

**BRIGHT**  
*INTERNATIONAL*  
GENERAL CONTRACTING & INDUSTRIAL SERVICES

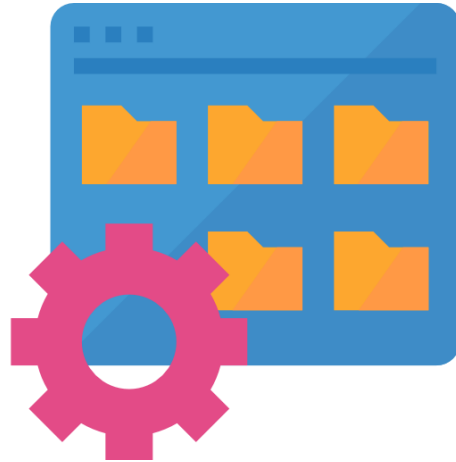


**AALAMI ENGINEERING**

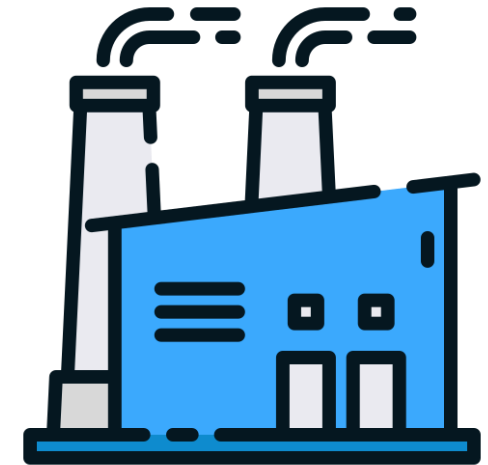
# Enabling Industrial IOT With Intelligent Automation



Enabling  
Technology for  
Smart Industry4.0



Smartest way to  
manage your  
Industry data



IOT Platform for  
Manufacturing &  
Industrial Application

# BRIGHT INT. & AALAMI ENGINEERING CONSORTIUM

برايت إنترناشيونال العالمية الهندسية كونسورتيوم



An Automation IIoT Solution - AI Company

# OUR PRODUCTS

- Energy Management Systems (EMS)
- Production Management Systems(PMS)
- Predictive/Prescriptive Maintenance Management Systems
- Warehouse Management systems(WMS)
- Automation Services DCS/PLC/SCADA



# Overview

**Bright int. & Aalami engineering consortium is a automation product engineering service organization which focuses on:**

- ✓ To accelerate development of your IOT solutions and products we provide Specialized engineering services across the entire IOT development cycle from consulting, device engineering, cloud and mobility application development, data analytics, and support & maintenance.
- ✓ We are having functional expertise and competency to provide standardized solutions for industrial automation and industry 4.0.
- ✓ Delivering tailor-made solutions that users can simply ease into with unparalleled expertise in design engineering, factory testing and commissioning of DCS, SCADA and PLC system has created benchmark and gained expert in oil and gas, pharmaceutical industry, automotive manufacturing sector, food & beverages, petrochemical and chemical industry.
- ✓ We offer multiple models for commercial engagement that can be tailored to meet your specific needs.

# WE SERVE



Power Plants



Oil & Gas Field



Chemical Industry



Pharmaceuticals



Food & Beverages



Automobile Sector

# INDUSTRY 4.0

Industry 4.0 is transforming manufacturing worldwide. Factory management needs assistance as they either upgrade existing facilities, or establish new ones that take advantage of Industry 4.0 optimization. IIoT solution architecture enables the development of intelligent Factory Solution with the use of sensor devices, edge intelligent gateways, IIoT software platforms, and IIoT Ready Solution Suite. Our IIoT Ready Solution Suite facilitate machine connection without affecting the existing process & equipment, allowing for collection of equipment status data, production data, and environmental data. Data acquisition enables production monitoring, data integration with MES, and visualization on the dashboard for production optimization and data driven decision making.

## IMPROVE

Together, we increase the value of your processes on a data-driven basis through the use of our advanced analytics and machine learning toolkit to interpret the collected data.

## DESIGN

We reduce complexity by designing a clear and user-friendly workflow with you. Dashboards, reports, export functionalities and alarm management are tailored to your application.

## ANALYSE

We apply our process knowledge to use machine learning and artificial intelligence for the purpose of analysing and organizing your data. we maximize your decision making by predicting future maintenance and Preventing downtime.

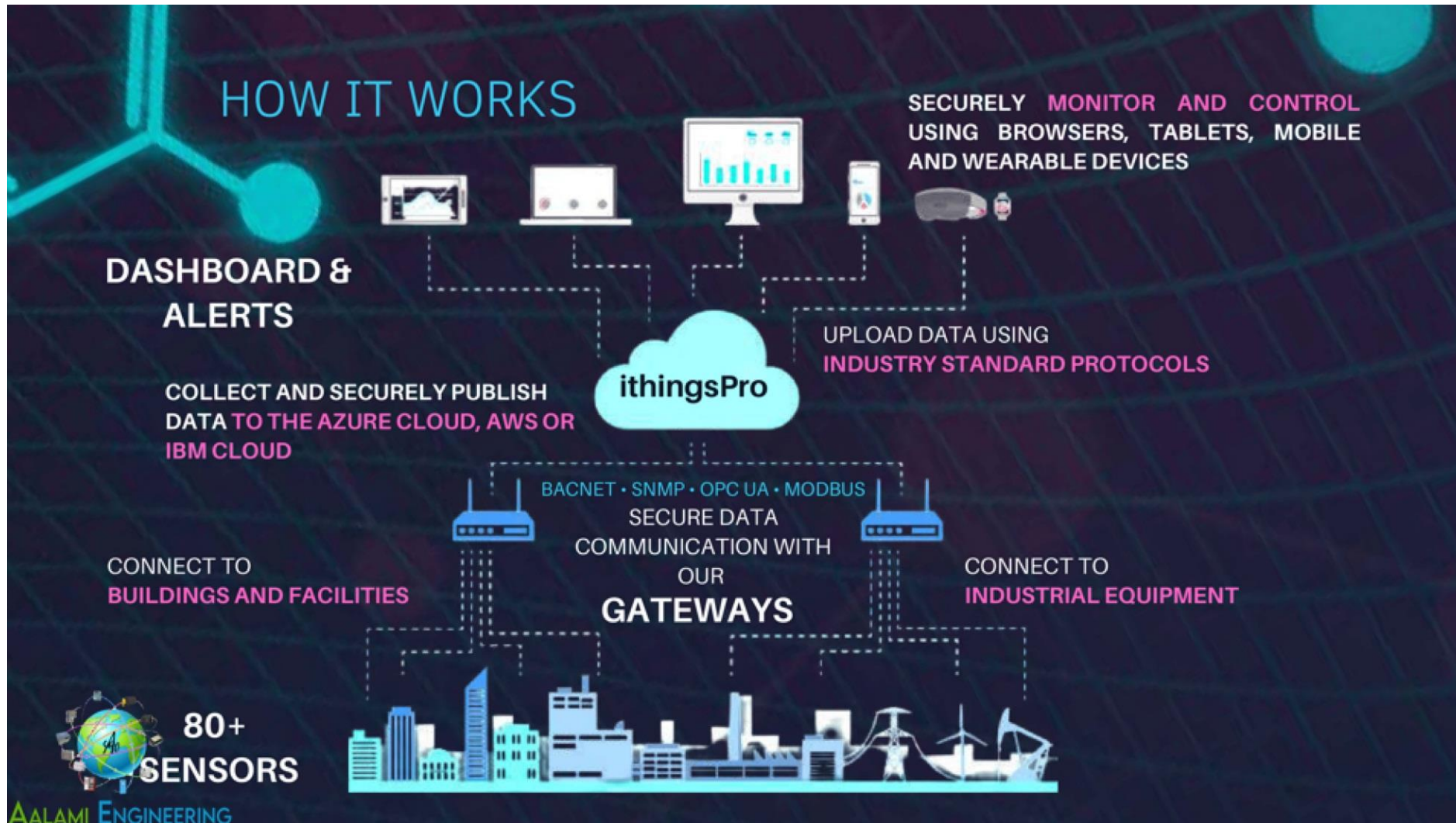
## CONNECT

Connect the full variety of data from your assets, production lines or entire plants. Intelligent edge processing allows for secure and optimized assets and factory data for streaming to the cloud.

