

Porini for Manufacturing

Transform your business and
move on Intelligent Operations

Digital Transformation : The Manufacturer Journey



With our consulting services, specialized partners and Microsoft Azure IoT and Data Platform and services we offer to our customers an end to end and customizable solution for each phase of the manufacturer journey.

Main Modules



Analytics & Collaborations



Operations



IOT - Digital Twins



AI



Service



Main Features



Knowledge Management



Teams & Powerplatform Integration



Demand & Forecasting



Planning



Execution



Smart Factory



Smart Product



Predictive Models



Process Automation



Servitly & Field Service

Main Modules



IOT - Digital Twins



Main Features



Smart Factory



Smart Product

Main Modules



Production Monitoring



Customer Management



Alert Controlling



Analytical Overview



Main Features



Porini 4 IoT

Objectives



Advanced Production Monitoring



Device data collection, real time and historical data, OEE and MES-ERP Integration



Target



New Product Services



Improved R&D insights
New service offer capability



Advanced Services



Alert & Service Controlling



Real Time and proactive alert notification
Service monitoring



WIP



Analytical Overview

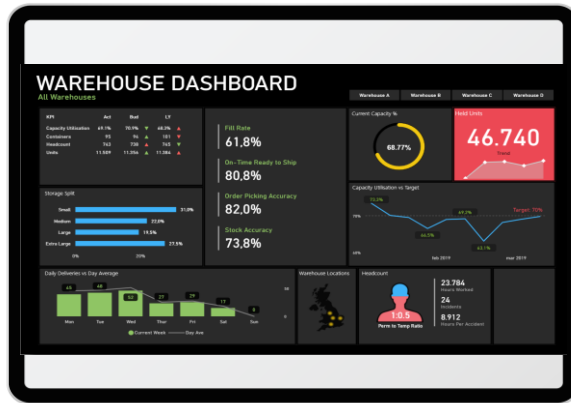


OEE-KPI-Proactive analytics-AI enablement

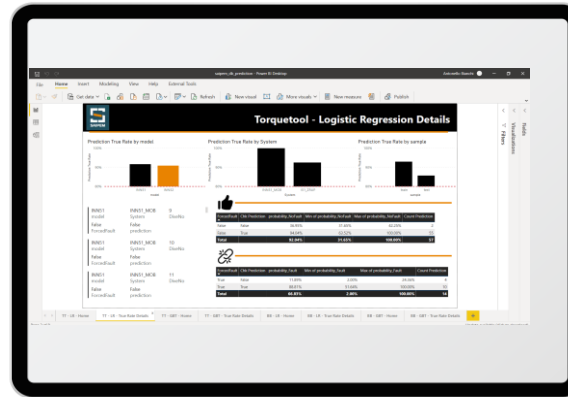


Analytics

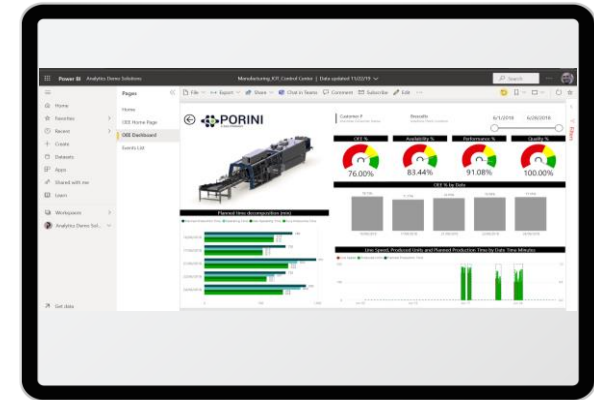
Porini 4 IoT



- Forecast Analysis
- Report Delivery by destination
- Report Production
- Warehouse KPI Dashboard



- Regression Algorithm



- Survival Analysis Algorithm



Case History

SIAPI - Smart Grinding



Maintenance

The Down Time due to the grinding wheels is reduced thanks to predictive analysis algorithms that can predict failure conditions



Monitoring

Data collection gives information about grinding wheels performance



Control

Grinding wheels Real-time monitoring of critical parameters sends alerts and information about instant performance



Safety

Sensors and onboard electronics collect information to reduce the risk of accidents



