PREDICT
INTELLIGENT SOLUTIONS

PREDICTIVE INTELLIGENCE

Artificial Intelligence (AI)
For Predictive Analytics and Control
Scalable | Self-learning | Un-supervised | Explainable

On the one hand, nowadays, companies are exposed much more to cost pressure, quality requirements, unpredictability and increasing process complexity.
On the other hand, companies have more and more data available from their processes, machines and resources.
However, availability of (big) data does not yet realize efficiency increases, hoped for – only smart data discover inefficiencies and disturbing factors in both, business and technical processes.
PREDICTIVE INTELLIGENCE is an un-supervised self-learning analysis, prediction and control solution. Even in complex processes and dynamic data structures, you get foresighted recommendations for daily operations. Machine to machine communication allows direct process and machinery control – with proven efficiency increase. Dynamic simulation methods discover hidden optimization potentials. Disturbing factors are discovered early. In this way, you avoid inefficiencies before they occur! In addition, it is transparent for you why AI takes decisions or gives recommendations (Explainable AI / XAI).

Self-learning Solutions:
AI algorithms automate AI analytics

- **Industry 4.0/ Smart Production**
  Quality optimization and waste reduction, predictive maintenance, energy dispatching and trading, machinery control, capacity planning, logistics optimization, process efficiency
- **Smart Services**
  Demand-oriented planning, optimal resource utilization, communication analysis, optimized sales and service processes
- **Smart Grid**
  Optimizing plant operation, cross-commodity predictive control, realizing full potential of renewable energy usage, more precise energy purchase and sale, also for renewable energy, predictively automated energy trading.
- **Smart Building**
  Predictive and adaptive building control

Efficiency Increase for Man, Machinery, Material & Energy

DB — Avoiding total damage thanks to predictive maintenance (= 90% of costs avoidable)

Predictive quality analytics in production — BOSCH Technik fürs Leben

SIEMENS — Predictive Maintenance: Prediction accuracy > 99%

Self-learning AI improves production quality in complex variant processing — ZF

NTT FACILITIES — Failure prediction of critical air condition systems: 98% accuracy

Predictive quality control — T-Systems

Self-learning predictions for optimizing power plant operation and energy trading

5 - 10 % cost reduction potential for logistics — BASF The Chemical Company

EnBW — Innovative analytics approach enables future-oriented solutions for renewable energy

1st pure Predictive Analytics Partner in Germany — SAP

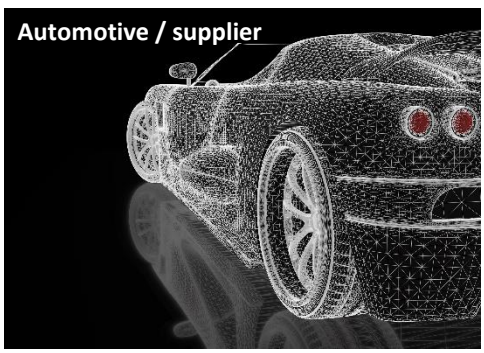
Scheer HOLDING

Artificial Intelligence is required in all industrial branches.

Hot topics are often the same, like:

• Reducing waste in production	Predictive Quality
• Having critical machinery running reliably	Predictive Maintenance
• Optimizing transportation	Predictive Logistics
• Reducing energy costs in production	Predictive Energy
• Optimizing resource efficiency in smart grid	Predictive Energy Grid
• Using HR, machinery and material in an optimal way	Predictive Resource Planning
• Managing buildings efficiently	Predictive Building
• Knowing how to sell best	Predictive Sales

To give you a better understanding which analytical challenges other industries solve with our self-learning PREDICTIVE INTELLIGENCE solution, some examples are listed here.



Self-learning PREDICTIVE INTELLIGENCE

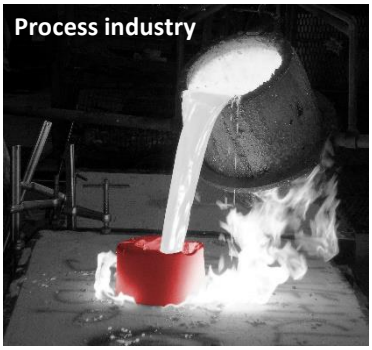
- Analyses assets like
  - robots (welding, painting, handling, ..), presses, etc.