## CO-CREATE

The entire project is based on collaborative cocreation involving Stake holders in a process brings diverse perspectives, increases the quality of ideas and instills ownership Cocreation is the driver for change innovation.

# IloT Simplified





# Case Study - Operational and Financial Impact



SINGLE SOURCE OF TRUTH TO  
FUEL COLLABORATION



END-TO-END SUPPLY CHAIN  
SYNCHRONISATION



VISIBILITY INTO THE PRODUCT  
LIFECYCLE FROM DESIGN  
THROUGH AFTER SALES



ANALYTICS-DRIVEN DECISIONS  
TO DRIVE BUSINESS AGILITY



PAYBACK PERIOD ~ 3YRS



SALES

8% ↑



INVENTORY

15% ↑



LABOUR  
PRODUCTIVITY

22% ↑



SERVICE LEVEL

3% ↑



PRODUCTION  
CAPACITY

10% ↑



PRODUCT  
RETURN

15% ↓



FORECAST  
ACCURACY

15% ↑



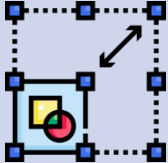





SUPPLIER  
QUALITY

8% ↑

# How the transformation journey is achieved

We diagnose, develop and implement relevant I4.0 solutions to help you achieve your strategic vision either through a structured journey, or with specific modules depending on your current status of transformation.

ENABLE & EVALUATE	DEVELOP & DEMONSTRATE	SCALE & SUSTAIN
 <p>Enable key stakeholders to speak a common language and provide clear next steps to lead and architect their successful transformation.</p>	 <p>Develop business case &amp; roadmaps aligning to the strategic business objectives.</p>	 <p>Scale the successful pilots, and other activities across manufacturing network.</p>
 <p>Analyze the current state and derive a strategic future vision. Ideate, and evaluate concepts to achieve successful transformation.</p>	 <p>Build Reference Architecture creating a Digital Foundation and Demonstrate value by executing selected Pilots.</p>	 <p>Sustain the implementation with a robust Organizational Changes management and Continuous improvement.</p>

# Enable & Evaluate



ENABLE UNDERSTANDING  
AND ALIGNMENT



DEFINE FUTURE STATE AND  
EVALUATE SOLUTIONS



## STRATEGIC VISION

Conduct stakeholder workshops & interview, document analysis and site observations to understand

- Current Digital Strengths
- Limitations of the Processes & Systems
- Pertinent challenges & inefficiencies

Based on the understanding, and business priorities, define the future state addressing the issues and pain points and align on the **Strategic Vision**.

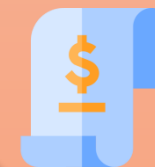
## IDEATION & EVALUATION



**Ideation:** Concepts are advised and developed to address the challenges and achieve the future state in a holistic way



**Validation:** Concepts are further developed and validated into a long list of solutions including with tech vendors



**Evaluation:** Developed Solutions are evaluated and prioritized using TUV SUD proprietary analysis framework encompassing Interdependency and Business Impact vs Cost analysis

# Energy Management System

We offers universally compatible, smart and comprehensive Energy Management Solutions aimed at optimizing energy consumption & expenses and enhancing the overall operations of Industrial & Commercial enterprises

The Solution offers proactive monitoring of energy equipment's, periodic health assessment of assets & deep insight into the consumption pattern of complex energy networks in buildings, factories, retail chains, geographically dispersed and remotely located assets, and smart city projects



