OUR COMPANY

INVESTOR
PRESENTATION
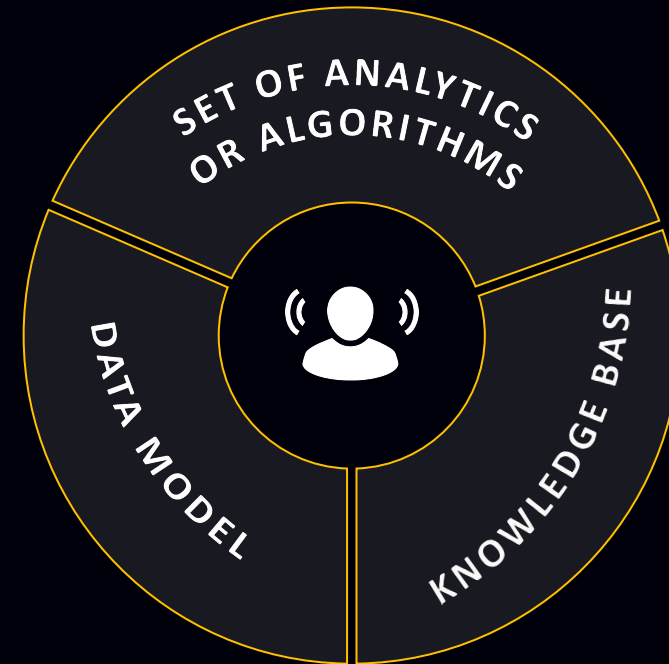
*MAKE DIGITAL
SIMPLE*

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

SET OF ANALYTICS OR ALGORITHMS

DATA MODEL

KNOWLEDGE BASE

Business decisions based on actual view on production state

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

PRODUCT OVERVIEW

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

4

OVERVIEW

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

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

Next generation
DIGITAL TWIN PLATFORM

Digital twin core
Smart services to leverage industry 4.0 capabilities

- AI
- Machine learning
- Optimization
- Simulation
- Big data

Next generation
DIGITAL TWIN PLATFORM

Innovative and intuitive UX

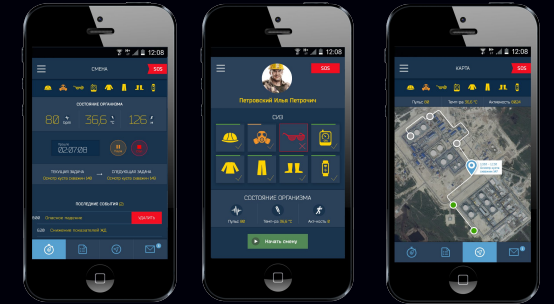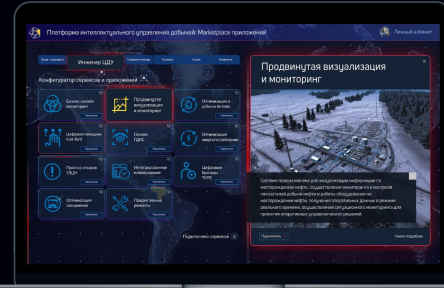- You access all the needed information from your device in a single touch

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

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

USE CASES:

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

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

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

Product core & custom digital services

On premise custom solution

On premise custom solution

On premise custom solution

2022 +

Enterprise market penetration

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.

