

The background of the slide is a collage of industrial images. On the left, there are large, curved pipes in shades of orange and brown. On the right, there are more complex industrial structures, including towers and scaffolding, in shades of blue and grey. The entire image is overlaid with a large, white, diagonal shape that serves as a backdrop for the text.

PREDICTIVE MAINTENANCE FOR INDUSTRY

PREDICT
ANTICIPATE & SAVE

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ABOUT THE COMPANY

With over 20 years of experience, we are specialised in Digital technologies for Predictive Maintenance and have created a unique methodology of predictive maintenance engineering to help and guide our clients gradually to optimise their installations, improve the performance of their equipment, and to transit into industry 4.0 in a safe and efficient manner.

We have the capability to implement a solution for different equipment from a backward-looking perspective or focus on critical and unforeseeable equipment.

Our success is grounded in how well we integrate with our clients and how dedicated our team is in delivering the best solution tailored and adapted to the client's requirements, confidentiality and cybersecurity specifications.

We are now based in France and Australia and work globally with customers in Europe, America and Asia, but started back in 1999, for the remote monitoring of 3 hydroelectric power stations hard to access in Norway, Spain and Portugal. Since then, our core values have remained the same:



Reliability



Integrity



Adaptability



Customer
Focused



Quality
Services



Innovation

OUR METHODOLOGY OUR DNA



Jean-Baptiste LEGER,
Founder & General Manager

"The strength of Predict lies in the reason of its creation: to develop a unique methodology for proactive maintenance to answer existing industrial needs. Since 1999, we have continuously upgraded our innovative solutions and guide our customers step by step in the predictive maintenance era."

OUR INDUSTRIES & EXPERIENCE

Built on 20 years of experience, PREDICT's solutions have been adopted by more than 10 different industry sectors. Originally developed for remote diagnostic of Hydroelectric power stations, PREDICT's technologies widely apply to Manufacturing, Mining & Mineral Processes, Navy, Aeronautics, Space, Energy, Machine Tools, Industrial Vehicles, Oil Refinery, Steel Industry, Microelectronics, Pharmaceutical Industry, Pulp & Paper, Nuclear.