  For
  - Quality assessments / predictions (i.e. car body welding spots),
    Predictive maintenance (i.e. welding gun, cable package, gear or entire drive train)
- Analyses end-to-end production process
  - for transmissions and other car components
  - to discover root cause of minor quality although interim production steps´ specification was always met
- Analyses energy consumption
  - for various machineries or entire plants for heat and electricity
  - to reduce energy costs
    to automatically recommend optimal energy plant operation and optimal energy trade.

Self-learning PREDICTIVE INTELLIGENCE

- Analyses assets like
  - stamping machines, spindle machines, etc.

  For
  - Quality assessments / predictions
    (i.e. for injection pump production machinery)
    Predictive Maintenance
    (i.e. for cable shoe production machinery)
- Analyses end-to-end production process
  - for products like semiconductors
  - to discover root cause of minor quality although interim production steps´ specification was always met
- Analyses energy consumption
  - for various machineries or entire plants for heat and electricity
  - to reduce energy costs
    or to automatically recommend optimal energy plant operation and optimal energy trade.



Self-learning PREDICTIVE INTELLIGENCE

- Analyses materials like
  - steel, paper, cement, glass, chemistries, etc.

  For
  - Quality assessments / predictions (i.e. for paper or cement quality)

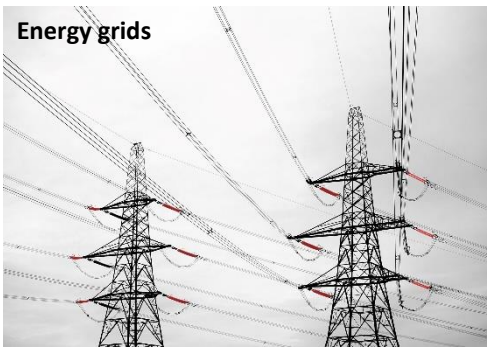
  Predictive Maintenance (i.e. for rolling mill)
- Analyses end-to-end production process
  - For, i.e., plaster products
  - to discover root cause of minor quality although interim production steps´ specification was always met
- Analyses energy consumption
  - for complex machineries like cement mill and steel oven
  - to reduce energy costs and

  to find root cause for high energy consumption.

Self-learning PREDICTIVE INTELLIGENCE

- Analyses assets like
  - locomotives, rail way wagons, tracks, …

  For
  - Predictive Maintenance (i.e. motors, air conditioning systems)
- Analyses transportation demands
  - i.e. for material from plant to harbor or for people at station hubs
  - to predict different demands highly accurate for better planning of locomotives, wagons, staff, …
- Analyses energy consumption
  - for locomotives or e-cars
  - gives recommendations to driver how to reduce energy without getting negative effects on schedule, machinery, …



Self-learning PREDICTIVE INTELLIGENCE

- Analyses assets like
  - power plants, complex machineries (i.e. steam gas turbine, boilers, machineries to generate renewable energy)
  - for dynamic efficiency,

    for finding influencing factors for inefficient usage,

    for Predictive Maintenance
- Analyses grids (producers, consumers, prosumers, both industrial and private)
  - for highly accurate predictions
  - for steering energy flows in a predictive way
  - to reduce external energy purchase

    to improve energy trade margin

    to use renewable energy most efficiently.

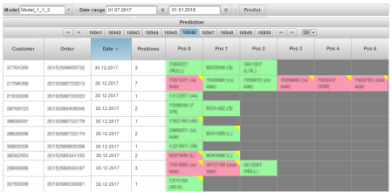
Self-learning PREDICTIVE INTELLIGENCE

- Analyses online shop users and predicts
  - when they will buy again (for targeted newsletter distribution),
  - what they will buy again (for targeted advertisements)
  - what they will return (for avoiding returning goods).
- Analyses capacity in complex processes,
  - like optimal HR allocation of thousands of workers or machinery and material in multi-national construction projects
  - Like planning and renting for thousands of resources, i.e. rail way wagons.