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OUR TEAM AND BUSINESS MODEL

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

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

Management team

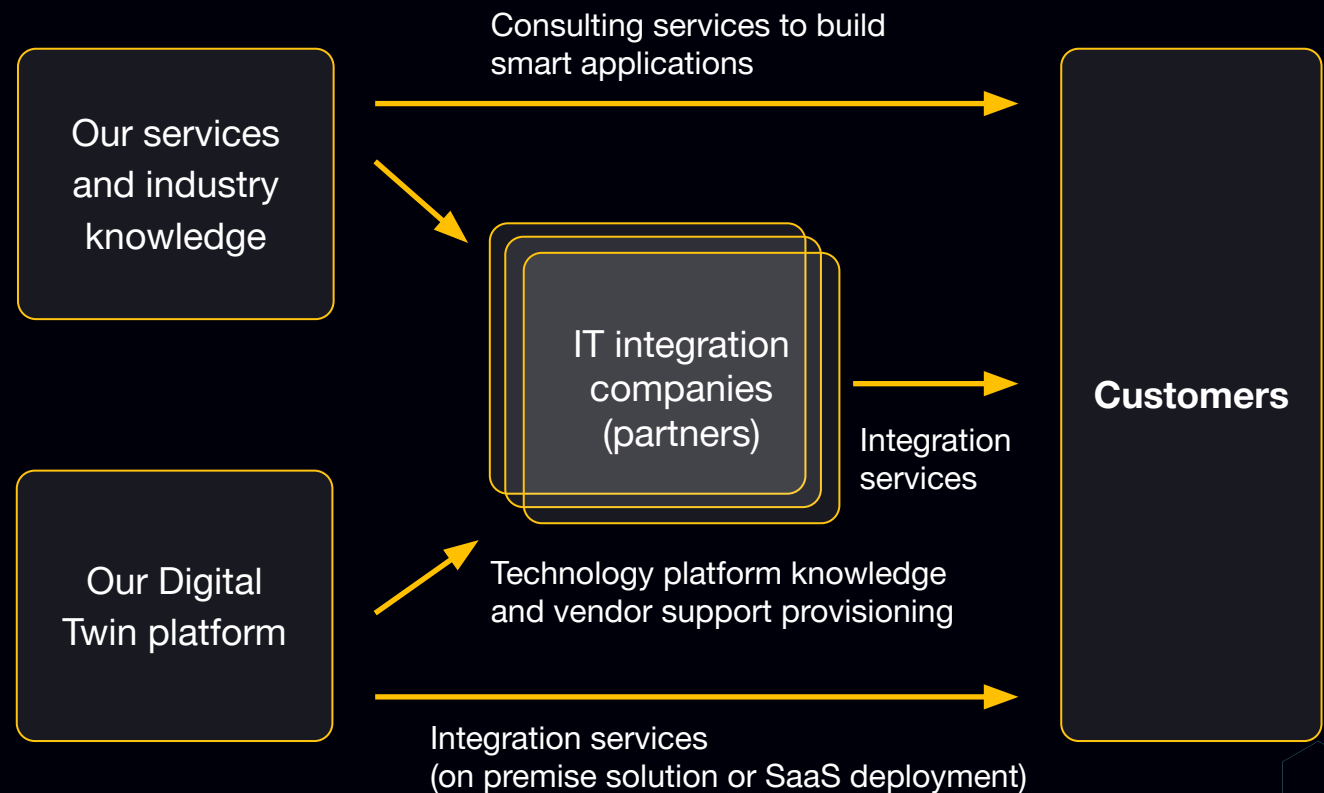Industry experts and product owners

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 services and industry knowledge

Our Digital Twin platform

Consulting services to build smart applications

IT integration companies (partners)

Integration services

Technology platform knowledge and vendor support provisioning

Integration services (on premise solution or SaaS deployment)

Customers

PRODUCT DETAILS

MAKE

DIGITAL

SIMPLE

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.

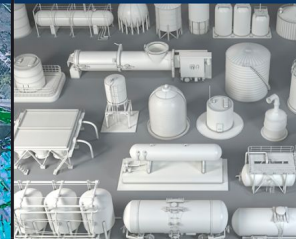|	3D VISUALIZATION	GEOGRAPHIC INFORMATION SYSTEM	OBJECT REPOSITORY	AR/VR	BI/ ADVANCED DASHBOARDS
ADVANCED VISUALIZATION PLATFORM					
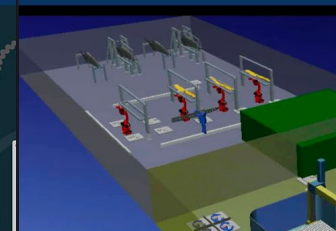
	AI	MACHINE LEARNING	OPTIMIZATION	SIMULATION	BIG DATA
SMART SERVICES PLATFORM					

	ETL & DATAFLOW MANAGEMENT TOOLS	BATCH & STREAMING PROCESSING	UNIFIED DATA ACCESS	PROVISIONING, MANAGMENT & MONITORING
DATA FACTORY PLATFORM			MACHINE LEARNING	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.
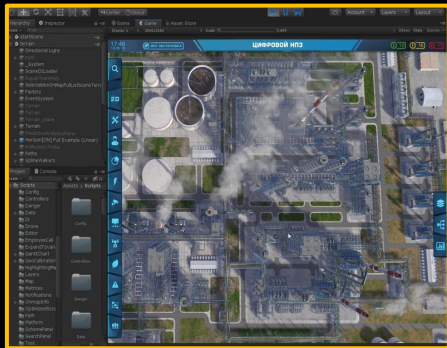
Key benefits

- 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
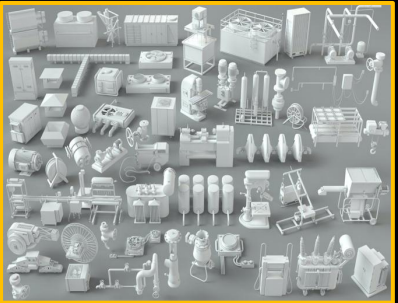- VR and AR visualization tools for various business cases

TECHNOLOGY. PART 2

TECHNOLOGIES USING TO CREATE ADVANCED VISUALIZATION
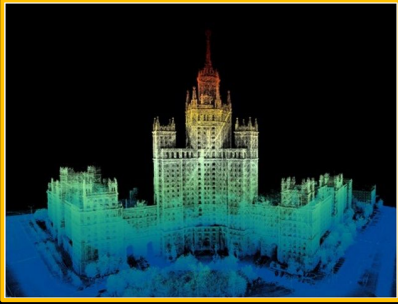
Laser scanners and photogrammetry technology to create 3D models of the real assets

