

How Can IoT-based Environmental Monitoring Solution be Useful for Your Business?

The Next-Generation Environmental Monitoring System

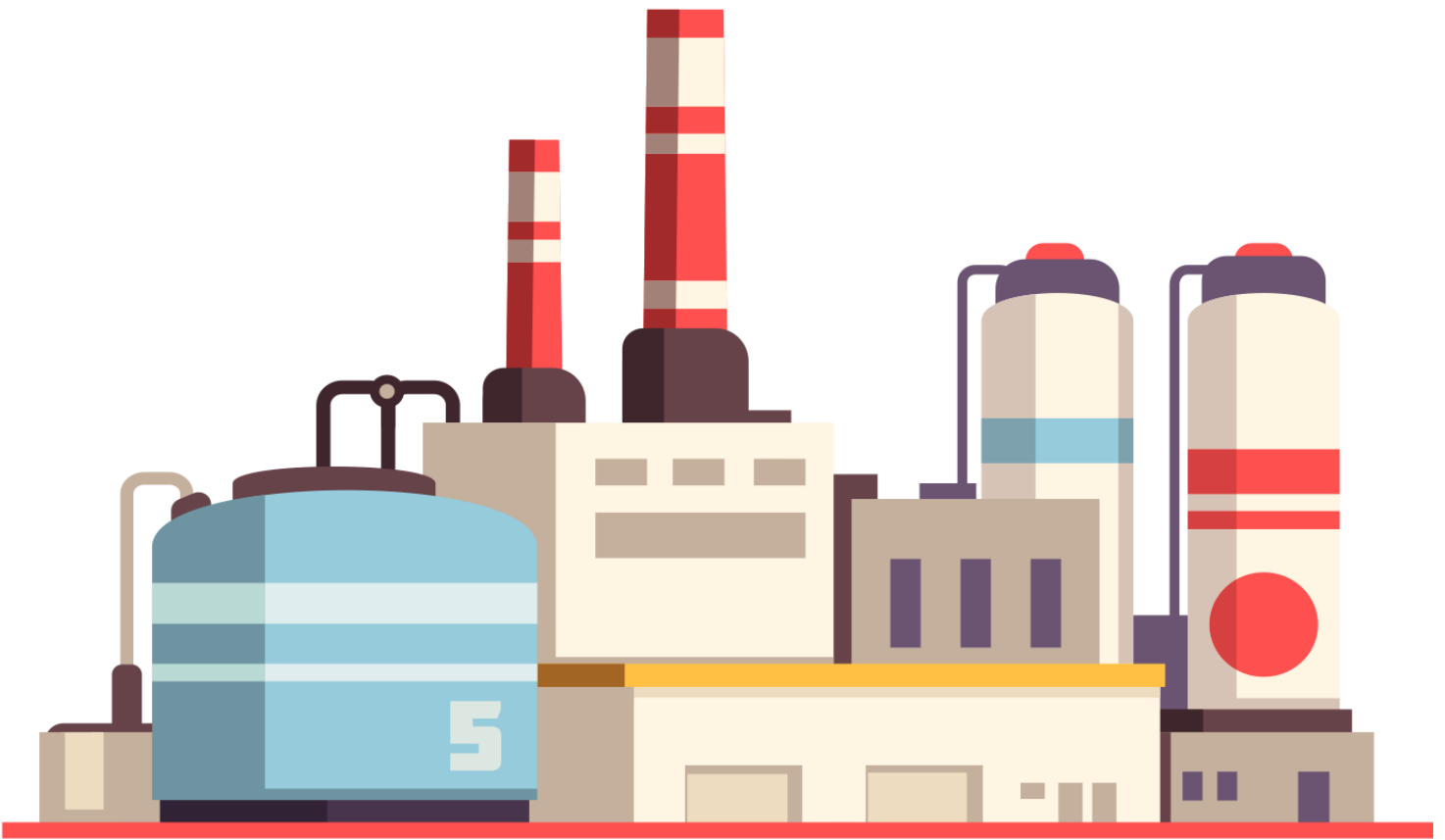
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Introduction

Industrial environments are going through rapid changes, changes in temperature, humidity, and many other factors that have severe impacts on operations, assets, inventories, and employees. As a result, many businesses today find it essential to monitor their environment. Environmental monitoring appears to be a must now.

Environmental monitoring refers to monitoring the status of an environment and taking action based on a pre-defined criterion.