**MANUFACTURING
SYSTEMS**



**THERMAL
MACHINES**



**TURBINE
MACHINES**



**LIFTING & HANDLING
SYSTEMS**



**TRANSFORMATION
DISTRIBUTION
POWER SUPPLY**



**THERMAL
PROCESSES**



**250,000+
MONITORED EQUIPMENT**



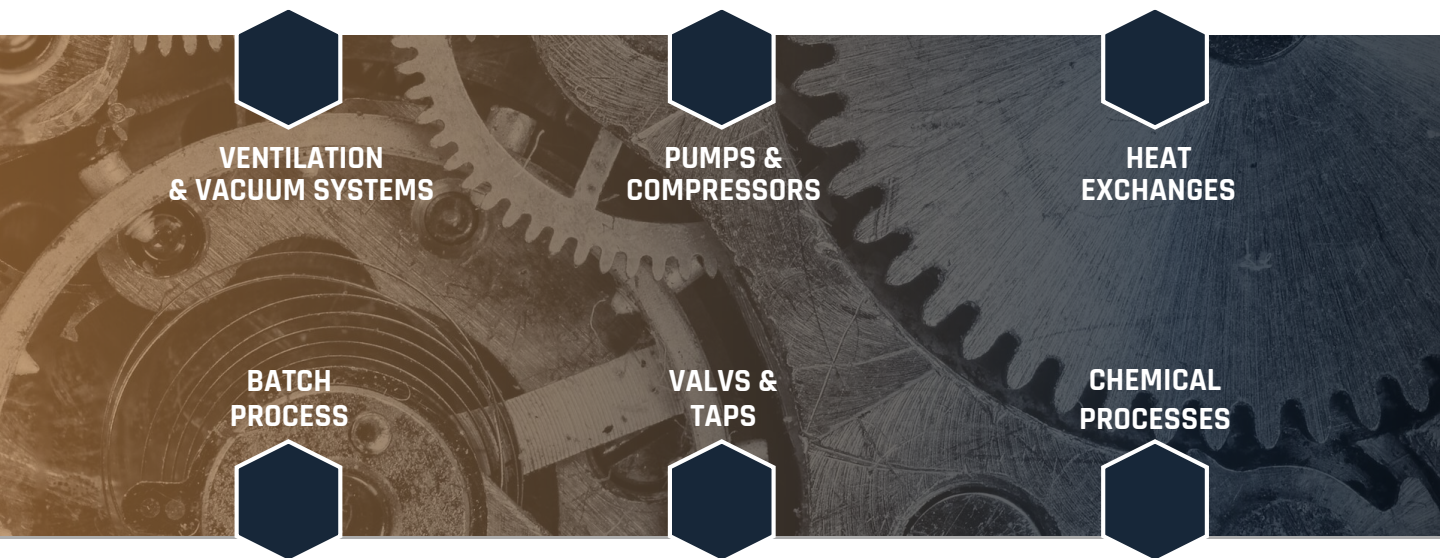
**1,000+
USERS**



**10+ YEARS
OPERATING LIFETIME 24/7**



A wide range of industries have trusted us since 1999, and today, over 250,000 equipment are now monitored by PREDICT's digital solutions 24/7. Our solutions lead to successful anticipations from 2 weeks up to 6 months, therefore contributing to the accomplishment of a lot of missions and operations.



**30+
COUNTRIES**

Being part of Groupe SNEF, an international France-based company, PREDICT operates in more than 30 countries around the globe.

PRODUCTS & SERVICES

1

CASiP[®]

Condition-Based Monitoring solution which triggers early warnings when an equipment starts drifting from its normal behaviour

2

KASEM[®]

Advanced Predictive Maintenance solution which anticipates equipment failure, diagnoses the causes of malfunctions, for end-users to have a clear vision and understanding of their Asset's Health.

ENGINEERING

Functional analysis, dysfunctional analysis FMECA & HAZOP, maintainability studies

3

DATA ANALYSIS

Design and configuration of monitoring algorithms using Machine Learning Methods

4

SUPPORT SERVICES

Dedicated supporting team, user training for KASEM, working closely with client's team for continuous improvement, development of mobile apps and customisation of interfaces & reports

5

* Services are generally included with the products but can be accessed separately as a service only.

CASIP® & KASEM® DIGITAL TECHNOLOGIES

MOVING TOWARDS AN ADVANCED PREDICTIVE MAINTENANCE STRATEGY

STEP 1

WHAT IS GOING TO BREAK?

Condition Based Maintenance:
Identify the assets that are
going to fail

STEP 2

WHEN IS IT GOING TO BREAK?

Predictive Maintenance:
Estimate the Time-To Failure
of the assets

STEP 3

HOW & WHY IS IT GOING TO BREAK?

Advanced Predictive Maintenance:
Perform in-depth analysis and
identify the root causes of failures.

HOW DOES IT WORK? BY ASSOCIATING ENGINEERING AND DATA...

Associating the engineering behind the equipment with the data to model its behaviour facilitates us in anticipating failures months in advance without the need to explore large amounts of data.



Engineering study

Our Engineering services include a thorough analysis of all the targeted assets in a client's installation, to enable a concrete and accurate understanding of the assets and to provide precise health assessment of the complete plant/installation. We provide Functional analysis and Dysfunctional analysis (FMECA & HAZOP) and Maintainability studies of the assets.

Correlating data with the engineering behind the asset and incorporating the knowledge of the technical experts into our models, we can anticipate failures which were not encountered in the past.

Data analysis

Our advanced data analytic models implement the most efficient and accurate predictive maintenance solution that provides failure diagnostics and hybrid prognostics for the equipment with industry-proven reliability and accuracy.

Our models enable the user to understand the causality relationship between the input indicators and the behaviour of the asset.

Our solution, KASEM® captures the knowledge of the experts in the industry to label the events, refine the models and take better maintenance actions.



KASEM[®] E-MAINTENANCE FEATURES

TO ASSIST WITH THE MONITORING & MAINTENANCE OF CRITICAL EQUIPMENT

KASEM[®], Knowledge and Advanced Services for E-Maintenance

Our e-maintenance platform KASEM[®] provides an end-to-end predictive maintenance solution. It helps in making cost-effective maintenance actions and, facilitates for a sustainable return to nominal operations by providing a clear vision of the installation, estimating the remaining useful life of the equipment, anticipating failures and conducting root cause analysis.

Through KASEM[®], gain an open-access through to...

- Equipment remaining useful life estimates
- Condition based monitoring
- Predictive diagnostics
- Fleet/multi-site comparison & analysis
- Prognostic and health management
- Integrated engineering studies
- CMMS standard exchange interface
- Automatic reporting

What sensors are compatible with our technologies? **All of them!**

PREDICT already supports the collection of data from a wide range of wired and wireless sensors, such as:

- Temperature,
- Pressure,
- Current,
- Speed,
- Flow,
- Level,
- Voltage,
- Sonar,
- Weight,
- pH Meter,
- Chromatograph,
- Proximity,
- Potentiometer,
- Vibration,
- Encoder,
- Etc...