Depending on your challenges, different software modules are used.

PREDICTIVE INTELLIGENCE

Module SELF-LEARNING

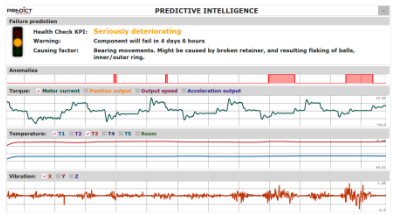


Solution core are innovative un-supervised and explainable self-learning algorithms, to discover complex patterns, initially, and to realize continuous learning. Cognitive Robotic Process Automation procedures understand dynamic changes of processes and influences. In this way, multi-layer data patterns can be discovered in a reliable way. Hidden disturbing factors are exposed. Therefore, you can optimize your processes sustainably.

Module ANALYSIS

In order to improve processes persistantly, reasons for bad results need to be discovered. Exactly that is what the module ANALYSIS is focusing on. You receive transparency on disturbing factors, for example why machineries, built and set up in the same way, deliver different results.
This transparency enables you – even in complex variant diversity – to focus on complex root causes, and to improve your processes sustainably.

Module ANOMALY DETECTION

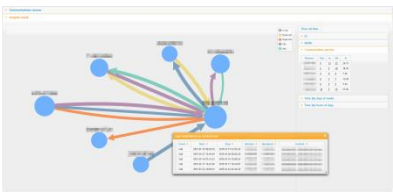


If your process KPIs do not deliver desired results, then, it is already too late: There are negative effects on your process performance. ANOMALY DETECTION discovers early signs of deviation in behavior patterns. These anomalies are assessed by self-learning. In this way, process-related anomalies can be differentiated from those anomalies which will lead to problems.
Thus, you avoid inefficiencies, before they actually happen!

Module PREDICTION

How business-relevant KPIs will develop into the future is often depending on complex interrelations. PREDICTION module enables you to plan also those complex and dynamic processes with high accuracy. In addition, you get aware of negative developments before they will happen.
In this way, you are able to plan complex processes and avoid inefficiencies before they occur!

Module SIMULATION



Which benefits do you gain from changed processes? Before implementing changes on an organizational and technical level, use SIMULATION to assess different scenarios.
In addition, SIMULATION evaluates, for example, how your machinery can run in an optimal way, i.e. with minimum production loss.
In this way, you select the best process variant and save time and money!

Module CONTROL

If you want to automate optimization, realized by above-mentioned modules, then, you can easily connect CONTROL module to your operative IT systems.
Both, technical as well as non-technical processes are continuously and predictively optimized. Process changes are taken care of because self-learning algorithms for continuous learning go on optimizing processes and machineries in daily operation.
In this way, you realize automated optimization of your complex processes without manual interaction!

Innovation Awards

Deutschland Land der Ideen Ausgezeichneter Ort 2018
Gartner Cool Vendor 2016 www.gartner.com
INDUSTRIE PREIS 2015 BEST OF
IDTechEx
CODE_n FINALIST
Deutschland Land der Ideen Ausgezeichneter Ort 2015
Software-Cluster
Deutschland Land der Ideen Ausgewählter Ort 2012
KYOCERA Get Started
mittelstand 2011
mittelstand SAARLAND
mittelstand 2013
GFFT
DARBOVEN IDEE-FÖRDERPREIS

Due to its un-supervised, explainable and self-learning algorithms, PREDICTIVE INTELLIGENCE has been awarded with various innovation awards.

About IS Predict GmbH: IS Predict GmbH helps organizations to get the best business value out of digitalization and data analytics. The company´s PREDICTIVE INTELLIGENCE solutions enable customers to optimize their processes in a predictive way to avoid inefficiencies before they occur. The specialty are self-learning algorithms: AI algorithms automate AI analytics.

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