24/7  
Monitoring



Energy Metering



Periodic  
Reporting



Periodic  
Maintenance



Centralized  
Controls



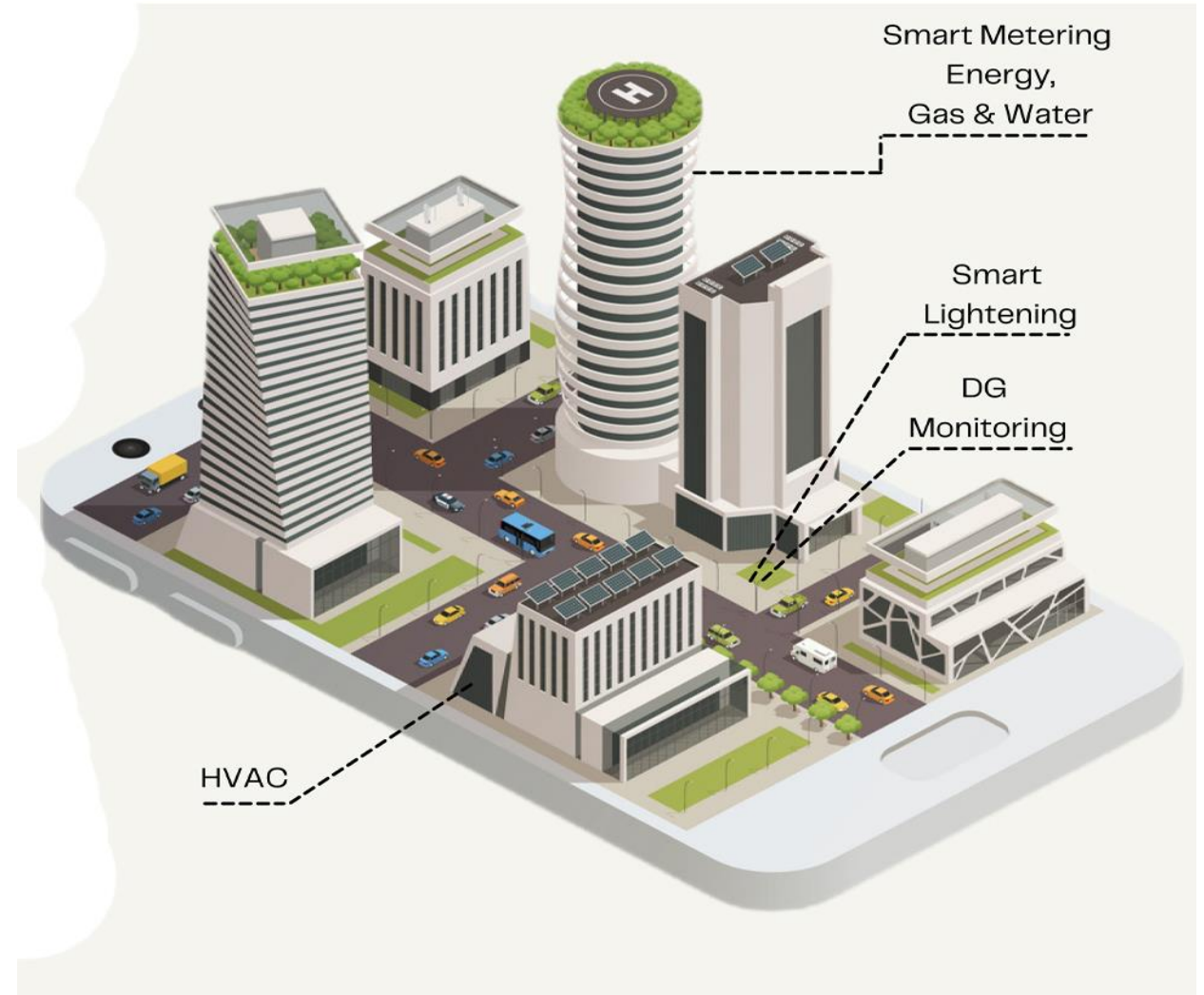
Automation



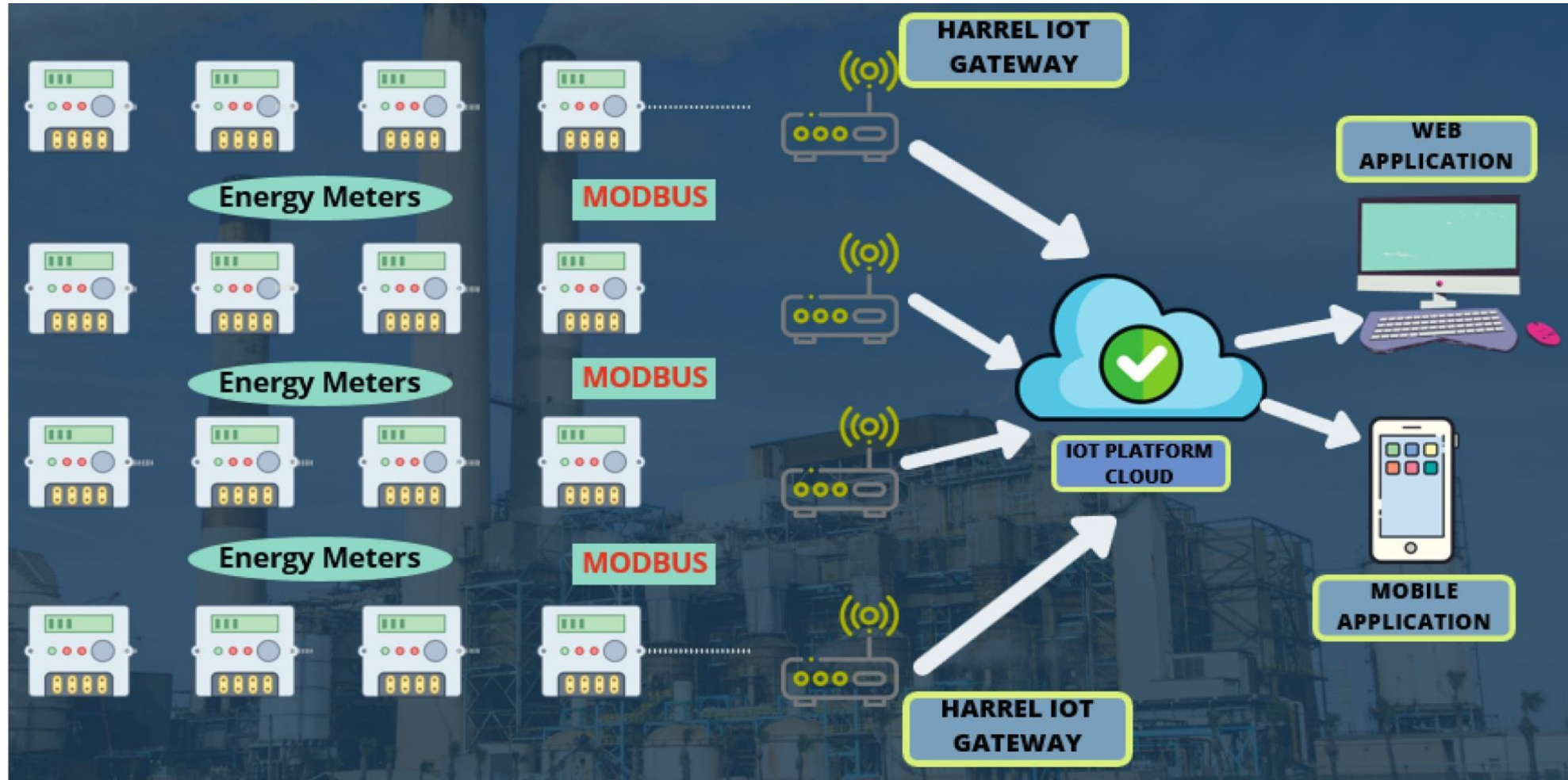
Alerts



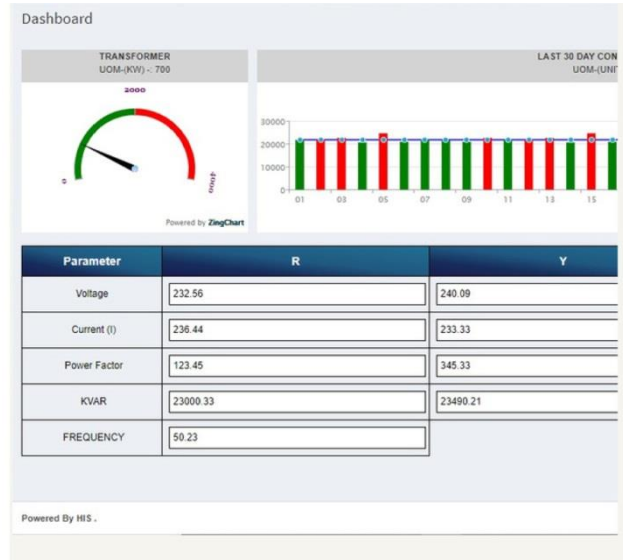
Customizable  
Widget



# Energy Management System Architecture



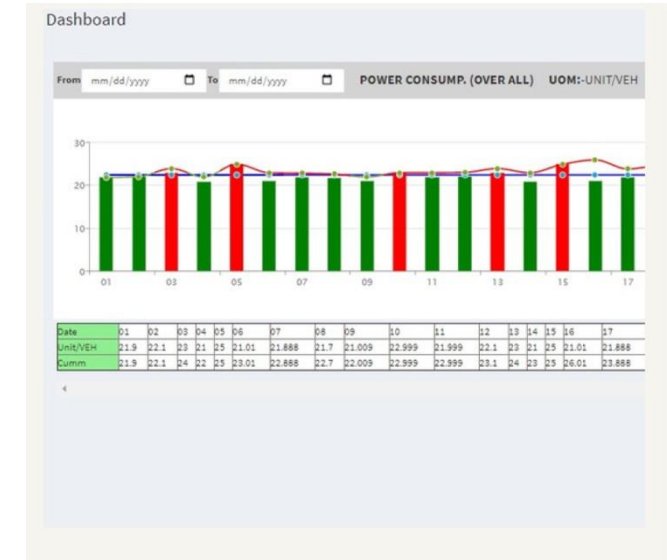
# Energy Management System Dashboard



In this Main Page Dashboard,  
We can identify and Analyze  
the overall Power  
Consumption Parameters like  
Voltage, Current, Power Factor  
and Frequency.



Here We can view a real time  
monitoring of each parameter  
Shop Wise.



Each setting can be  
customizable and input driven  
as per screen shown  
You can make multiple report  
and analyse the multiple data  
each date wise, month wise  
and year wise..

# Real Time Data Energy Consumption



# Benefits of using EMS Solution

- MONITORS HUNDREDS OF REMOTE SITES IN A UNIFIED PORTAL.
- IMPROVES ENERGY BUDGETING CORRESPONDING TO THE PLAN.
- UNDERSTANDS AND VISUALIZES THE ENERGY PROFILE OF YOUR ORGANIZATION.
- HELPS BETTER ENERGY PLANNING WITH PRE-DEFINED TARGETS / KPI.
- AVAILABLE AS ON-PREMISE & CLOUD BASED APPLICATION.

## High Level Capabilities

Energy metering and management | Asset utilization and consumption measurement | Alarms on Anomalies and escalations | Micro and Macro views of remote data | Real-time data analytics | Map-based geo visualizations | ERP integration



# Cloud EMS Video



**Cloud EMS Video Link** →

**Click Here**

# Cloud Based Production Management System

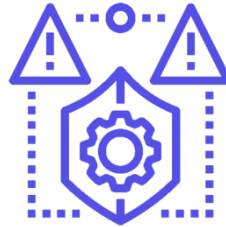
Our IIoT PMS Solution Suite helps factories & process industries to increase overall equipment productivity and efficiency by connecting equipment for Data acquisition via Edge gateways, providing real-time data reporting and visualization, empowering insightful analytics, and providing predictive / prescriptive notifications



