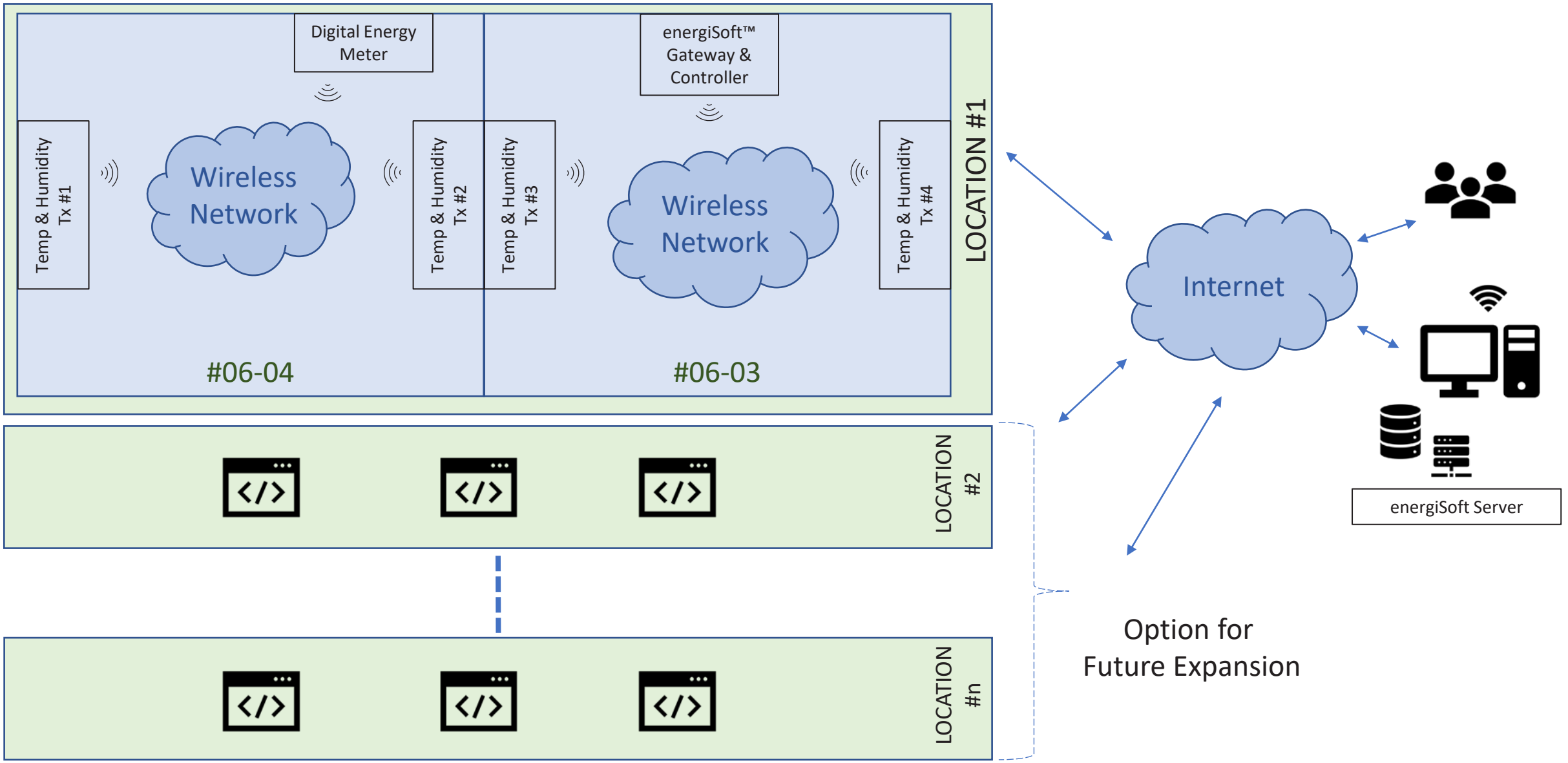
SMART FACTORY / WAREHOUSE SOLUTIONS

IIOT & Machine Learning using
energiSoft™ & powerKitz™

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Basic System Layout Sample



Our Solution ….In Detail

How is this going to change?