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

Business intelligence and dashboards, predictive analytics

A built-in easy to use Digital Twin composer to create a precise copy of the environment with geoid model support
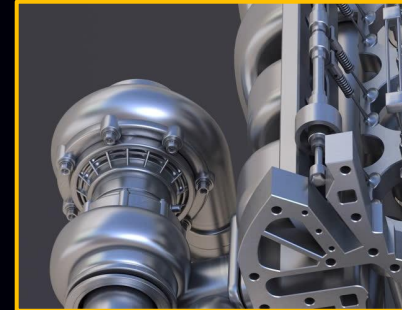
High-performance 3D rendering engine to create like the realistic 3D and superior user experience
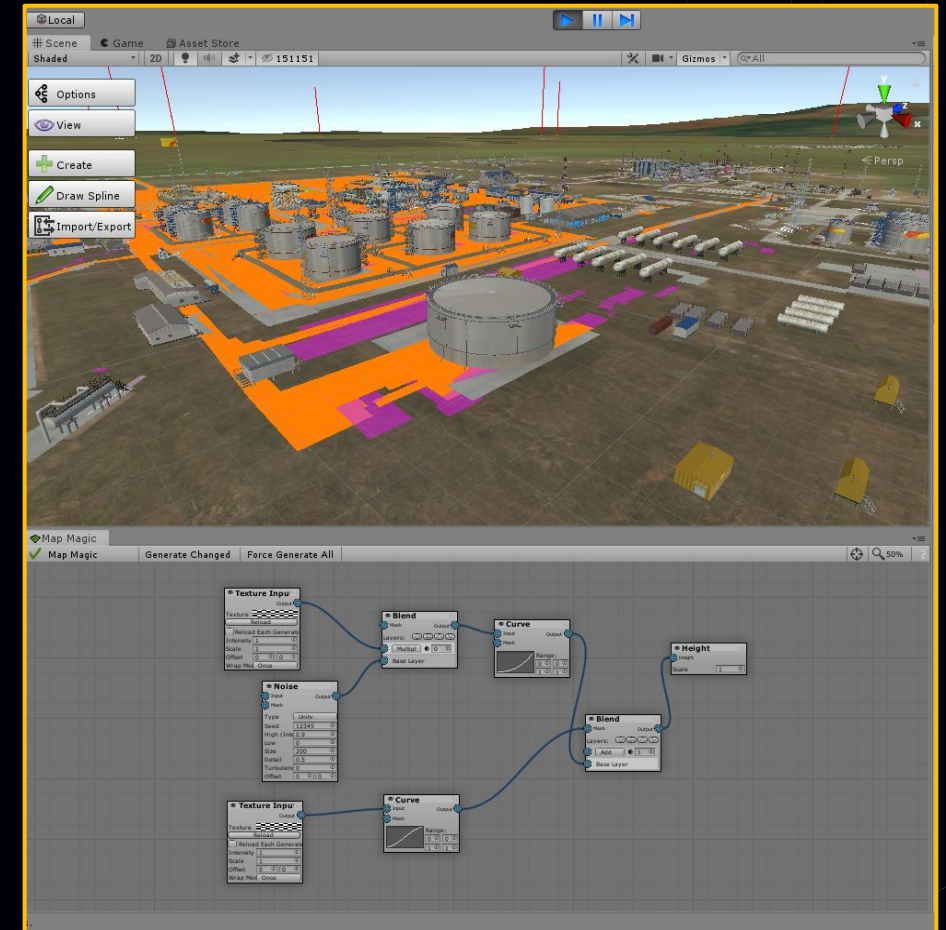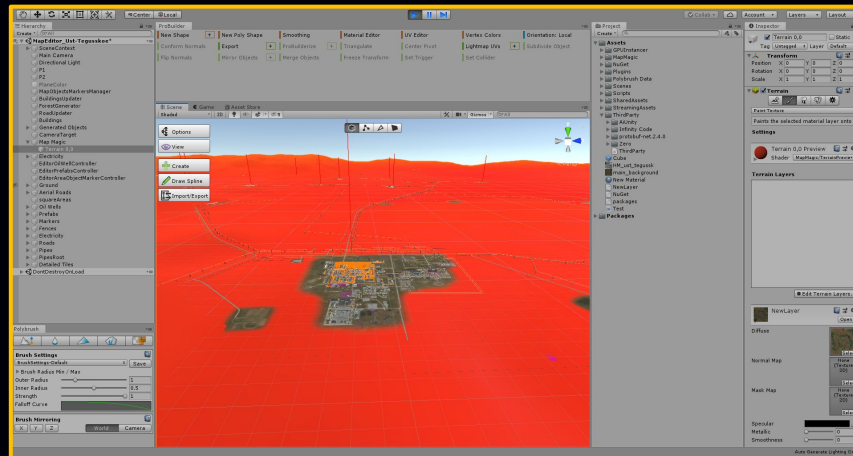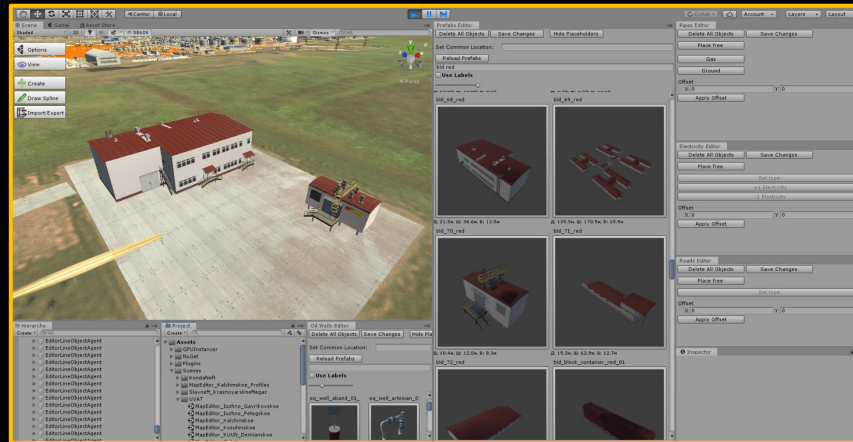

Virtual and augmented reality interfaces beside a common pc and tablets.