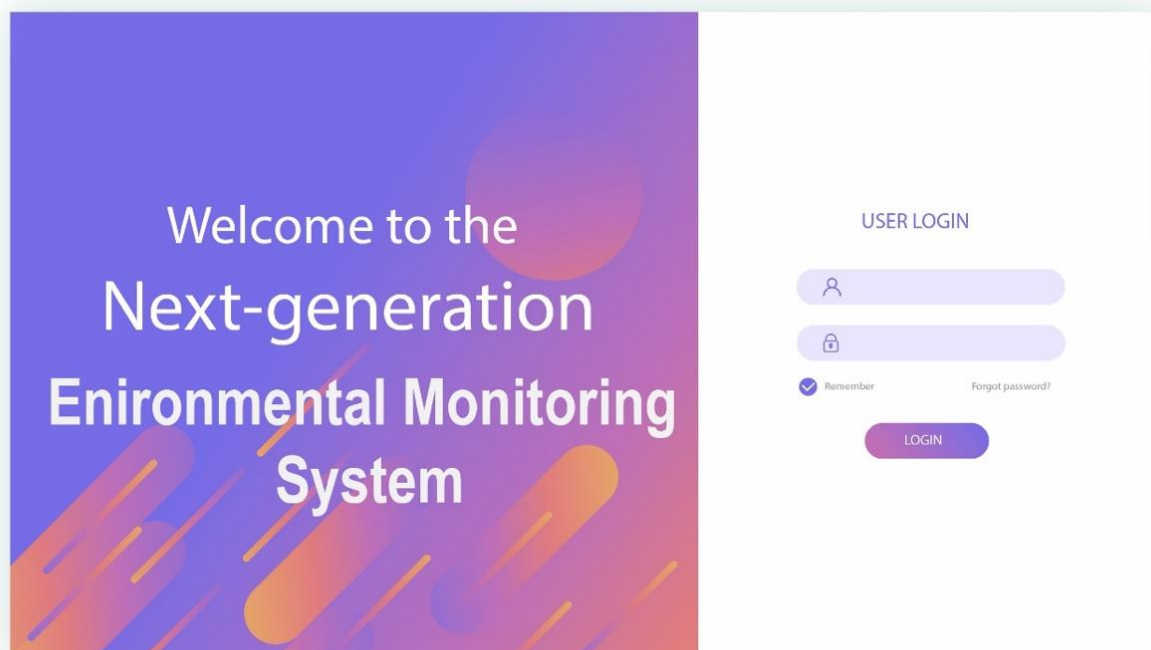


What is Environmental Monitoring System?

An environmental monitoring system is designed to measure and collect data related to the environment's status. It offers real-time monitoring of any environment parameter required to ensure that a particular climate is suitable for its intended purpose. Utilizing different kinds of sensors, environmental monitoring solutions capture and analyze the data related to temperature, humidity, dew & frost point, water leakage, smoke, light, CO2, and other dangerous gases level, etc. Advancements in IoT technology make it much easier to transmit this massive amount of data accurately. Users can remotely manage the data via web and mobile applications.

A well-designed environmental monitoring system usually provides the user with a one-stop dashboard to see anomalous conditions. This will help users accurately understand their environment, develop measures and policies to protect it against any adverse outcomes, and guarantee the organization's smooth functioning. Environmental monitoring systems protect facilities from many potential threats, including:

- Extremes in temperature
- Humidity changes
- Dangerous gases
- Power fluctuation
- Light intensity



Who Is It for?

Various industries need to monitor their environment to ensure that their assets and employees are safe and can fulfill their roles efficiently. By tracking every minute change in a warehouse, data center, shop floor, or Jobsite, managers can make it less likely that an environmental imbalance becomes shocking damage to employees, assets, equipment, and properties.

In recent years, environmental monitoring systems have been widely implemented and used in pharmaceuticals, data centers, telecom, healthcare, and food storage industry. Using an extended range of parameters, users can seamlessly monitor fridges, freezers, chambers, incubators, labs, blood banks, manufacturing and research facilities, warehouse and storage places, etc.