Optimizing  
Machine Utilization



Improving OEE



Predicting  
Failures



Maintenance  
Cycles



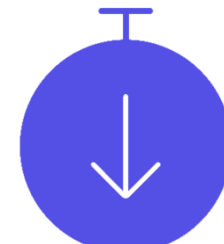
High Speed  
Production Counter



Mobile access  
Control



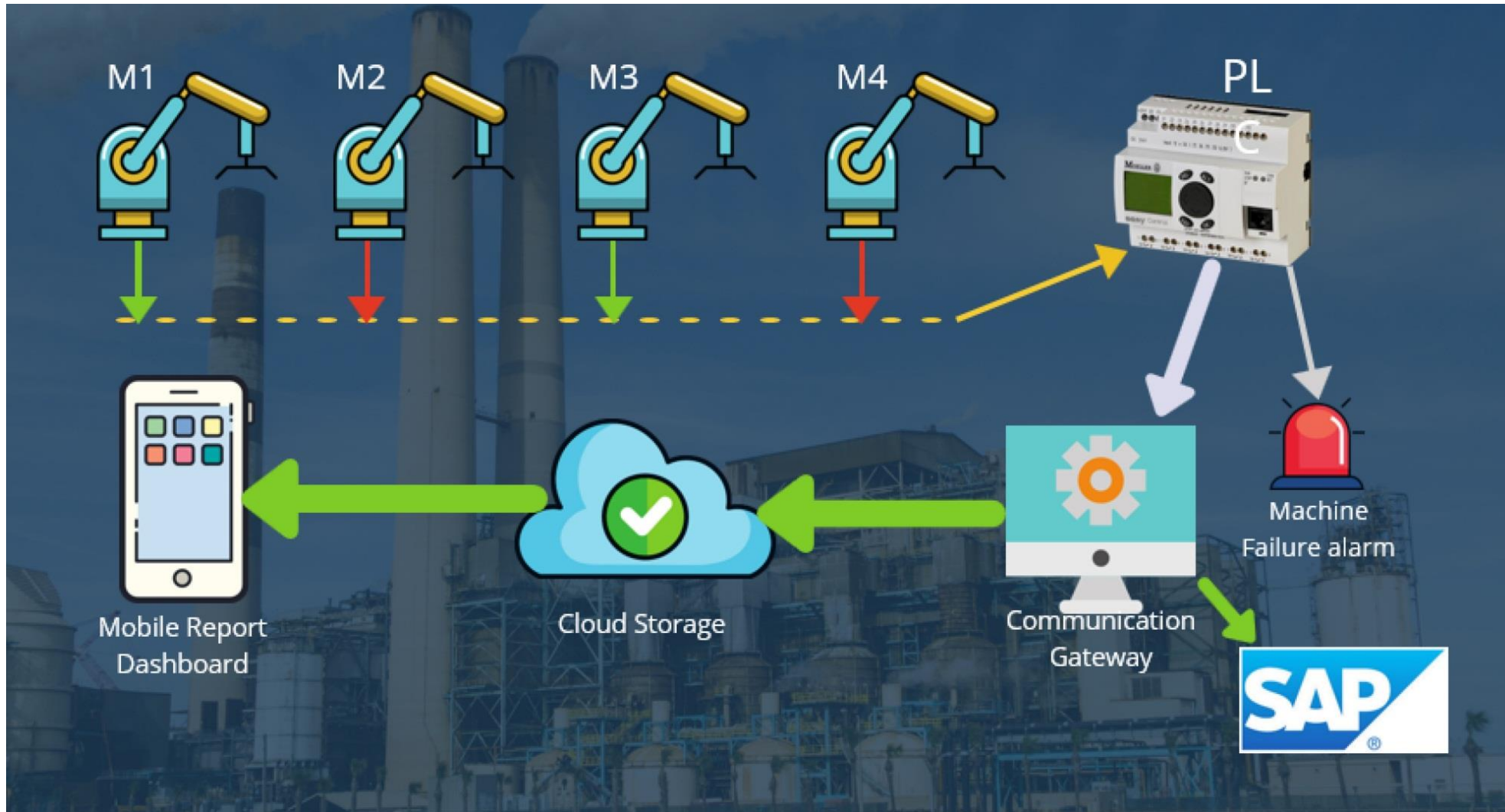
Real Time  
Alerts



Avoiding  
Downtime Errors



# Production Management System Architecture



# Cloud Based Production Management System Dashboard

ANCHEMCO Home PRODUCTION MANAGEMENT						
Cell	BFO_Line		Date	04-Dec-2019		
Current Shift Plan	10000	Previous Shift Plan	10000	Current Month Plan	20000	
Current Shift Completed	0	Previous Shift Completed	8963	Current Month Completed	35254	
Difference	-10000	Difference	-1037	Difference	15254	
Hour By Hour Prod	Hourly Schedule	Actual Production	Difference	Loss Time in min	Shift Efficiency	Sr. No.
Hour 1	1100	0	0	0	0.0	1
Hour 2	1500	0	0	0	0.0	2
Hour 3	1000	0	0	0	0.0	3
Hour 4	1500	0	0	0	0.0	4
Hour 5	1500	0	0	0	0.0	1
Hour 6	1500	0	0	0	0.0	2
Hour 7	800	0	0	0	0.0	3
Hour 8	1100	0	0	0	0.0	4
Total	10000	0	-10000	0	0	Total

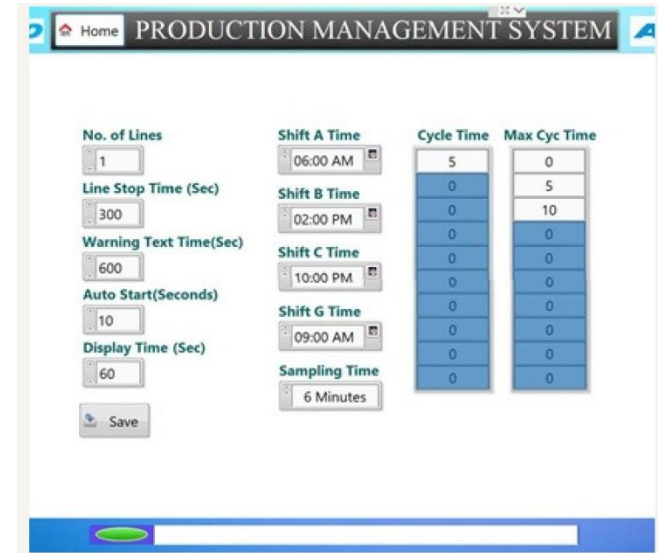
“

Display Screen – a. Rotating display with 60 seconds interval for each cell display. The Line Status indicator will be yellow if no input is received for 5 minutes otherwise it Green.



“

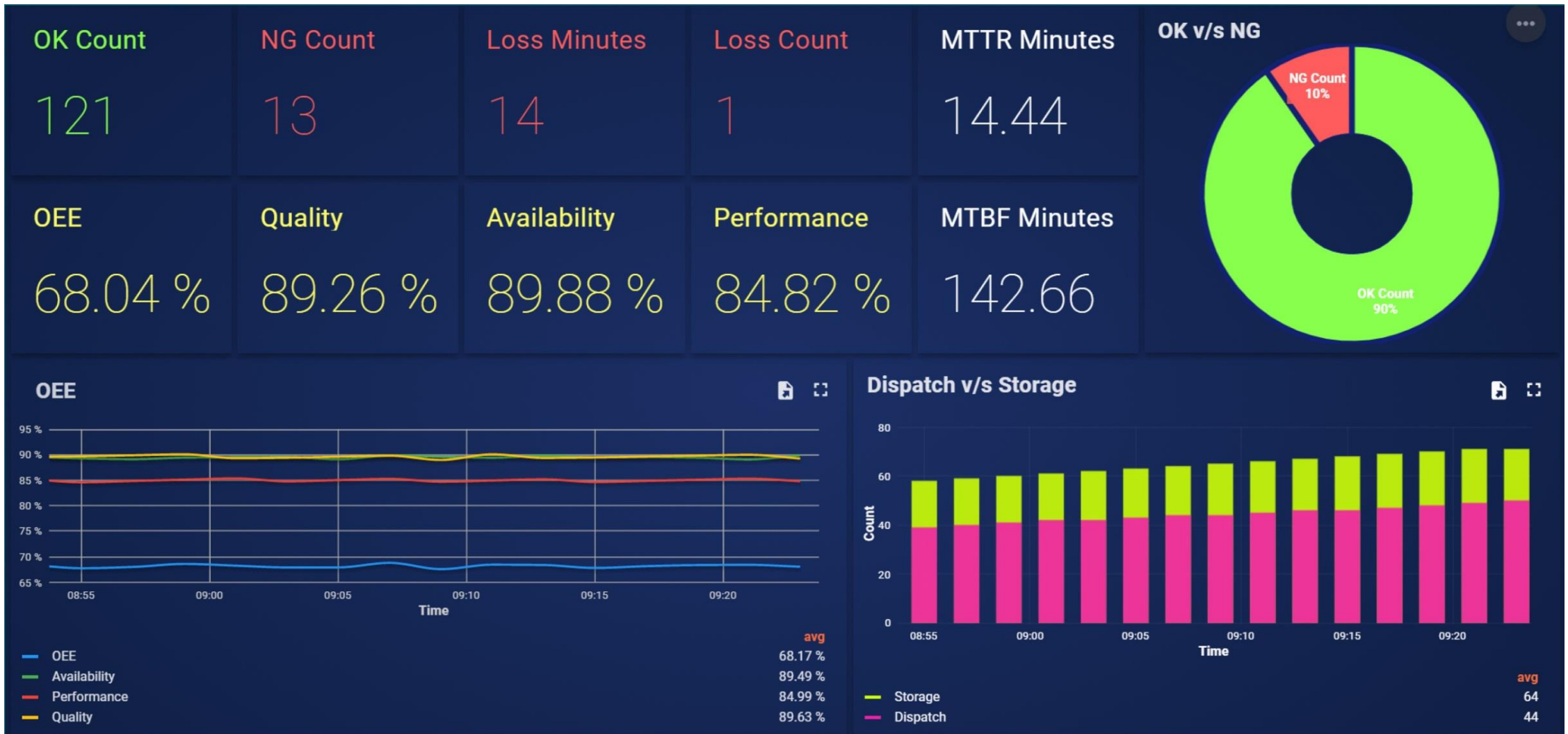
Here We can view a real time monitoring of each parameter Shop Wise.