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;

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;

Data access and roles management
- User identification
- Requests identification
- Data access management
- .NET Core

Data clients and self-service tools
- Mobile apps
- Web clients
- Reporting & Dashboarding
- Custom apps

Unified data access API based on GraphQL

Orchestration and configuration management Apache Ambari and ETCD

Monitoring and logging services

Stream data management service based on Apache Kafka

Machine learning and predictive analitycs (Spark MLib, Spark Streaming, FB Prophet, TensorFlow, Mahout)
- FB Prophet
- TensorFlow
- SciLearn

Integrated data storages ecosystem
- Apache Druid
- MongoDB
- PostgreSQL
- Tarantool, Greenplum

Cache service by Redis

Data extration and transformation services based on Apache AirFlow, Apache NiFi and own ETL tools

Enterprise data from databases, webservices and files
- Objects DB
- TimeSeries DB
- Relational DB
- Web services

External data sources
- Private or public data

Hybryd data management platform

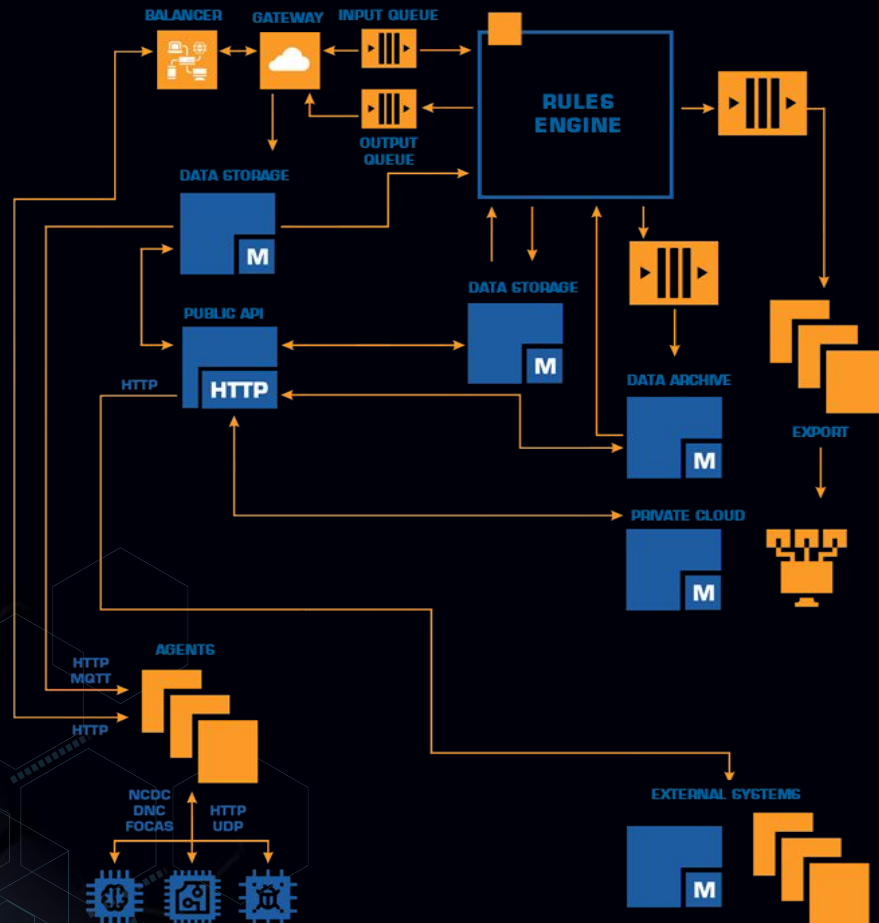We plan make Big Data technologies friendly and effective for customers

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
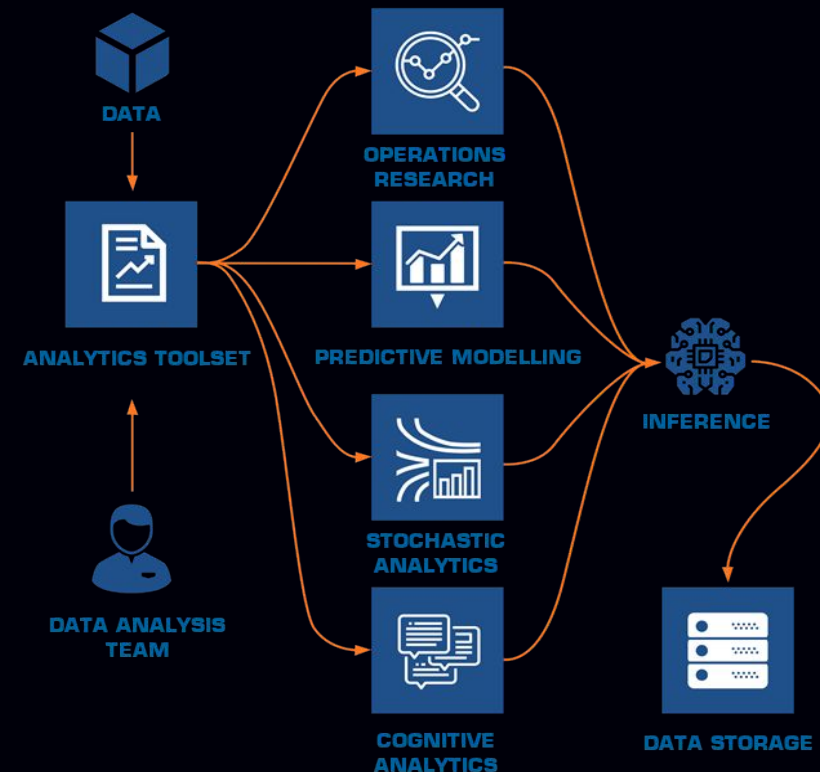
- Entity component system