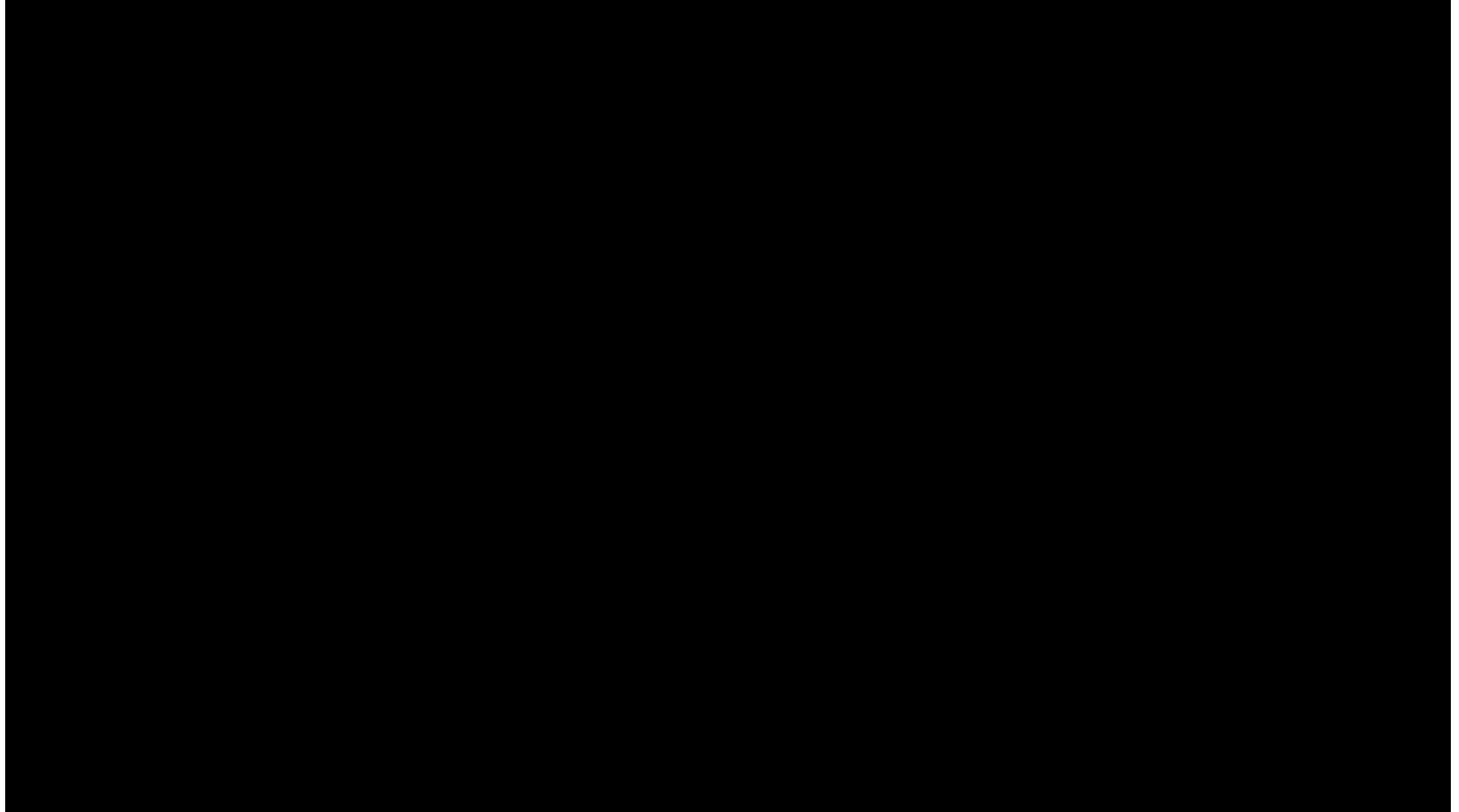
Services

SIAPI provides high value services based on historical data collection

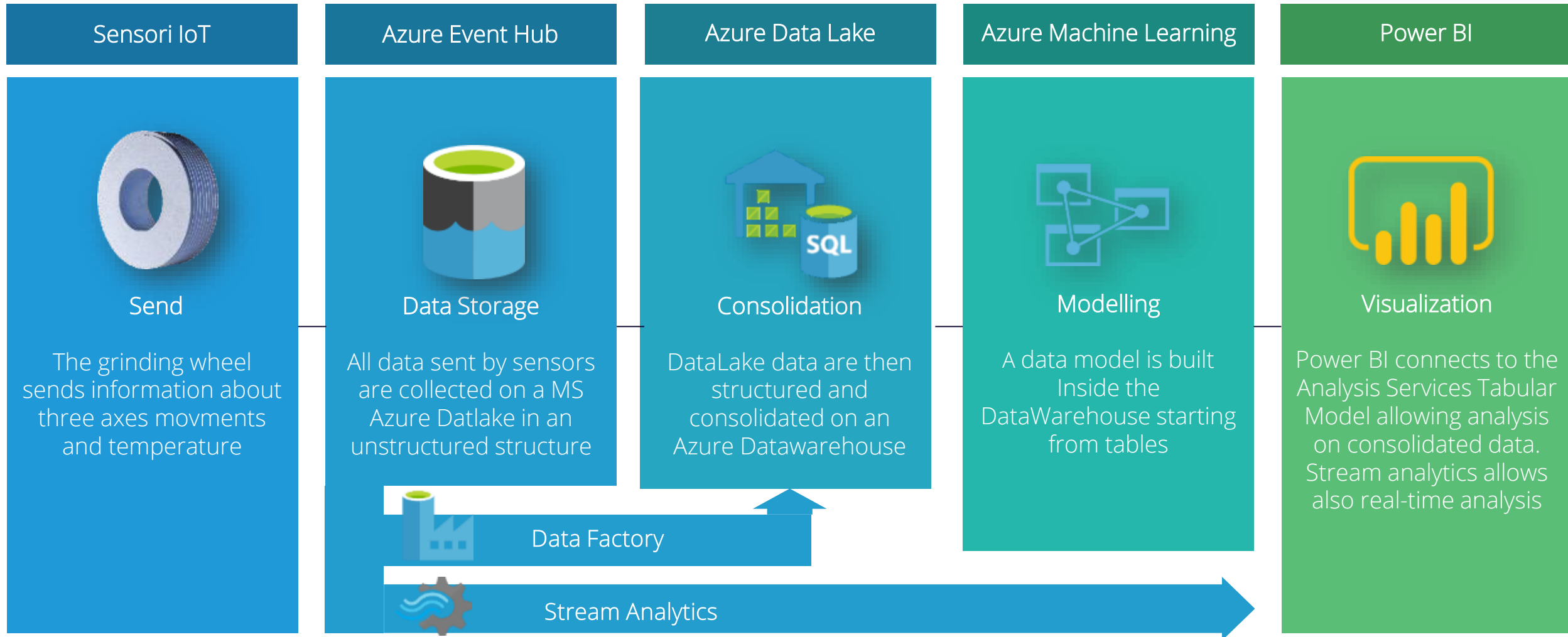
SIAPI had the need to collect working parameters from their grinding wheels, through onboard sensors, such as rotation speed, temperature, vibrations, etc.

[VIDEO](#)