“

Each setting can be customizable and input driven as per screen shown You can make multiple report and analyze the multiple data each date wise, month wise and year wise.

# Real Time Data Of Production Management System



# Benefits of using PMS Solution

- UPTO 90% IMPROVED OPERATIONAL EFFICIENCY.
- FINITE PRODUCTION SCHEDULING.
- MAXIMIZED LABOUR PRODUCTIVITY.
- MULTIPLE-REPORT GENERATION.
- REAL TIME C VS A DATA ANALYSIS.
- QUICK BREAKDOWN RESPONSE.

## High Level Capabilities

DAILY REPORTS | MONTHLY REPORTS | OEE REPORTS | MANPOWER REPORTS | APPLICATION REPORTS | QUICK DOWNTIME RESPONSE | CHANGEOVER REPORTS | HOURLY REPORTS

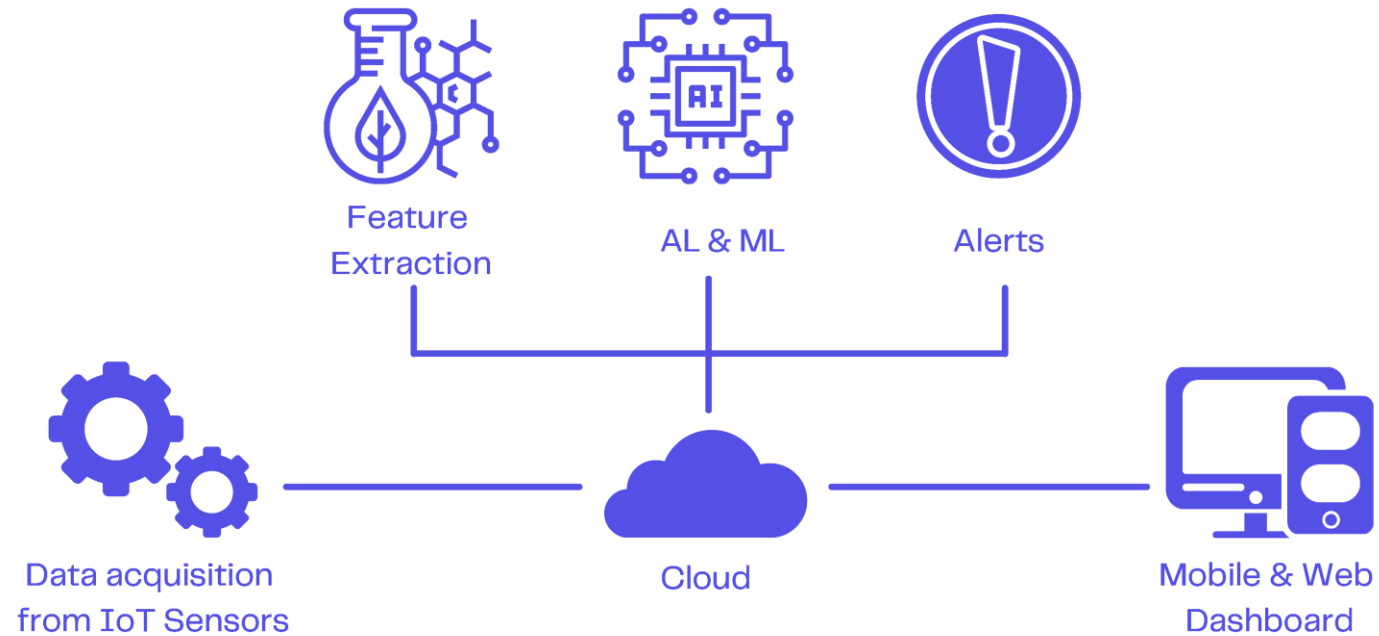
# Cloud Based PMS Video



**Cloud Based PMS Video Link** →

**Click Here**

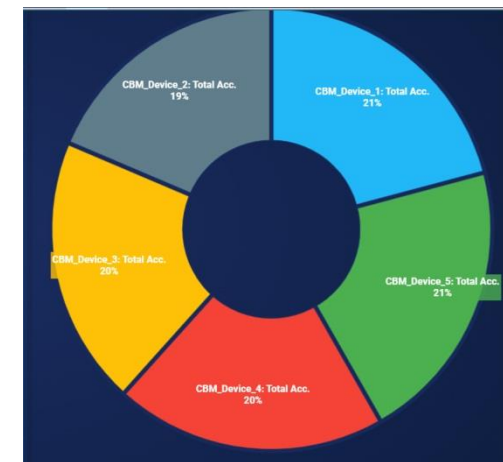
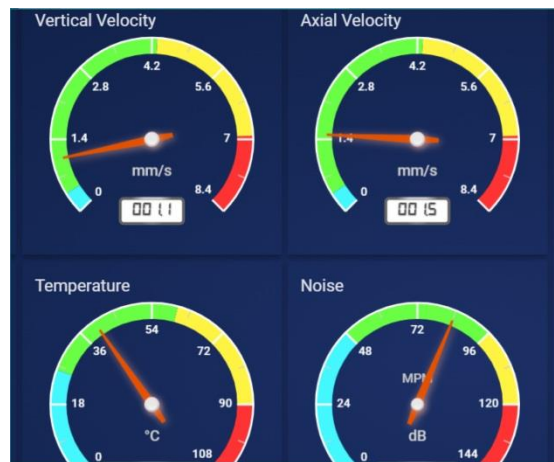
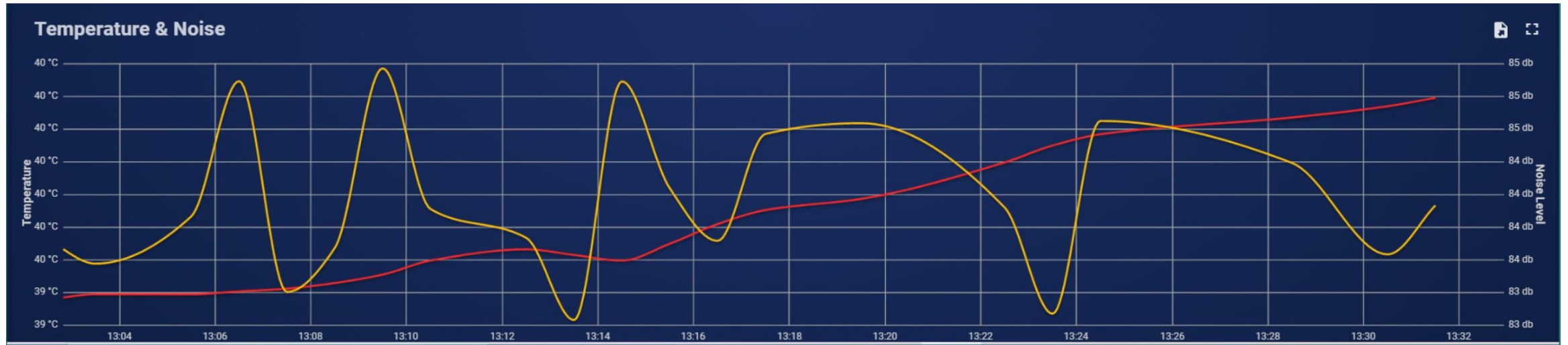
# Cloud Based Predictive/Prescriptive Maintenance Management System