- GUI-controls

- Camera manager

- Widgets

- Data services

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

DATA PLATFORM

Cluster Admin

Integration

Real – Time Analysis

Unified Data Access

Business Intelligence

Monitoring
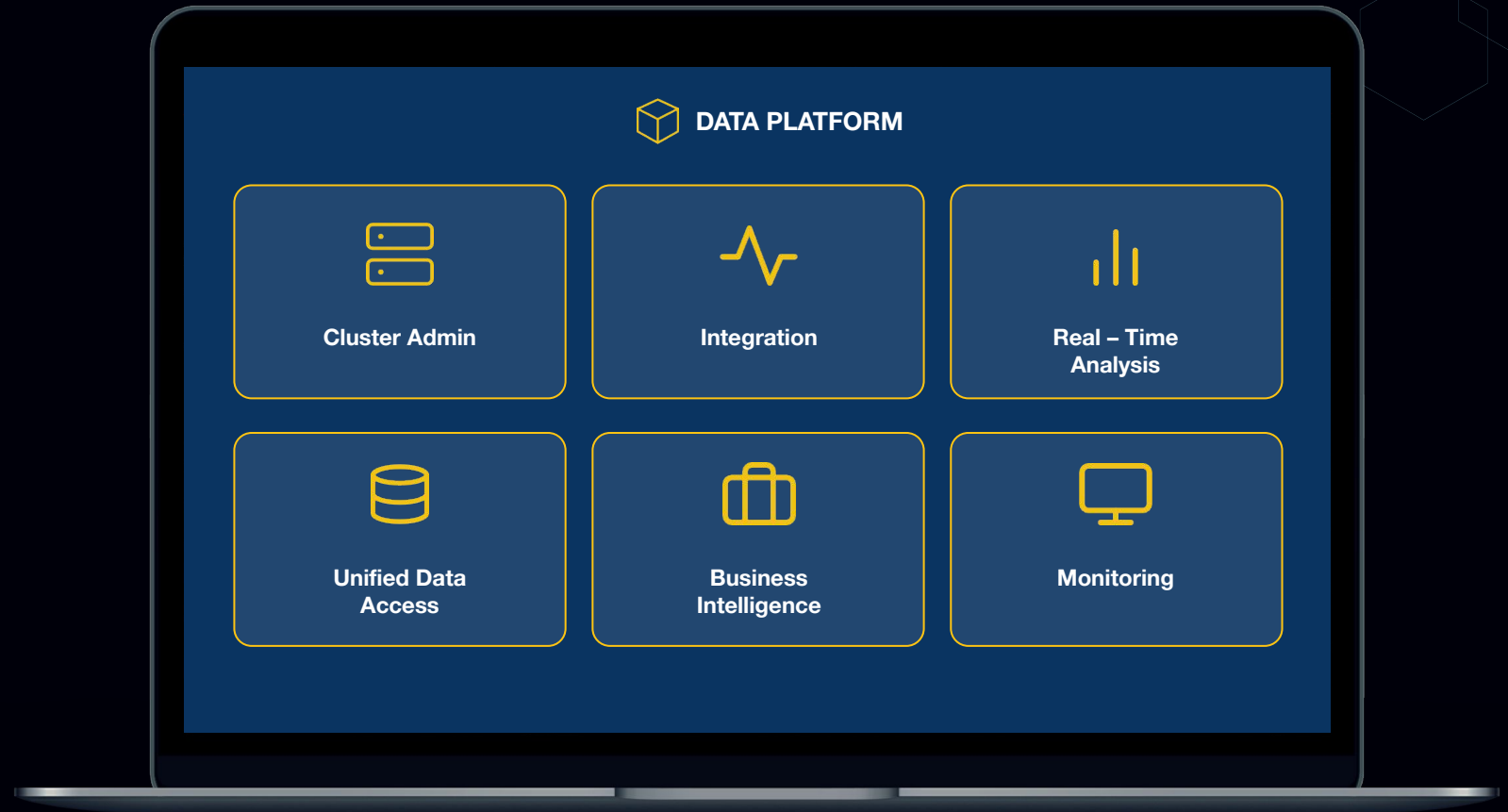
USE CASES & DEMOS

MAKE
DIGITAL
SIMPLE

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;
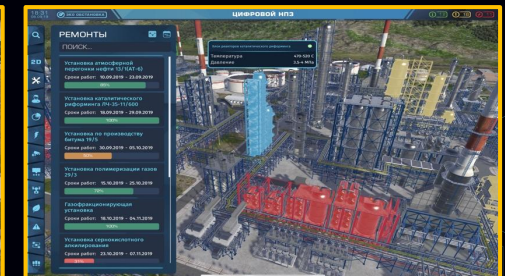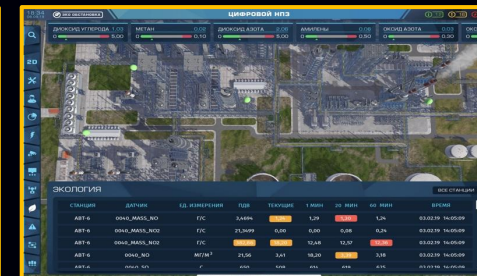- Integrated planning and optimization;
- Computer vision;