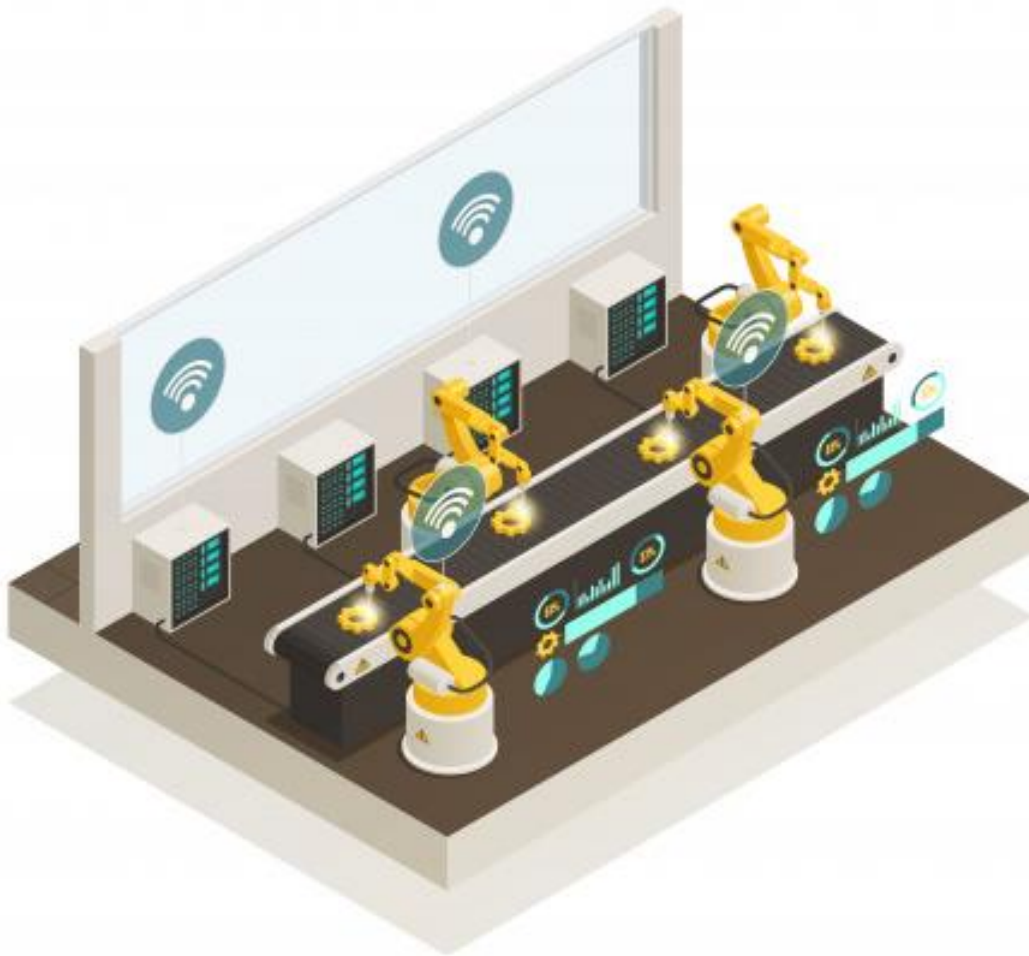
Research shows that the successful implementation of the real-time environmental monitoring system reduces financial losses by protecting inventories, assets, and equipment and prevents life-threatening events by watching the issues related to climate, power, dangerous gases, etc.



How Does It Work?

Different types of sensors are installed at various strategic locations within facilities. The sensors send data to IoT Gateways installed at the site. The IoT Gateways transmit the received data in real-time to an IoT platform located on a cloud server. The Environmental monitoring platform alerts you of anomalies in your environment via SMS, Email or screen notifications. Alerts can be set by the user to be issued when particular conditions are met or the data has crossed a threshold value.

So, once there is a change in the environment, the sensors detect it, and the system sends alerts to the responsible personnel. This way, managers can react to undesirable conditions before it's too late. The net result is that a small glitch does not turn into severe damage to your operation or facility.



An Example: the Importance of Environmental Monitoring System Implementation in Food Industry

It is of utmost importance in most industrial settings to monitor the environment for temperature, relative humidity, power usage, airflow, smoke, and other parameters. In the food industry, in particular, the monitoring of these factors is vital:

1. Temperature

Temperature is a critical factor to monitor in the food industry. Things can go wrong if it is not monitored effectively. Just think of a food storage place where fruits and vegetables are frozen due to excessive cooling down. Without the proper temperature regulation, the shelf life of some foods may decrease. A small temperature change can make a substantial difference, assets can undergo damage and downtime, stored foods can spoil, and a lot of power and energy can be easily wasted.

2. Humidity

Too much or too little humidity can be a danger to raw materials and equipment alike. If dry foods are exposed to moisture, they can be spoiled as a result of bacterial growth. Moisture prompts the growth and spread of microorganisms, even in areas considered clean. Without temporary climate and humidity control, condensation may form on food processing equipment and in storage areas. Such food can cause foodborne illnesses.

3. Airflow

Airflow is a central component of smart industrial environments. It's responsible for pulling heat away from equipment and ensuring temperatures stay at appropriate levels. A lack of proper airflow may allow contaminants and dust particles to reach food production areas. For example, in a meat-processing facility, if the air in a place where workers handle raw meat flows to a location containing the final product, such as the packaging stations, airborne bacteria can infect the products. The use of efficient airflow management techniques is essential for reducing energy costs as well.