SIAPI - Smart Grinding

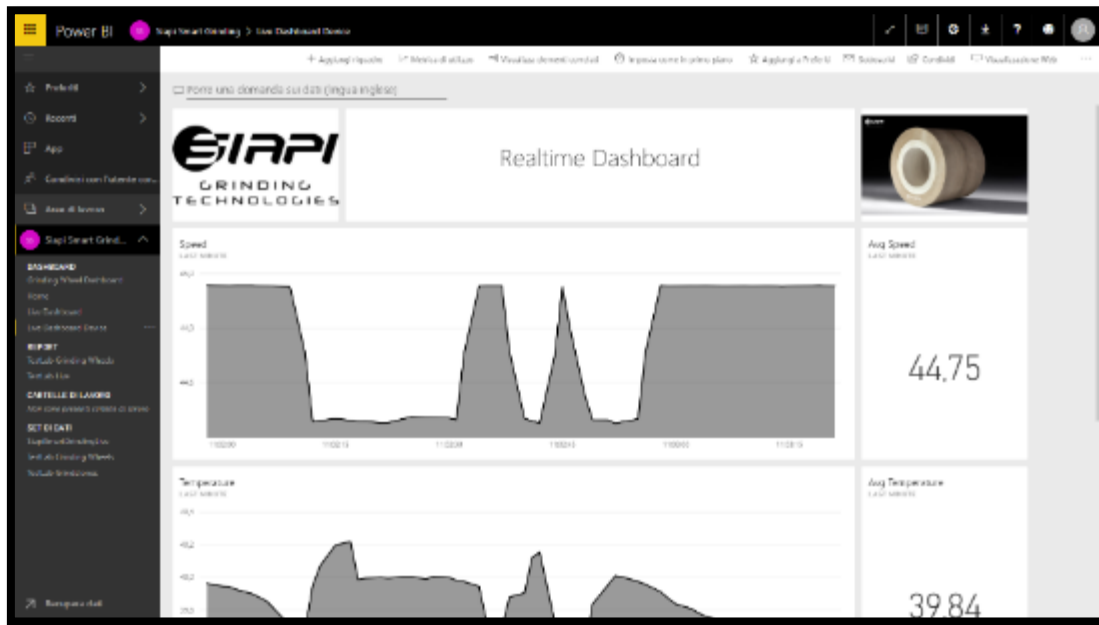


SI-API - Smart Grinding Infrastructure

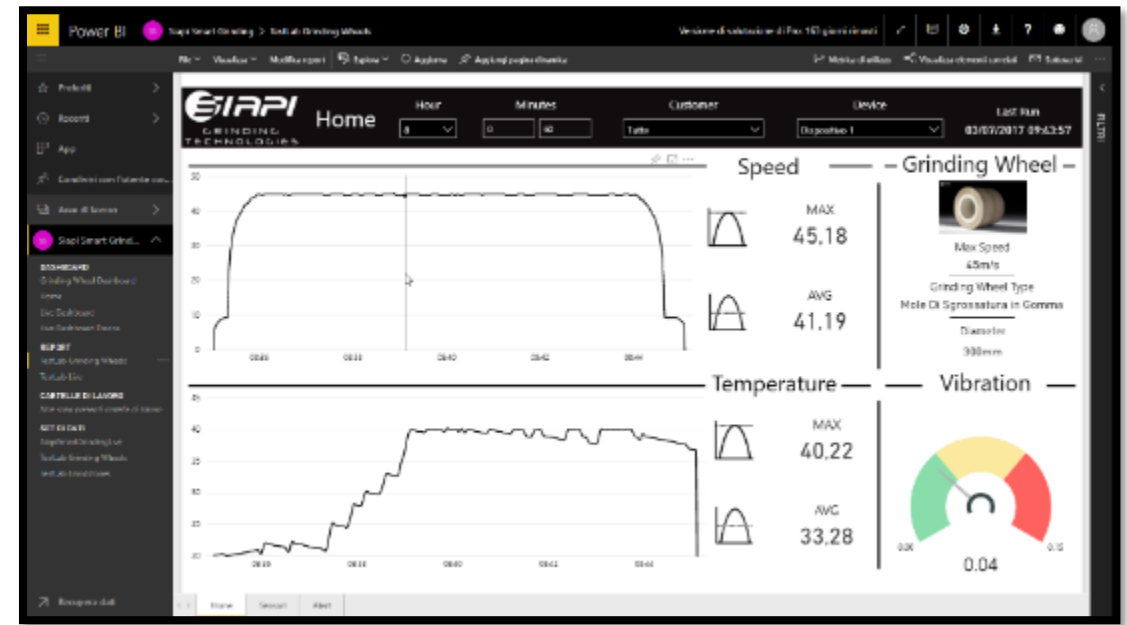


SIAPI - Smart Grinding Reporting

Realtime Analysis



Historical Analysis





Maintenance

Mathematic statistic algorithm predict failures optimizing maintenance times and reducing work time loss



Prediction

Data collection makes history analysis possible forecasting the probability of a failure