Existing Methodology

Every Day

- Meter Reading By Maintenance Team
- Meter Reading from Client End

→ Data Validation and Calculation → Sign-Off from Maintenance Team and Client → Billing Paper Bill / Soft Copy of Bill

Our Solution



Every Hour/ Minute

→ Automated Hourly Data Collection and Storage → Web Interface to access Real Time and Historical Data → Billing

Billing → Postal, E-mail, SMS

→ No Manual Intervention required





Device based consumption reports





Time based consumption reports

Data Feed for Phase II for Optimization













** Statistics reveal that Electricity causes to almost 62% of fire accidents worldwide

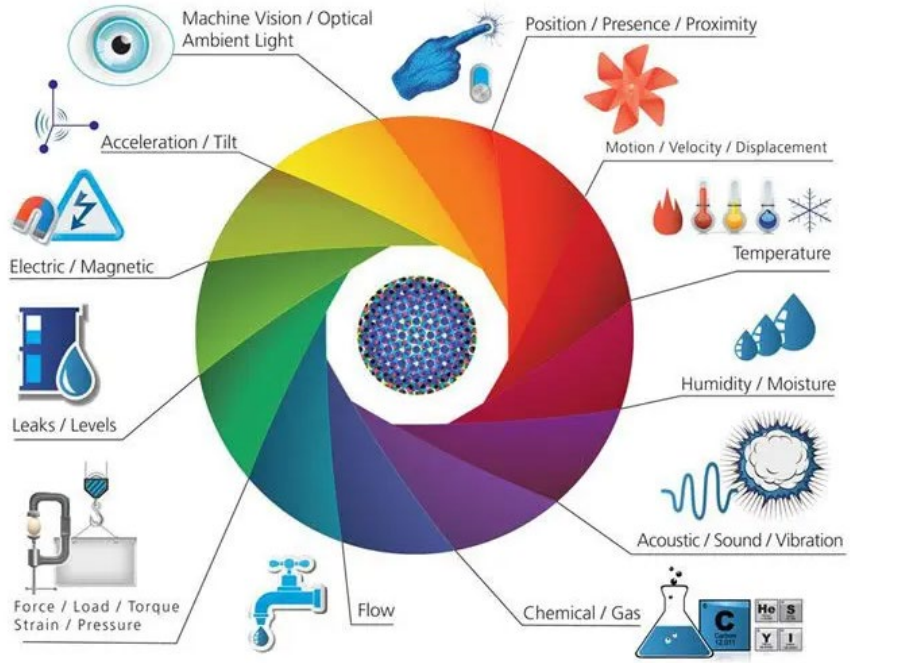
- Our Solution (Continued)

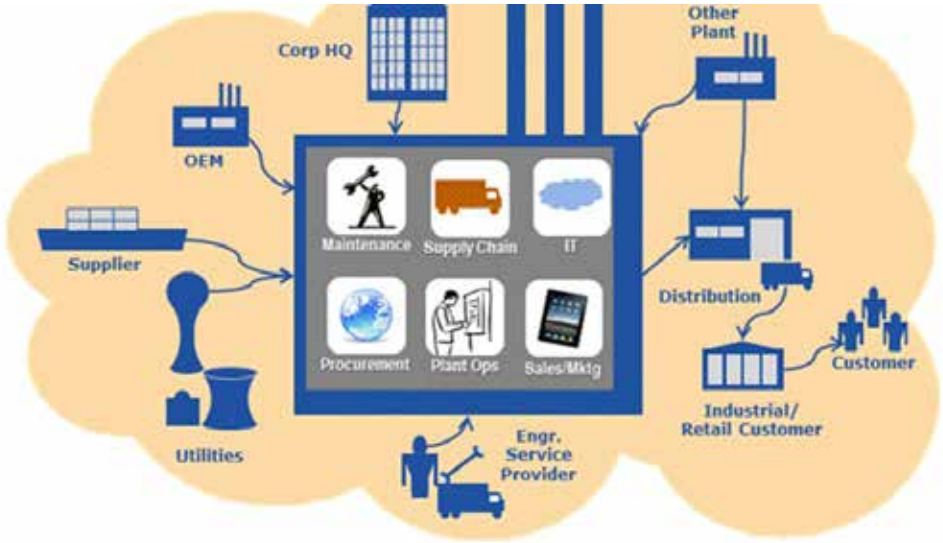
Benefits:

- **No more manual process of data collection and consolidation for Billing to be taken by building management nor its clients**
- **Accurate Data as it is automated**
- **Real time and Historical Data available and retrievable at any given point of time**
- **Waiting Time significantly reduced for building management Team and Their Clients**
- **Billing is completely automated with advanced features (Via SMS, E-mail, Postal)**
- **All Clients and Building Facility Department Personnel would be able to access data from anywhere as it is a web interface**
- **Alerting feature provides us a heads up to understand any failures of devices. A Pro-active monitoring instead of reactive complaints from customers**

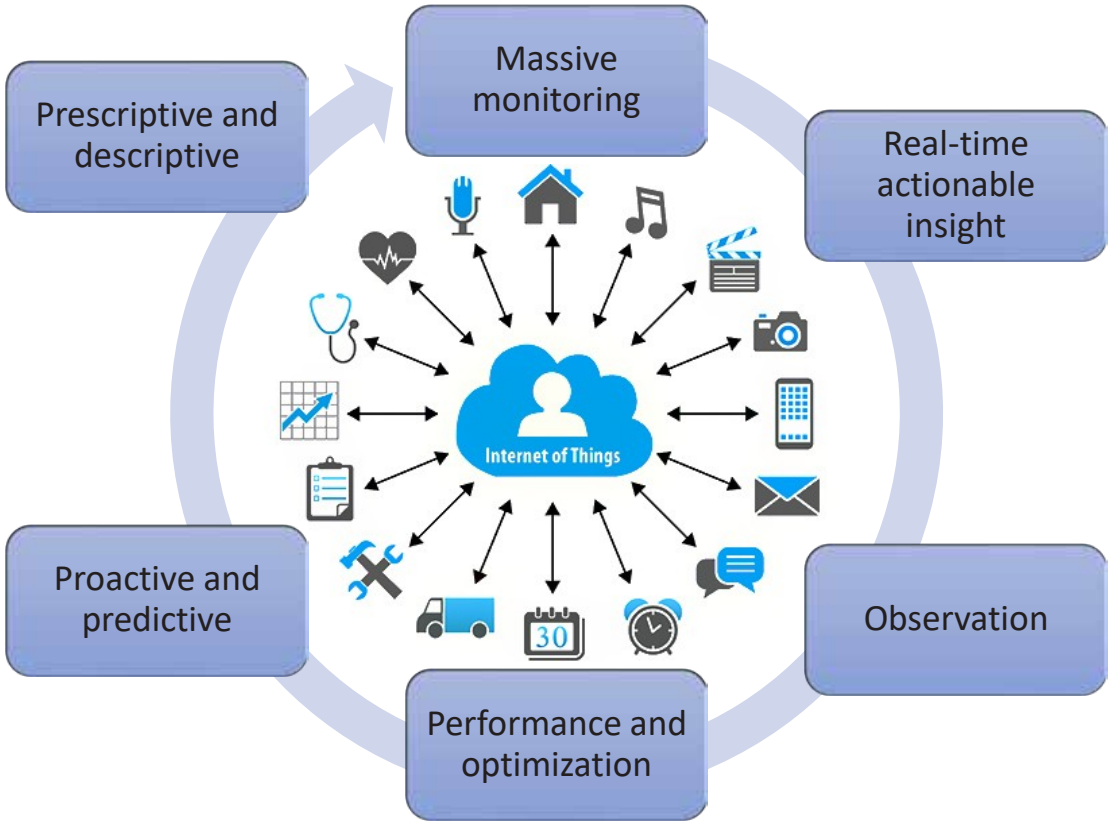
Our Integrated solution lets you:

- Locate bottlenecks and eliminate downtime
- Increase production worth upto 10%
- Integrate legacy equipment, no rip-and-replace required
- Automate commands -have full transparency in the production process
- Remotely monitor entire factory workflow
- Make better future decisions with business-critical knowledge