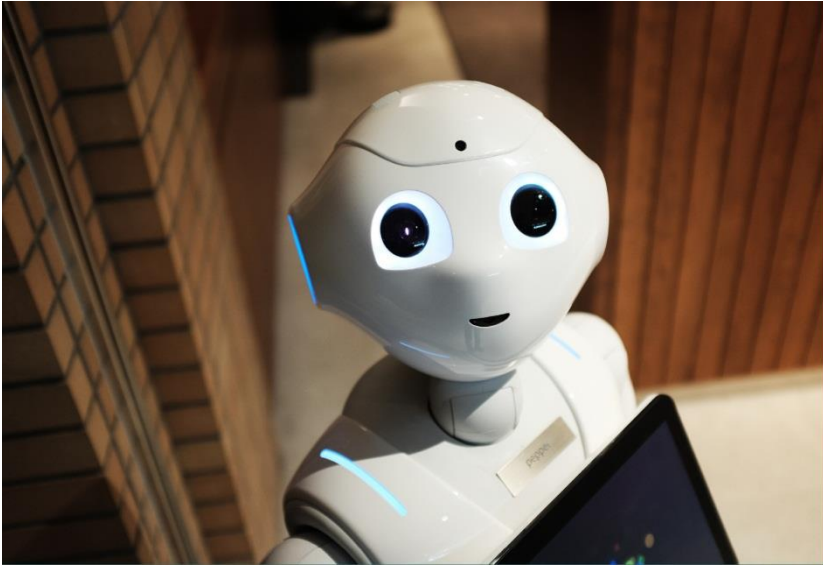


- Our IIoT solutions enables Predictive and prescriptive maintenance strategies for key industrial assets.
- Mechanical, thermal and electrical parameters are gathered on a real-time basis through advanced sensors and using advanced analytics trends are Identified and alerts are issued prior to failure.
- Predictive condition monitoring is most appropriate for simple systems, where single variable math can be used to predict failure. More complex systems involve prescriptive condition monitoring, where multiple variables are analyzed to predict the failure.
- This requires more contextually driven understanding of operating conditions and more accurate diagnosis of the pending issue with fewer false positives.



# Cloud Based Predictive/Prescriptive Maintenance Management System Dashboard





# Machine Vision

IIoT Machine Vision is a modular, validated solution powered by specialized vision algorithms that interpret data at high speed or in harsh industrial environments, which may involve low light, heavy vibration, fast-moving products, or high temperatures

Our Machine Vision enables incredibly high accuracy and real-time responses. Machine vision has a number of compelling applications that help reduce costs and increase efficiency in industrial settings, including

- **Quality assurance and inspection.**
- **Positioning and guidance.**
- **Measurement & Identification.**
- **Safety & Security.**
- **Worker Behaviour.**
- **Asset Management.**



# Augmented Reality-AR Solutions for Smart Manufacturing

Augmented reality is a highly visual, interactive method of presenting relevant digital information in the context of the physical environment—connecting employees and improving business outcomes. Industrial augmented reality offers a better way to create and deliver easily consumable work instructions by overlaying digital content onto real-world work environments.

Implementing AR technology in industrial enterprises are boosting workforce efficiency and safety, improving operational performance, and lowering costs across the factory and the field.

Up To **40%** ↑  
Improvement  
new Hire  
Productivity.

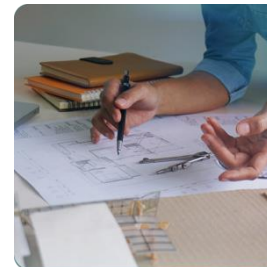
Up To **50%** ↓  
Reduction in  
Training  
Cost.

Up To **35%** ↑  
Improvement  
in First Time  
Fix Rate.

Up To **25%** ↓  
Reduction in  
Scrap and  
Rework Costs.



Hands On & Safety Training.



Product Design & Development.



Maintenance as per Requirement.



Complex Assembly



# IoT Integration With CMMS

Connecting the Dots to a CMMS: Adopting various technological solutions through the IIoT is only one component to a larger objective. That objective is better overall company operation that reduces downtime and maximizes efficiency

## Here's how this connection can work within an operation:

- IIoT machinery senses specific parameters which are transmitted and collected as data.
- Various machine controls, including programmable logic controls (PLC) and OPC technology, can send their data over to a CMMS.
- Based on that Data, automated responses such as maintenance work orders, mobile alerts, and other notifications can be configured..
- These systems can be further retained to incorporate proactive maintenance.
- Automated maintenance operations can certainly help speed up downtime or prevent catastrophic failures. Beyond this benefit however, there's even more that a well integrated CMMS/IIoT solution can offer.



# Smart Digital Signage

Digital signage IoT solutions with reliable, high-speed connectivity and connectivity management tools. Digital signage allows brands and enterprises to deliver tailored messaging to target audiences in Realtime Smart signage solutions make it easier, quicker, and more cost effective for organizations to provide consumers with the information when they need it:



Smart signage solutions improve operational efficiency by allowing the user to remotely design custom messages and quickly display them in multiple locations.

- Global data, local visualization.
- Training on the job with video and infographics.
- Digital signage technology enhances employee safety.
- Visualize manufacturing processes, at every step, including time left till completion.
- Alert staff to manufacturing or packaging issues such as weight, missing parts, etc..
- Delivering interactive, location-based information in real-time can help improve the customer experience by providing them with relevant information in a timely manner.

# Fleet Management

IIoT based Fleet Management solutions help you manage your assets on the road through asset tracking and real-time monitoring via voice and data communications. We use advanced IoT ready hardware including GPS trackers, BLE beacons, Active/Passive RFIDs, combined with cloud capabilities. Edge computing and Web/Mobile dashboards to automate workflows, data capture and vehicle & asset tracking

## Benefits

- Accurate stock position
- Improved customer service
- Optimize routes and increase productivity
- Reduce operational expenses
- Increase fleet security and driver safety
- Remotely diagnose maintenance requirements.



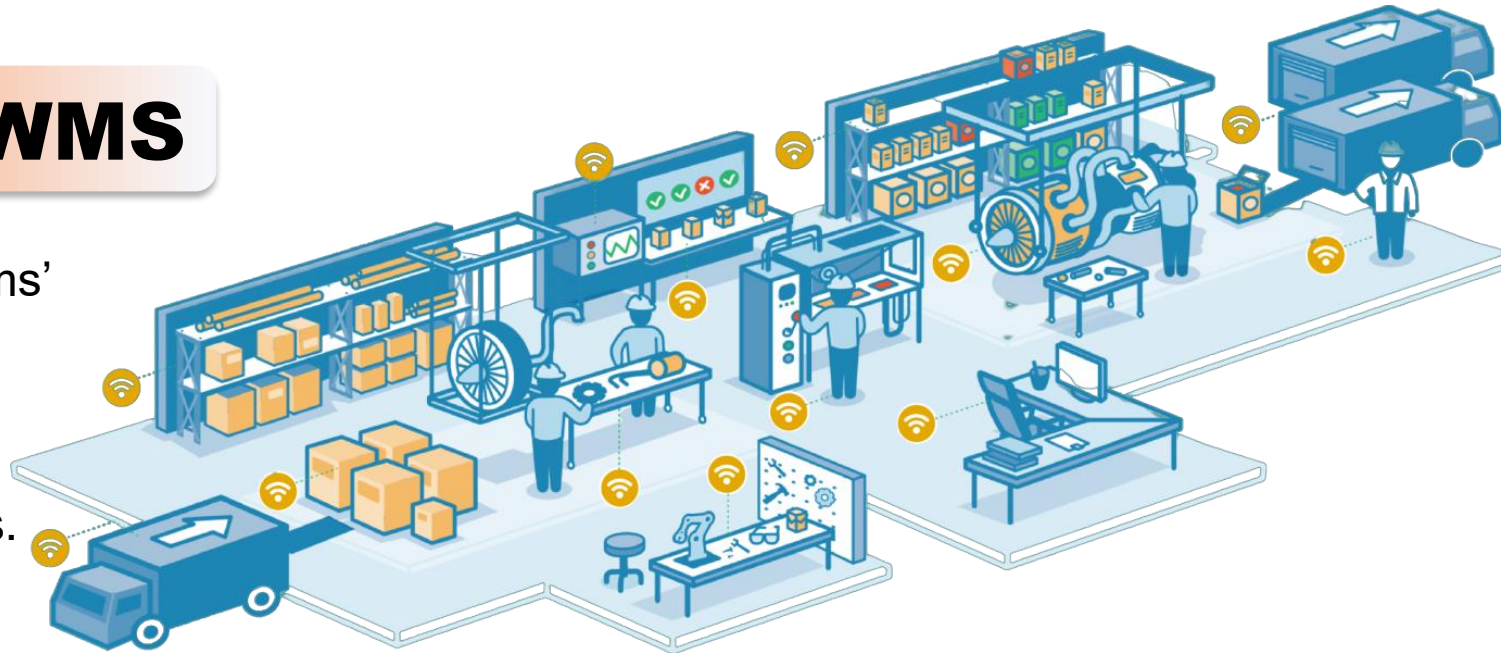
# IIoT Warehouse Management System

Whether you are responsible for a manufacturing warehouse, a distribution center, or managing inventory in your retail back-room, being well-connected and having visibility into all your assets, people, and processes at all times is crucial to having an integrated, productive, profitable, and compliant supply chain. IIoT WMS solution suite connects each operational area in your warehouse to give you the agility to realize transformational gains.