What connectors to link your data base with our platform? **We already have them!**

We provide a wide range of secure and reliable data connectors to seamlessly link your database with our technologies.

- OPC UA server-based software: SCADA, PLC, DCS, HMI, OSIsoft PI system...
- SQL Database: Oracle, MySQL, PostgreSQL, Windev, Access...
- NoSQL Database: HBase, Cassandra, MongoDB...
- Exported files: XML, CSV, JSON, EXCEL, TAB, TXT...
- Historian: RTDB, Proficy Historian, Aspen IP-21, Wonderware...
- Management & Planning Systems: CMMS, ERP
- Cloud Storage...
- Custom Connectors: Customised depending on your installation...

DIFFERENTIATORS

MODEL-BASED APPROACH

PREDICT uses engineering studies and models to assist in developing their fault-detection algorithms. This model-based approach means a fault doesn't have to have occurred in the system for PREDICT to develop an algorithm to detect the fault in the future.

20 YEARS EXPERIENCE WITH INDUSTRY APPROVED ALGORITHMS

With over 20 years of experience in implementing real-time condition-based monitoring and predictive maintenance in multiple industries, PREDICT has a vast knowledge of equipment and processes to help when deploying client's digital solutions. PREDICT's developed algorithms have been proven through real-world implementation to be effective in monitoring and fault detection.

MOBILE MONITORING AND QR CODE IMPLEMENTATION

PREDICT provides clients with a web-based platform to allow the monitoring of their asset's health from any computer. PREDICT also offer clients a mobile application and augmented reality QR codes for equipment for quick access to asset's health status anytime and anywhere during Operations & Maintenance stages.

NO ADDITIONAL SENSORS REQUIRED

PREDICT believes in making the most out of a client's pre-existing equipment sensors. Using the potential of the process data, PREDICT's digital solutions can be developed using multiple kinds of sensors from different manufacturers without the need to install additional monitoring equipment.

KEY PERFORMANCE INDICATOR BASED CONTRACTS

PREDICT is passionate about providing the optimal digital solution. That is why PREDICT offer Key Performance Indicator (KPI) based contracts which sees PREDICT constantly improving upon their solution to provide clients with the best performance and hence a mutually beneficial Return On Investment (ROI).

TO START PAYBACK

3 to 6
MONTHS

-40%

OF UNAVAILABILITY

OF PRODUCTION

+20%

-70%

OF BREAKDOWNS

OF ENERGY EFFICIENCY

+15%

-20%

OF MAINTENANCE COSTS

OUR WORKING PROCESS

We strive to identify the best solution that would cater to your industry requirements by strategising the right approach for your environment and assisting you in implementing predictive maintenance methodology in a seamless manner.

Here's a closer look at our process we follow to deliver the most efficient results:

1 GET IN TOUCH

Schedule an introductory call with us - contact us at: info@predict.net.au

2 PRELIMINARY STUDY

Of your installation is **FREE**

3 STRATEGISE

Design a strategy to cater to your needs

4 PROOF OF CONCEPT

Implement the solution for critical assets (less risk)

5 IMPROVE THE MODELS

Based on feedback

6 FINAL IMPLEMENTATION

Extend the analysis to a fleet/complete installation

7 SUPPORT AND UPDATES

Provide support and updates as and when required

EXAMPLES OF PREDICTIONS

**6 MONTHS
PROGNOSTICS**



**NUCLEAR
NUCLEAR FUEL RECYCLING**

Breakdown of fuel supply system avoided

**2.5 MONTHS
PROGNOSTICS**



**MACHINE TOOLS
AUTOMOTIVE MANUFACTURING**

Breakdown of linear motor avoided and
root cause found

**2 MONTHS
PROGNOSTICS**



**NAVAL
PROPULSION AND ENERGY**

Propelling system & power supply
breakdown avoided

**3 MONTHS
PROGNOSTICS**



**NUCLEAR
NUCLEAR FUEL MANUFACTURING**

Dramatic consequences avoided during
commissioning phase

**7 WEEKS
PROGNOSTICS**



**STEEL INDUSTRY
DESCALING HOT ROLLING**

Sensor fault anticipation

**5.5 MONTHS
PROGNOSTICS**



**NAVAL
SENSOR ON FUEL SYSTEMS**

Sensor drift anticipation

**1 MONTH
PROGNOSTICS**



**ENERGY
SEAWATER COOLING SYSTEM**

Fouling anticipated to avoid unwanted
power generation unit stops

**3 MONTHS
PROGNOSTICS**



**ENERGY
CHEMICAL & VOLUME**

Pump bearing avoided

**1.5 MONTHS
PROGNOSTICS**



**NAVAL
DIESEL GENERATOR**

Engine stop avoided

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