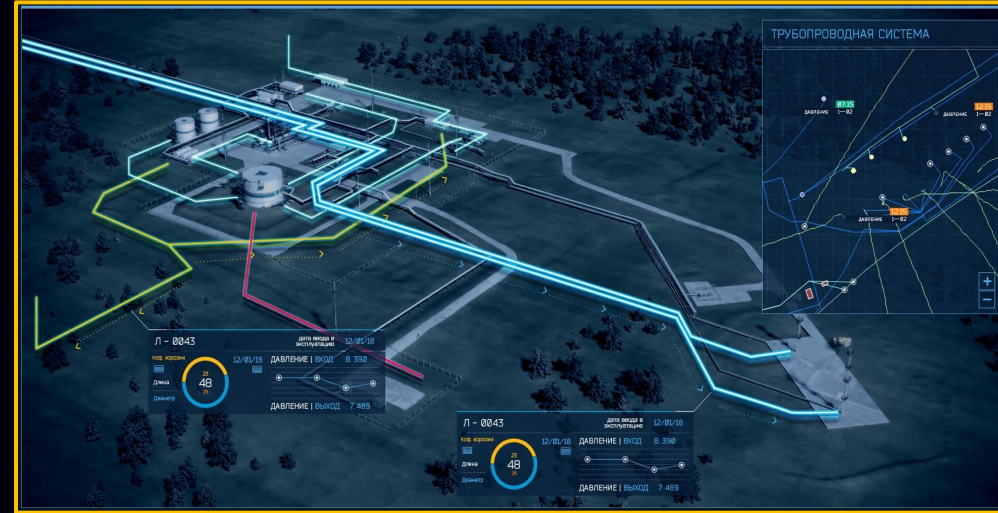
Predictive alerting

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

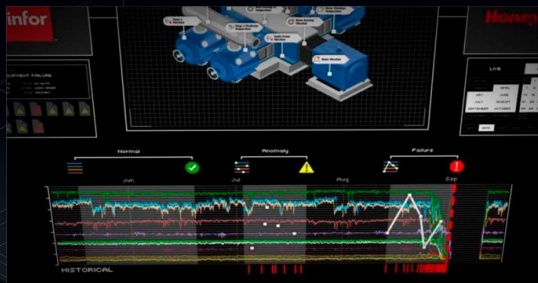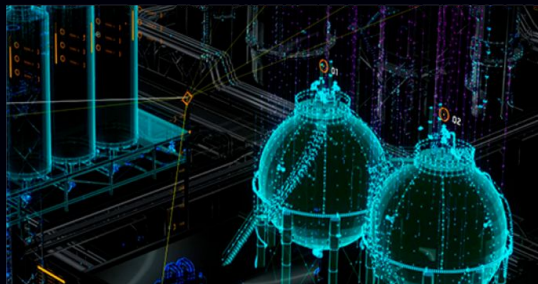**profits and losses optimization**

enviroment control and safety

predictive reliability managent

efficient equipment load

USE CASE: OIL WELL AI - OPTIMIZATION
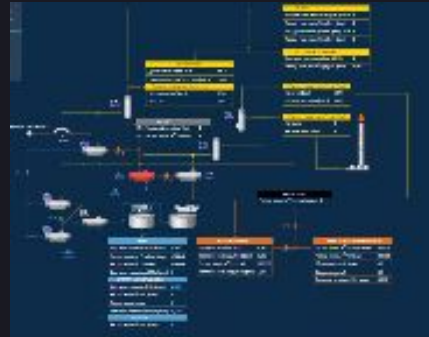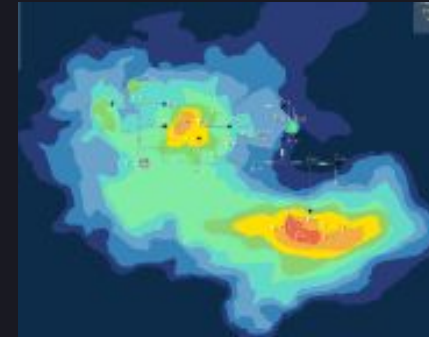
DIGITAL TWIN
an integrated oil & gas filed model based on ML