Bringing IIoT into a warehouse or factory means deploying technology through connected devices, such as enterprise mobile computers, barcode scanners, radio-frequency identification (RFID) readers, wearables, sensors, and aisle and shelf beacons. By enabling both the human and machine to scan in activity and asset as they work, it helps the on-site workforce be more productive, streamlining working processes and identifying the causes of workflow improvements.

## Advantages of IIoT WMS

- Constant visibility into the inventory items' quantity, location and movements.
- Inventory optimization.
- Identifying bottlenecks in the operations.
- Lead time optimization.



# Warehouse Management System Dashboard

Order Overview

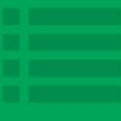
Make A Plan



Place Order To Bay



Order List



Generate Report



Inventory Tracking

## Update Details

Bay No.	Batch No.	SKU	Quantity	Status
A1	11-0012-221	BPWQ011CHDCVL	100	PASS
B2	11-0003-221	BPWQ011CHDCVL	40	HOLD
C1	11-0012-321	BPWQ011CHDCVL	100	PASS
C3	11-0001-221	BPWQ011CHDCVL	2	HOLD
A2	11-0012-321	BPWQ011CHDCVL	100	PASS
C6	11-0012-321	BPWQ011CHDPMF	500	HOLD
B1	11-0012-321	BPWQ011CHDCVL	100	PASS

## Dashboard

Production Plan



Insert Production



Update Product



Verify Production



Search Product



Add SKU



Update SKU



Update Bay



## Product Overview



# Warehouse Management System Video



**Cloud EMS Video Link** →

**Click Here**

# BRIGHT INT. & AALAMI ENGINEERING CONSORTIUM

## Our Unique Offerings

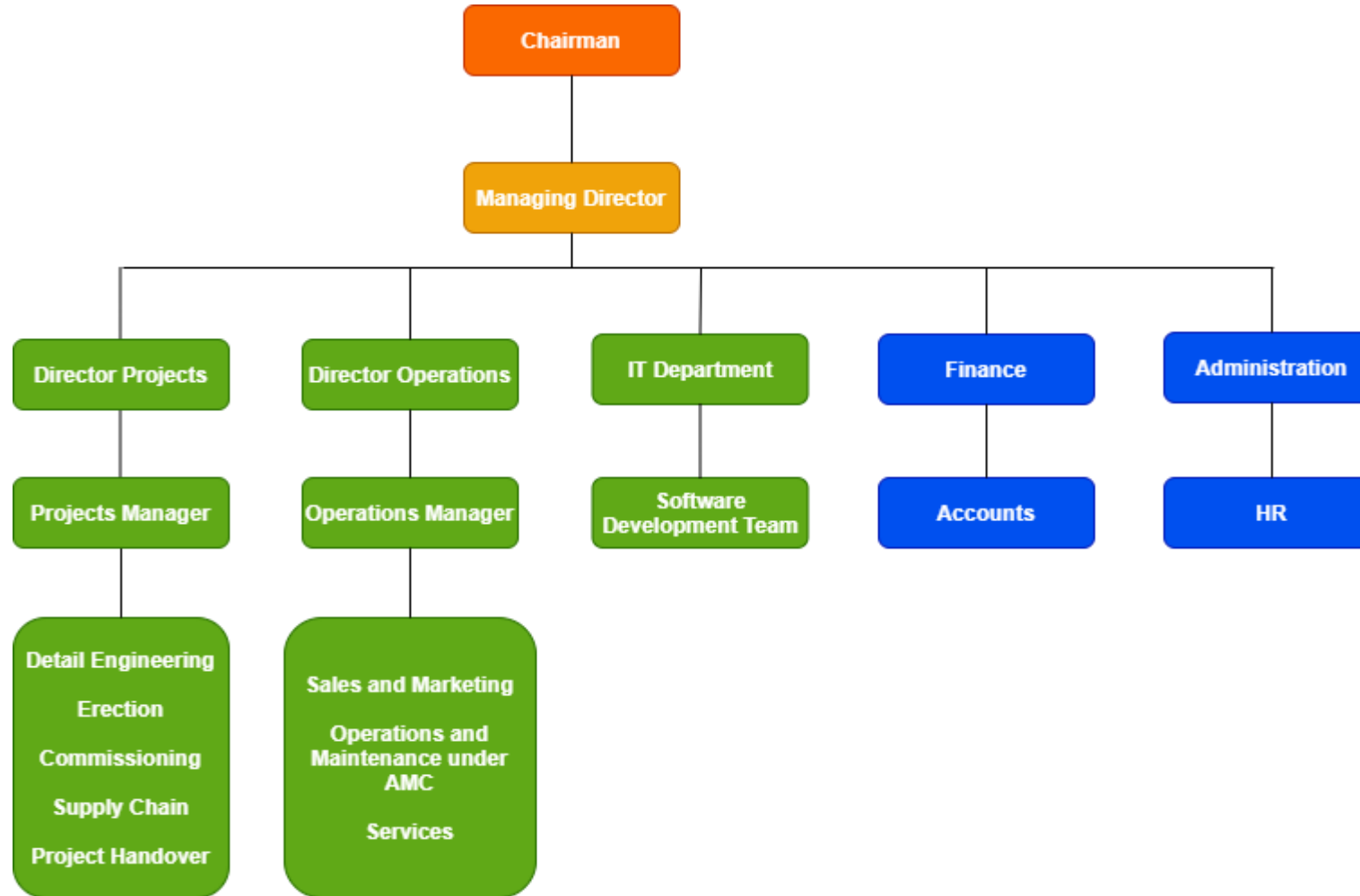
- Vendor agnostic platform: Works with any PLC, RTU, PAC, IIoT device including IT and business systems.
- Hybrid IIoT platform - cloud and on-premise architecture for flexibility.
- Unique centralized deployment for seamless change management and continuous improvements..
- Web-based access.
- Unlimited scalability: unlimited clients; unlimited IO.
- Most secure industrial platform with node to node TLS encryption.
- High performance integrated Process Historian including cloud-based SaaS offering.



## IIoT Hardware

- IoT gateway
- 4 Channel WIFI Data Logger.
- 8 Channel WIFI Data Logger.
- 24 Channel PC Based High Speed Data Logger
- LORAWAN (WoMaster)
- Vibration Sensor Module with Cloud Connectivity

# Organizational Chart



# Case Studies: Sleepwell

## Background

- ✓ A foaming company manufactures mattresses they have 100 machines need to monitor all these machines throughout India.

## Need

- ✓ Real-time monitoring of all the breakdowns and running status of machines throughout India to ensure process smooth and subsequently achieve the production target.

## Challenges

- ✓ To monitor breaks and breakdowns which workers taking on the shop floor.

