML

Well / Pump / Pipeline

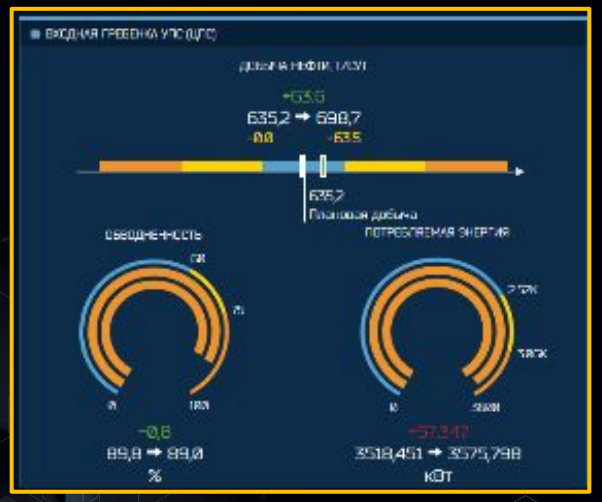


Preparation



Reservoir

Economic model / Integrated solution



Potential oil production increase based on the technological mode data

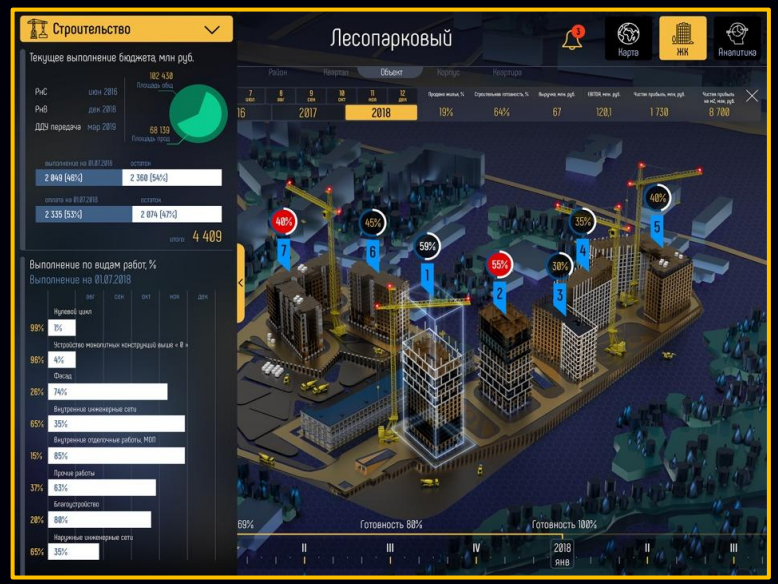
Around 10% or 63.6 t/day (from 635.2 t/day)

Real-time calculation accuracy based on the sensors data

Deviation less than 3% or 0.3 atm.

USE CASE: SMART CITY

Smart City is a software solution visualizing a model of a real city in 3D. This software helps you to make long-term planning and decision making, monitor city traffic, rapidly react on the incidents, monitor housing development, analyze demographic situation and plan city infrastructure, monitor main city KPIs.



PRODUCT DEVELOPMENT PLAN

At moment we have successfully tested MVP in several production cases.

4q 2019 | 1q 2020 | 2q 2020 | 3q 2020 | 4q 2020 | 1q 2021 | 2q 2021 | 3q 2021 | 4q 2021 | 2022 | 2023

MVP ready

- Digital Twin application studio
- 3D environment and Digital Twin composer
- 3D models repository
- Data Flow management and Integration tools
- Machine Learning Services
- Data Lineage
- Data quality
- Pretrained ML models
- Unified API for external application and services
- Predefined deployment and integration templates
- Self-service BI and ML tools for analytics
- Centralized orchestration and monitoring tools
- Offline self-contained deployment
- Kubernetes autoscaling cluster
- Core Platform Services

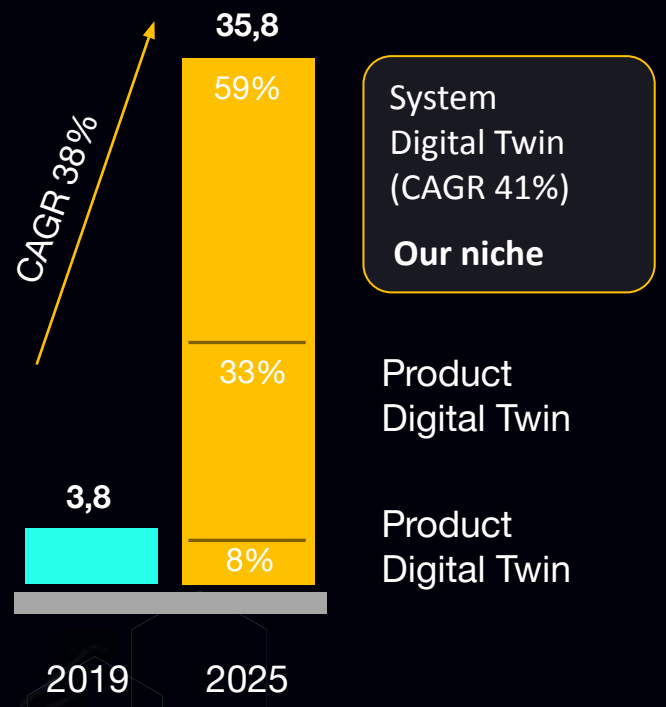
Pilot projects and global market expansion strategy

Product ready

* Roadmap above represents high level development strategy

DIGITAL TWIN MARKET

MARKET SIZE (USD BILLION)



INFLUENCING FACTORS

Drivers

- Declining time and cost of product development and unplanned downtime with adoption of digital twin
- Increasing adoption of emerging technologies such as IoT and cloud
- Growing use of digital twin for predictive maintenance