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Process Optimization



Analyze & Process Improvement



Load Optimization



Analyze & Baseline Calculation

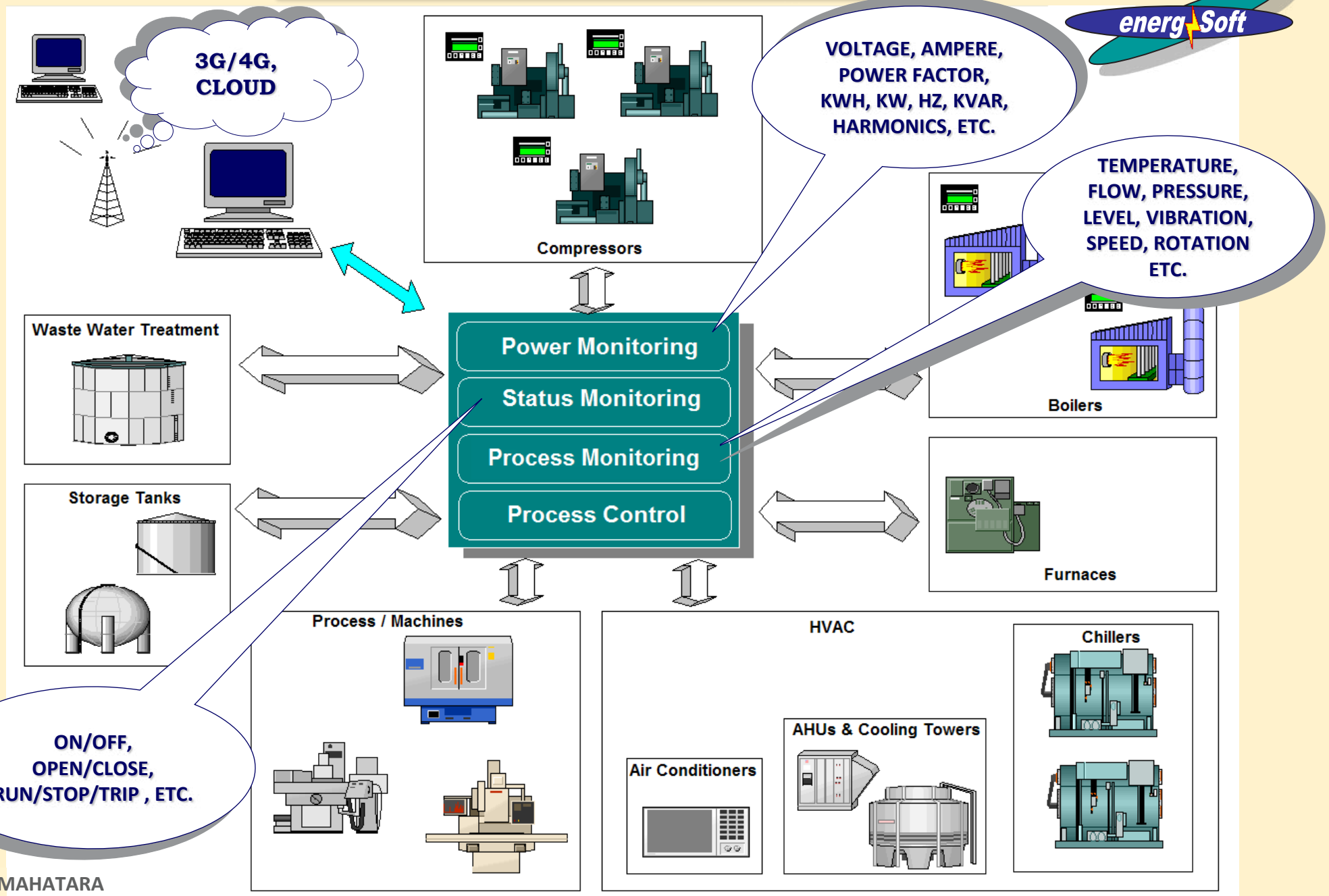


Energy Monitoring

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Intelligent Energy Solutions

FACTORY / INDUSTRIAL APPLICATION



Key Features

- Real time overview of production processes including machinery downtime and its reason
- Rapid and actionable feedback enabling higher uptime on machines
- Data-driven analysis reveals true bottlenecks and ensures qualified replacements
- Cloud-based system accessible from anywhere with internet connection
- User-friendly, visually appealing and automated dashboard
- A holistically flexible and scalable system according to your facility’s needs
- User's access and device management from one portal
- Lean manufacturing processes to reduce energy usage and carbon footprint
- Simple touch panels for each operator to input current status by a single touch

Energy management

In many industries, energy is frequently the second or third largest operating cost behind material and direct labor. However, many companies lack cost effective measurement systems, modeling tools, and/or performance management tools to optimize energy use in individual production operations, much less in real-time across multiple operations, facilities, or an entire supply chain.

There are numerous ways that IIoT and automation of environmental controls such as HVAC and electricity can create cost savings for manufacturers.

Connected energy solutions can provide peak demand charge avoidance and enable economy model operations.

Certain IIoT-enabled systems also offer integrated weather data and prediction analysis to help manufacturers understand expenses and plan energy usage.