## Solutions

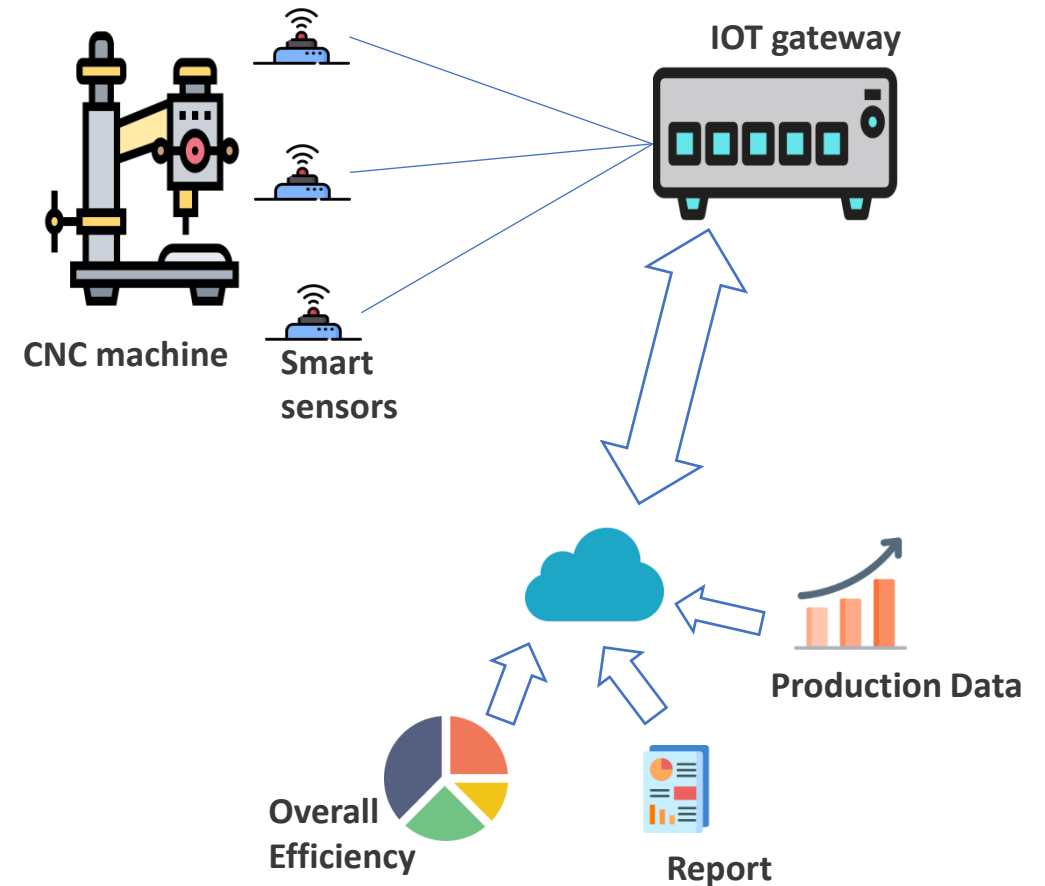
- ✓ We have installed 4 channel data-logger getting values from the machine

## Result

- ✓ After one week observation we have identify what are the major causes for the poor performance of the machine steps to improve the efficiency of machine

## Value Driven

- ✓ Expected potential mechanical breakdown of 8 to 15 hours was avoided.
- ✓ Saved the raw materials from degradation, saving 15% of raw material cost.



# Case Studies: Werma USA

## Background

- ✓ To improve the Productivity, Overall Efficiency and Status of the 45 machines.

## Need

- ✓ Real-time monitoring of all the breakdowns and running status of machines to ensure process smooth and subsequently achieve the production target.

## Challenges

- ✓ To monitor breaks breakdowns and remotely access for all the 45 machines.

## Solutions

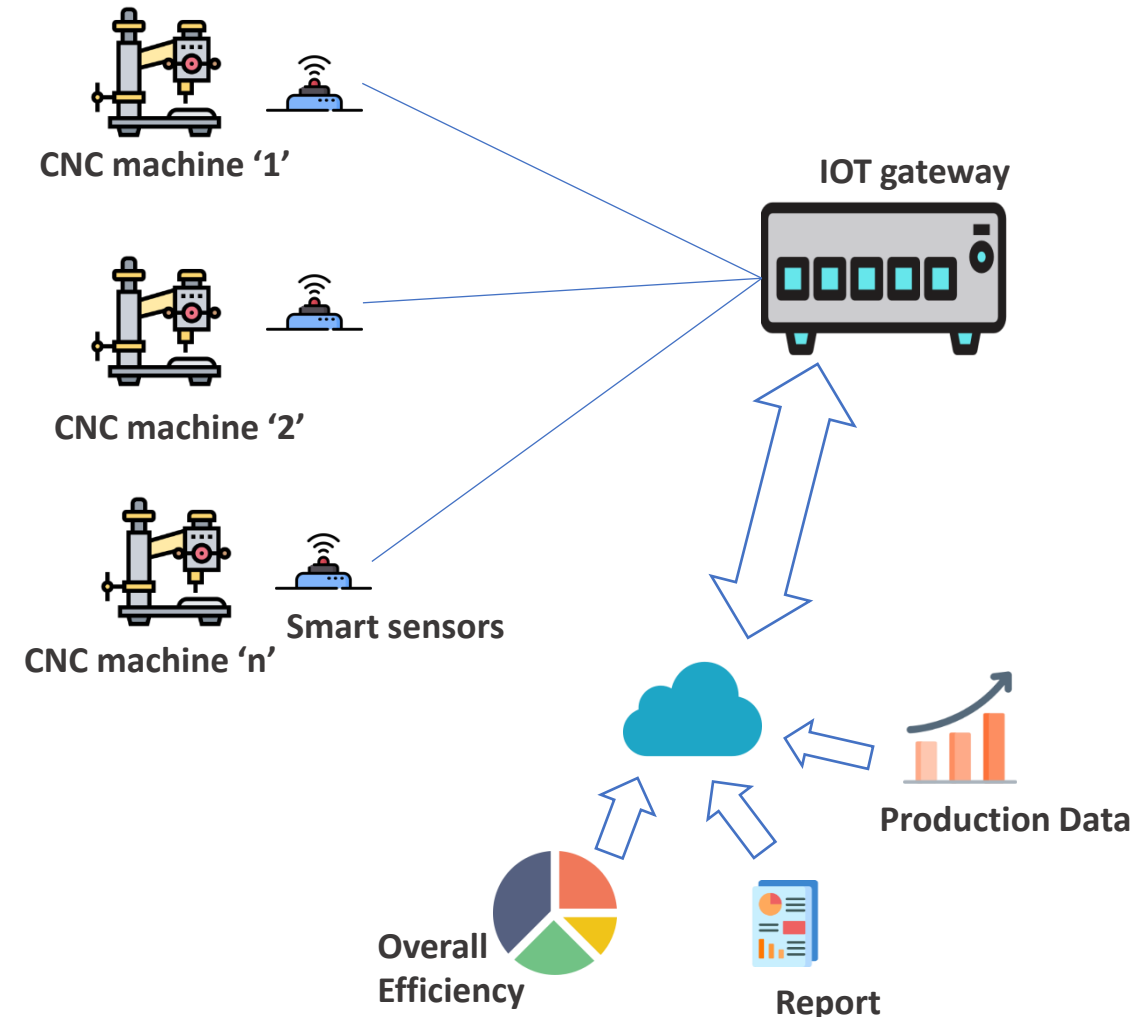
- ✓ This is achieved 4 channel data logger with smart sensors.

## Result

- ✓ Improved productivity and efficiency achieved on all machines.

## Value Driven

- ✓ Expected potential mechanical breakdown of 12 to 14 hours was avoided.



# Our Clients



**Smart Kitchen-South Korea**

Convert all kitchen appliances to IOT based



**Voxney Inc-USA**

Dashboard Dev for gateway



**Olemist-Australia**

Social Distancing



PMS, Temperature and Humidity monitoring system



**Enopte-Australia**

Solar inverter IOT gateway



**GEARING CAPITAL**

**Gearing Capital-USA**

BMS



**HYUNDAI**

Digitalizing paint shop



**Sheela Group**

Machine Efficiency Monitoring, Production monitoring & Wireless network for crane



CNC Machines Monitoring [CBM]



Production Management System



**SMART FARM**

**Smart Framing-Australia**

BMS



**Porter&Curts LLC-USA**

Developing dashboards by taking data from OPC server



EMS, Condition based monitoring & Production Monitoring



**Pernod Ricard**

EMS, WMS & PMS



Quick Response system, Production monitoring system Statistical process control



Line Communication System

## Contact Details

Get in Touch with us, We'd love to hear your thoughts.



**+966 (13) 3614360**



**sales@brightintl.com**  
**bdm@brightintl.com**  
**aalamieng@brightintl.com**



**www.aalamiengineering.com**  
**www.brightintl.com**