Challenges & Restraints

- Risks associated with data security due to the use of IoT and cloud platforms
- Lack of awareness regarding cost benefits of digital twin adoption
- Lack or expensiveness of skilled workforce and technical knowledge

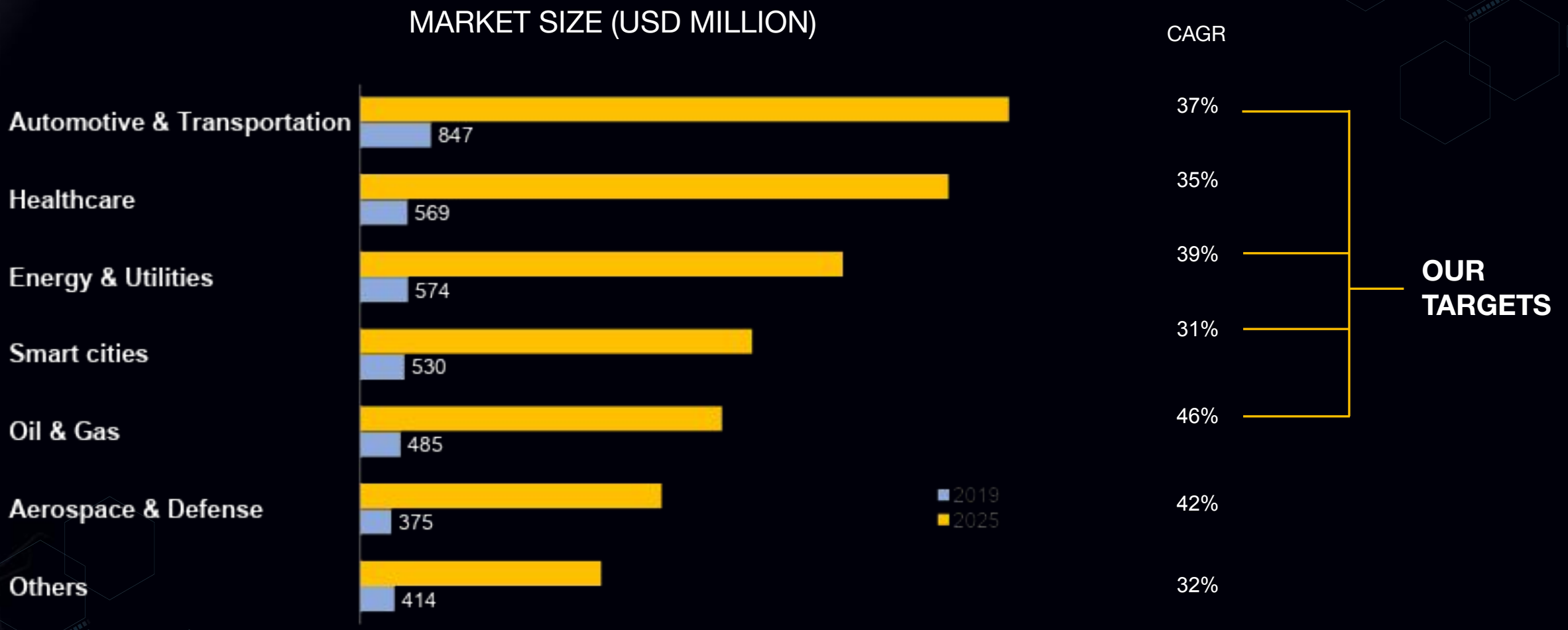
Opportunities

- Promising growth of digital twin technology in industries such as aerospace and automotive
- Increasing adoption of Industry 4.0 and IIoT

DIGITAL TWINS MARKET HAS ATTRACTIVE GROWTH OPPORTUNITIES

Source: MarketsandMarkets

DIGITAL TWIN MARKET BY INDUSTRY



WE PLAN TO FOCUS ON FAST-GROWING SEGMENTS ACCORDINGLY WITH OUR EXPERTISE

Source: MarketsandMarkets

VALUE-CHAIN ANALYSIS

	1	2	3	4
Value-add	0 to 10%	10 to 35%	35 to 80%	80 to 100%
Margins	10%	25%	**45%**	20%
Life-cycle Stages	Research, Design, and Development	Original Equipment Manufacturer	Solution/ Service/ Software Provider	End user
	• R&D of various sensors • R&D of digital twin solutions and services	• Manufacturers of sensors	• Cloud/Server providers • Analytics platform providers • Simulation platform providers	• Energy & utilities • Oil & gas • Aerospace & defense • Automotive & transportation • Home & commercial • Healthcare

WE PLAY IN THE MOST PROFITABLE SEGMENT OF THE VALUE-CHAIN

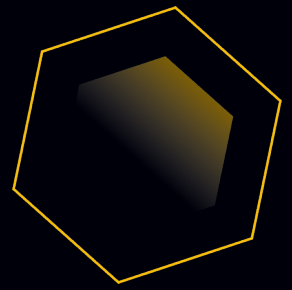
Source: MarketsandMarkets

COMPETITORS

Our competitive advantages:

- Experienced founders
- Strong R&D team
- Full technology stack (3D, big data, IoT, AI/ML, AR/VR, blockchain)
- Open architecture (“Lego”-model), crossplatform
- Ready MVP and the experience of realization of such products
- An unusual visualization system, unlike other competitors UX, rendering complex scenes
- Powerful data collection and processing system
- Growing project portfolio
- Access to world-class industry experts
- Low costs and tax reliefs

OUR R&D ROADMAP & BUSINESS ACUMEN WILL LEAD US TO NEW CHANGELING GOALS



THANK YOU