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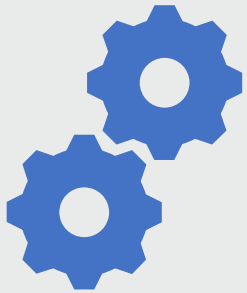
Connected and Intelligent System

Connected and intelligent system of systems that can actually implement the concepts of event-driven manufacturing.

The benefits of visibility will extend beyond the enterprise to a wide range of suppliers and third party providers of services, consumables, and capital goods. IIoT systems will enable extensive involvement by third party suppliers in the direct operations and maintenance of manufacturing plants with new service and supply business models based on increased visibility and remote monitoring.

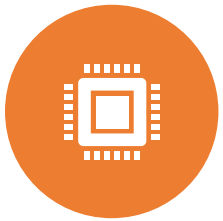
Suppliers of capital equipment may now be able to offer business models that comprise production-based revenue rather than capital equipment sales predicated on equipment that could be monitored for both performance and maintenance status. Parts and services suppliers within maintenance, repair and overhaul (MRO) will use IIoT to monitor distributed inventories, tank levels of process fluids, perishable parts conditions, and production rates. This will create entirely new and very closely linked business relationships between manufacturers and their equipment suppliers.

Predictive and Proactive Maintenance



- Manufacturers have widely accepted the concept of preventative and condition-based monitoring but many remain in the process of implementing these programs, often extending projects because monitoring technology continues to improve and change.
- Today, lower cost sensors, intelligent sensors, wireless connectivity, and big data processing tools make it cheaper and easier to collect actual performance data and monitor equipment health. If a manufacturer has equipment that is designed to operate within a certain temperature, vibration, or stress range, the company can use sensors to actively monitor when it goes out of range and prevent malfunctions.
- Measuring vibrations, as mundane as that appears to be, to detect out of specification machines and equipment is a frequently cited example of condition monitoring. Businesses, particularly industrial businesses, lose money when equipment fails.
- With next generation intelligent sensor information, IIoT can monitor, collect, and analyze data to provide a manufacturer with information to improve overall equipment effectiveness (OEE), save money by minimizing equipment failure, and allow the company to perform planned maintenance based on predictive condition monitoring.
- Moreover, by applying advanced analytics to long established equipment monitoring practices, factory operations managers can begin to apply longer term asset management practices that will prolong the operational lifecycle of assets and significantly reduce operational costs.

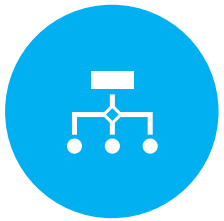
Connected Supply Chain



JUST IN TIME MANUFACTURING HAS BEEN AROUND FOR DECADES, BUT IIOT, ANALYTICS AND PRODUCTION NETWORKS WILL HELP MANUFACTURERS GAIN A BETTER UNDERSTANDING OF SUPPLY CHAIN INFORMATION THAT CAN BE DELIVERED IN REAL-TIME.



BY CONNECTING THE PRODUCTION LINE AND BALANCE OF PLANT EQUIPMENT TO SUPPLIERS, ALL PARTIES CAN UNDERSTAND INTERDEPENDENCIES, THE FLOW OF MATERIALS, AND MANUFACTURING CYCLE TIMES.