| 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

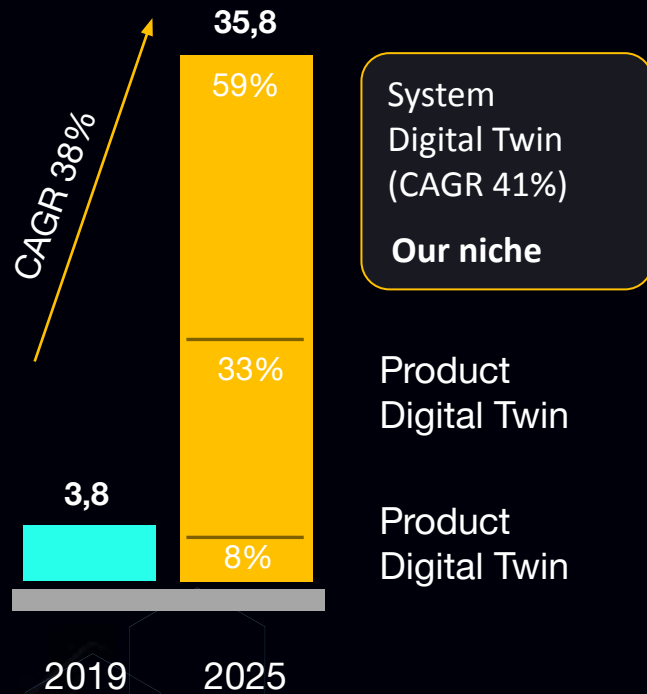Pilot projects and global market expansion strategy

Product ready

* Roadmap above represents high level development strategy

DIGITAL TWIN MARKET

MARKET SIZE (USD BILLION)

35,8

59%

CAGR 38%

System
Digital Twin
(CAGR 41%)

Our niche

33%

Product
Digital Twin

3,8

8%

Product
Digital Twin

2019   2025

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

MARKET SIZE (USD MILLION)

CAGR

Industry	2019	CAGR
Automotive & Transportation	847	37%
Healthcare	569	35%
Energy & Utilities	574	39%
Smart cities	530	31%
Oil & Gas	485	46%
Aerospace & Defense	375	42%
Others	414	32%

OUR TARGETS

- 2019
- 2025
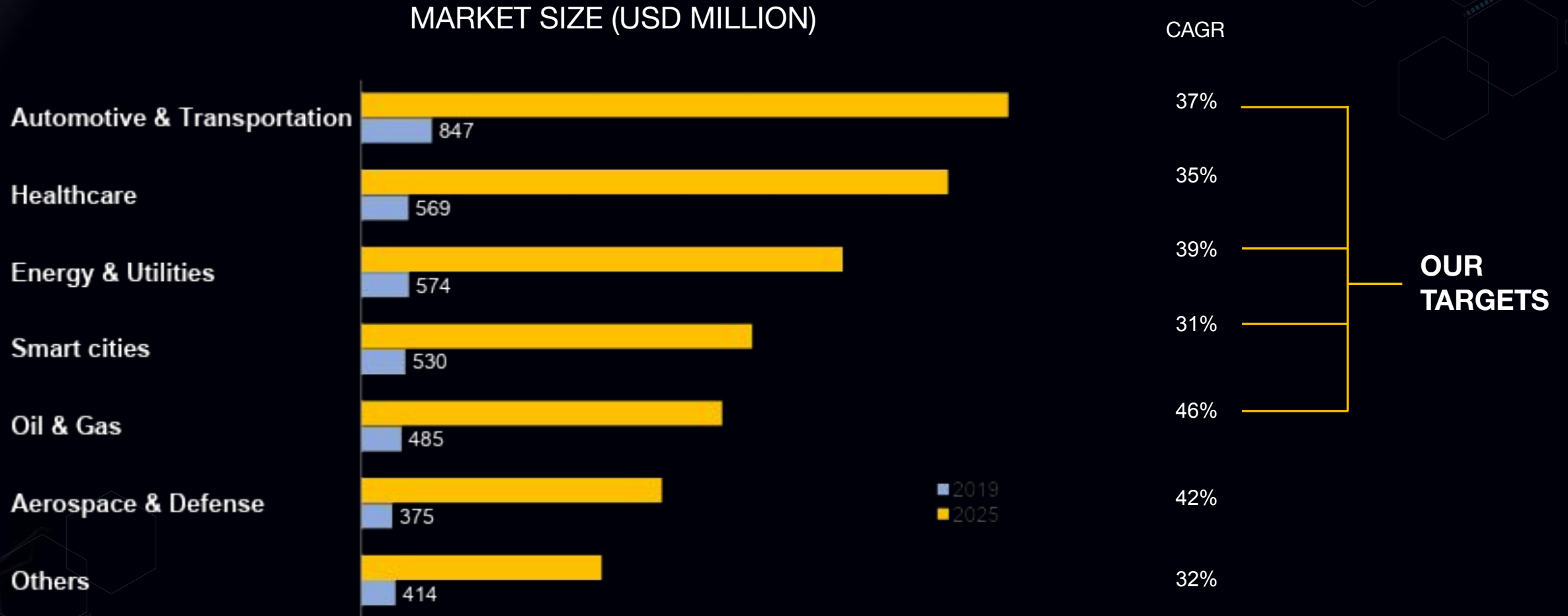
WE PLAN TO FOCUS ON FAST-GROWING SEGMENTS ACCORDINGLY WITH OUR EXPERTISE