Monitoring

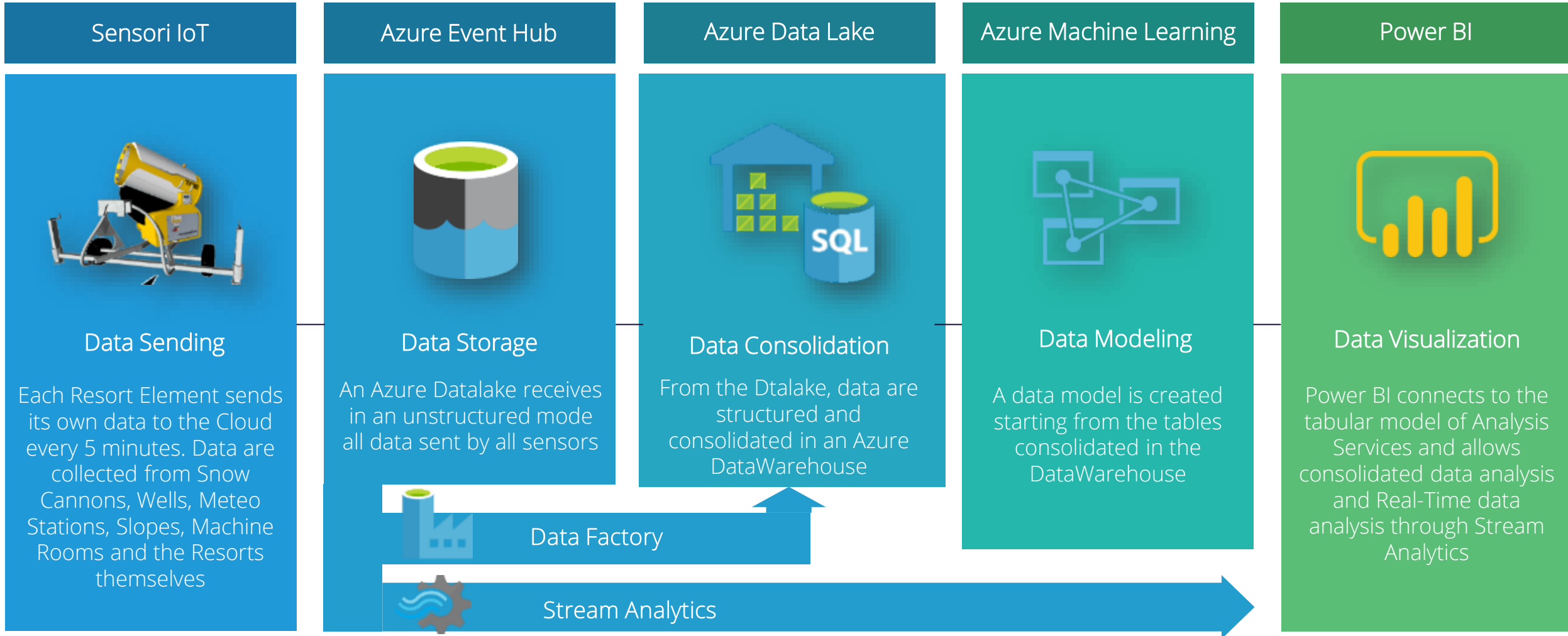
Consolidated Real-Time information help identify and preview critical issues