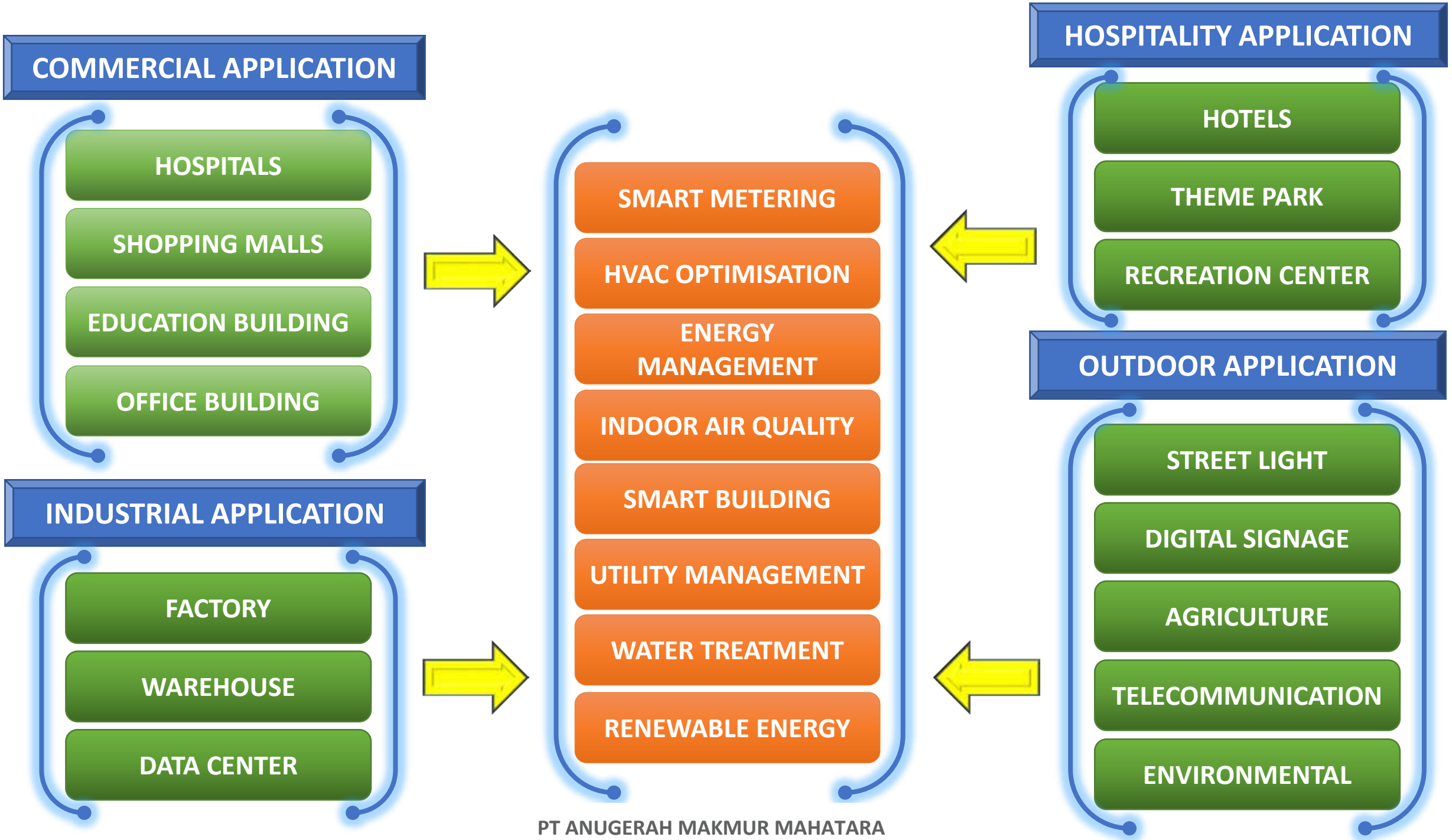
IIOT ENABLED SYSTEMS CAN BE CONFIGURED FOR LOCATION TRACKING, REMOTE HEALTH MONITORING OF INVENTORY, AND REPORTING OF PARTS AND PRODUCTS AS THEY MOVE THROUGH THE SUPPLY CHAIN, AMONG MANY OTHER THINGS.



IIOT SYSTEMS CAN ALSO COLLECT AND FEED DELIVERY INFORMATION INTO AN ERP SYSTEM; PROVIDING UP-TO-DATE INFORMATION TO ACCOUNTING FUNCTIONS FOR BILLING.



REAL-TIME INFORMATION ACCESS WILL HELP MANUFACTURERS IDENTIFY ISSUES BEFORE THEY HAPPEN, LOWER THEIR INVENTORY COSTS AND POTENTIALLY REDUCE CAPITAL REQUIREMENTS.


COMMERCIAL APPLICATION
HOSPITALS
SHOPPING MALLS
EDUCATION BUILDING
OFFICE BUILDING
INDUSTRIAL APPLICATION
FACTORY
WAREHOUSE
DATA CENTER
SMART METERING
HVAC OPTIMISATION
ENERGY MANAGEMENT
INDOOR AIR QUALITY
SMART BUILDING
UTILITY MANAGEMENT
WATER TREATMENT
RENEWABLE ENERGY
HOSPITALITY APPLICATION
HOTELS
THEME PARK
RECREATION CENTER
OUTDOOR APPLICATION
STREET LIGHT
DIGITAL SIGNAGE
AGRICULTURE
TELECOMMUNICATION
ENVIRONMENTAL

THANK YOU!



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