VALUE-CHAIN ANALYSIS

Value-add	0 to 10%	10 to 35%	35 to 80%	80 to 100%
Margins	10%	25%	**45%**	20%

Life-cycle Stages

1 Research, Design, and Development
2 Original Equipment Manufacturer
3 Solution/ Service/ Software Provider
4 End user

- R&D of various sensors
- R&D of digital twin solutions and services
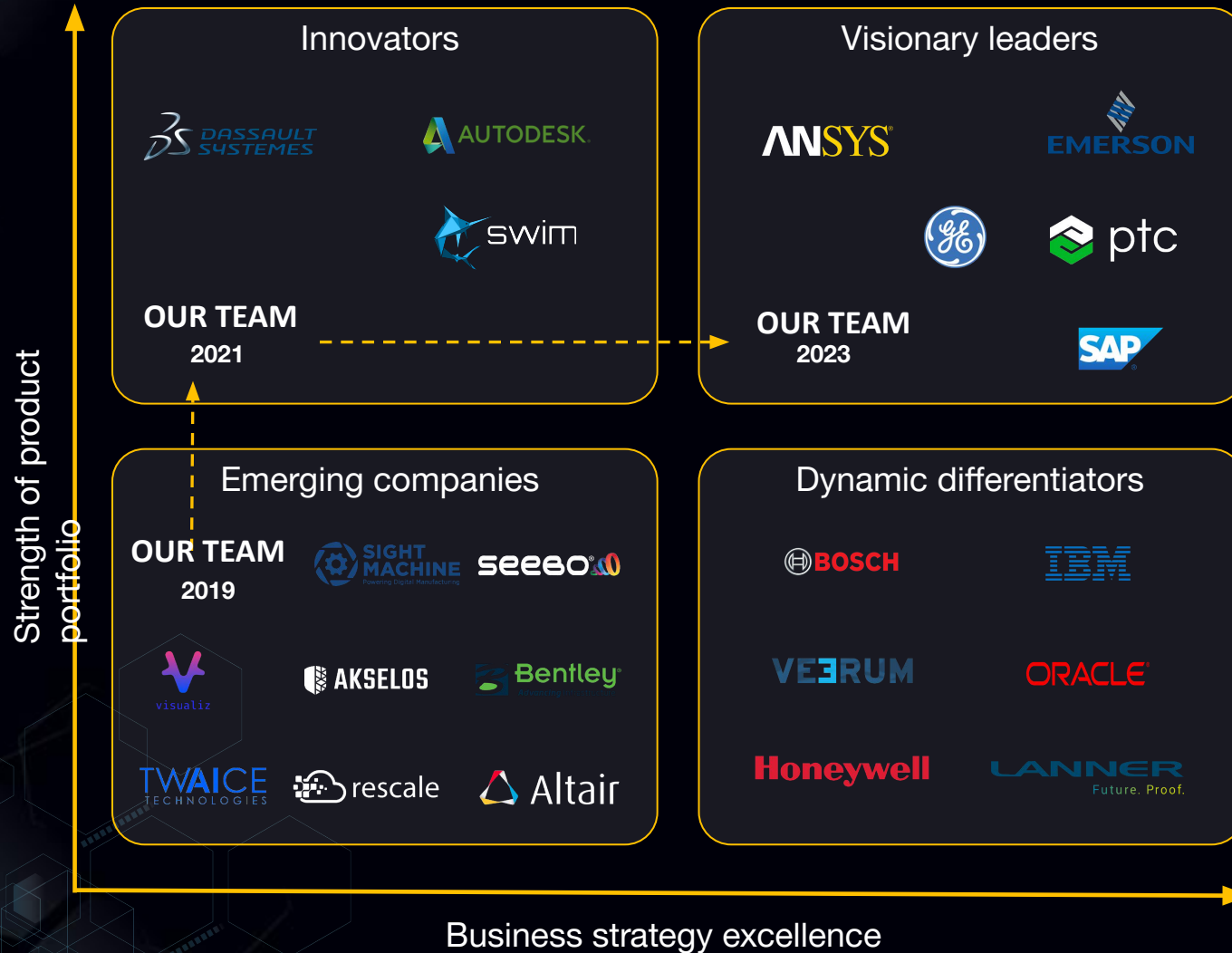
- Manufacturers of sensors

- Cloud/Server providers
- Analytics platform providers
- Simulation platform providers

- Energy & utilities
- Oil & gas
- Aerospace & defense
- Automotive & transportation
- Home & commercial
- Healthcare

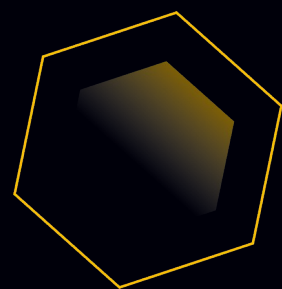## WE PLAY IN THE MOST PROFITABLE SEGMENT OF THE VALUE-CHAIN

COMPETITORS

Innovators: Dassault Systèmes, Autodesk, swim — OUR TEAM 2021

Visionary leaders: ANSYS, Emerson, GE, ptc, SAP — OUR TEAM 2023

Emerging companies: OUR TEAM 2019, Sight Machine, seebo, visualiz, AKSELOS, Bentley, TWAICE Technologies, rescale, Altair

Dynamic differentiators: BOSCH, IBM, VEERUM, ORACLE, Honeywell, LANNER Future. Proof.

Strength of product portfolio (vertical axis)

Business strategy excellence (horizontal axis)

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

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THANK YOU