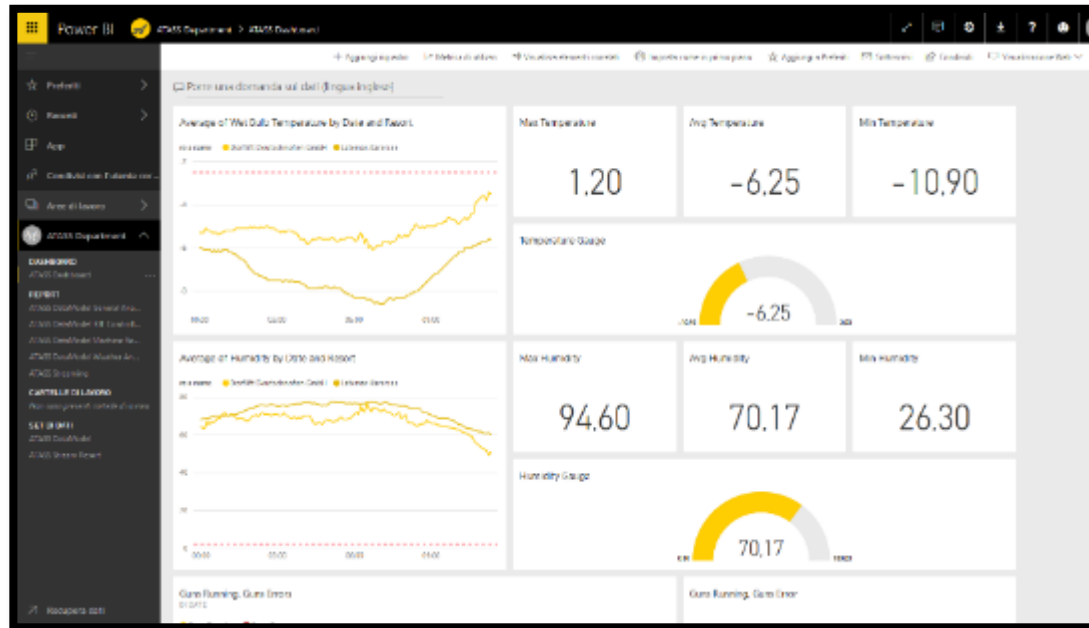
Services

Personalized services can be performed thanks to Data History analysis

The need of the customer for «big data» collection from sensors analysis, gives the technical team real-time information and makes possible to show them the actual plant status, performance and predictive analysis.

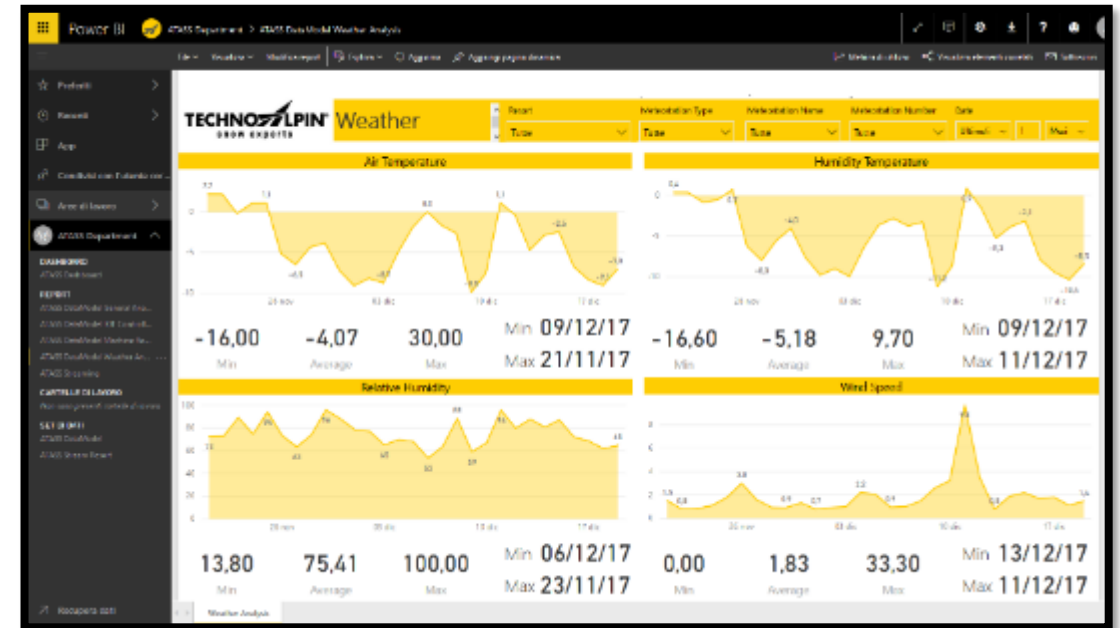


Realtime Analysis



Dashboards provide Real-Time analysis tools alerting possible critical issues and predicting possible failures

Historical Analysis



Data History from all plants can be navigated using Power BI Reports

Cli SPM

Il Cliente ha individuato, nell'ambito del programma di trasformazione digitale, il processo di "Technologies remote control and assistance" come un'opportunità per la divisione Offshore E&C di migliorarne l'efficienza, ridurne costi e rischi in termini di errori umani consentendo miglioramenti nella sicurezza.

Il cliente identifica il concetto di "manutenzione predittiva" come una tecnologia strategica da applicare agli asset. Per questo motivo, è necessario analizzare la tecnologia partendo da un caso di studio

L'idea è di trovare una possibile correlazione tra i dati registrati (parametri del sistema di controllo in tempo reale) e le attività di guasto o manutenzione non pianificata, al fine di agire una strategia di MANUTENZIONE PREDITTIVA

Obiettivi e Driver del progetto



Cli SPM

NAV LOG, TORQUETOOL, BLACKBOX

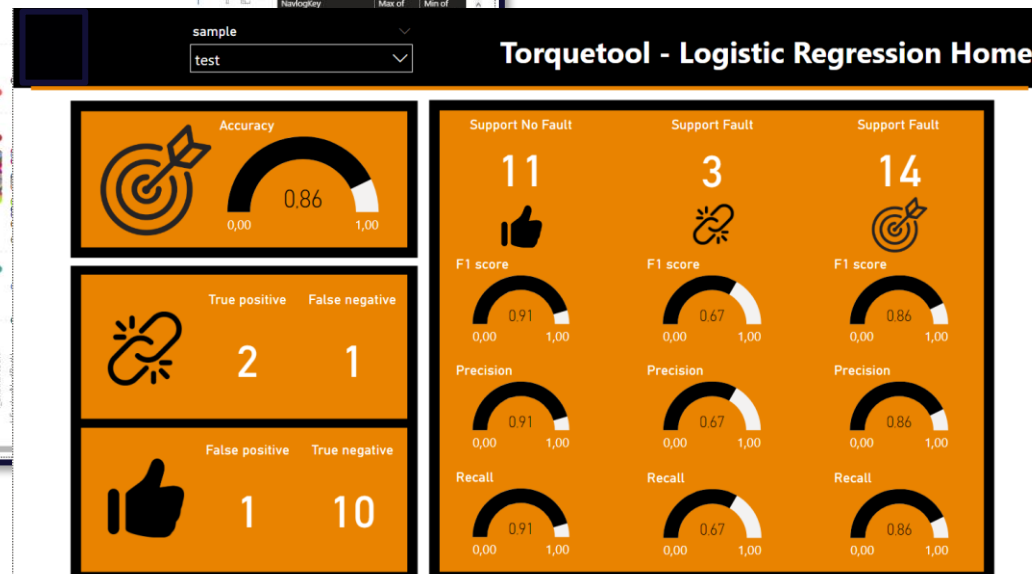
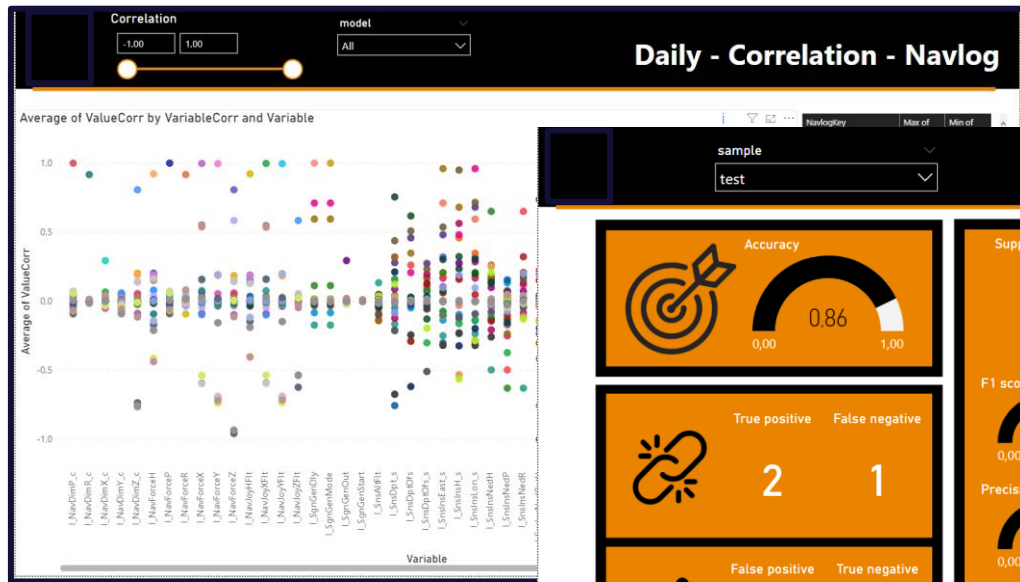
Creazione di un modello di dati di analisi

Le tabelle con dati non elaborati sono state collegate in modalità Direct Query a POWER BI. Questa attività ha creato un modello di dati che competenze l'utente ad un'analisi approfondita dei dati provenienti dai sensori durante le missioni.

Estrazione di KPI e immersioni statistiche giornaliere

Una prima serie di statistiche (media, deviazione standard, min, max) è stata creata aggregando le informazioni su base giornaliera, per tutti i giorni disponibili nelle "tabelle master"

Lo stesso tipo di analisi è stato quindi fatto solo per i valori raccolti dal ROV durante le missioni, recuperando le informazioni dal db di manutenzione.



- DATA: 8'000 Gb
- VARIABILI: 2'400