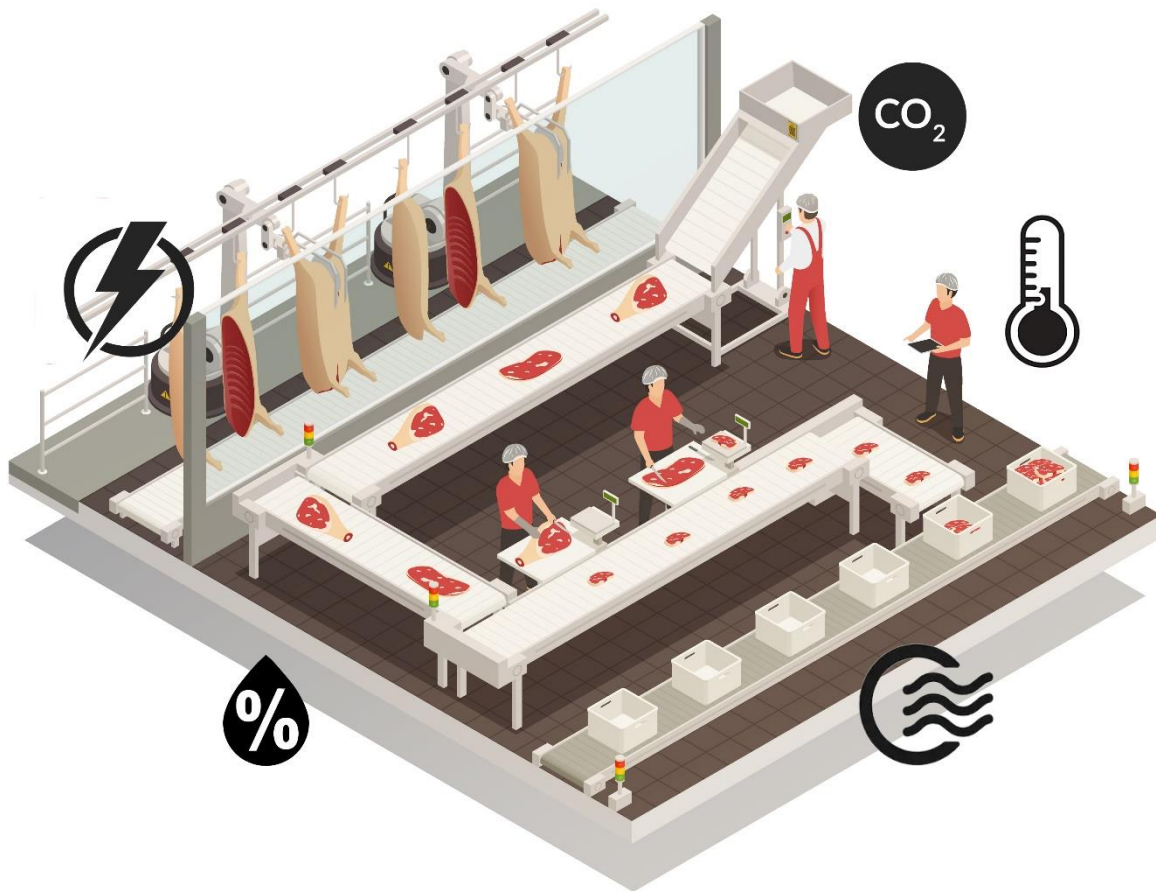
4. Power

Industries consume an immense amount of power, and issues can arise if the power flow is shut off or interrupted. Outages can cause severe problems by taking down refrigerators and other

storage mechanisms. Electrical failures can force air conditioning to shut off. So it is essential to monitor the incoming current and foresee measures in case of a power failure.

5. Carbon Dioxide

Almost every industry has to deal with dangerous gases, and the food industry is no exception, carbon dioxide, for example. Since it is odorless and colorless, it is potentially hazardous. It is heavier than air, so it displaces oxygen and can lead to suffocation. Accidents and fatalities stemming from carbon dioxide releases are common in the food industry, and without proper detection methods in place, everyone can be at risk.



The Features of the Next-generation Environmental Monitoring System

Nowadays, the data coming from environmental monitoring plays an integral part in many businesses' decision-making processes. However, the usefulness of this solution is proportional to its quality. As we all know, not every solution is created equally. There are several considerations when deciding to implement an environmental monitoring system if you want it to be applicable and practical.

- Accurate and reliable hardware that is durable and easy to maintain.
- Secure access control
- End-to-end encryption
- Configurable to your unique requirements
- Alerts, Notifications and Reports
- Multi-site management
- Single or multi-user access for companies with different sizes
- Dashboards providing a quick overview of sites and/or sensor groups
- Real-time Access of data, 24/7
- Immediate email, SMS, and screen notifications to user-defined personnel
- Generate automated reports in the form of understandable charts, graphs, tables, etc.
- Access to critical documents and information on your smartphone and local PC



Start Leveraging the Power of Dominate Smart Environment Monitoring Management

Whether you need to maintain optimum environments in a warehouse or monitor remote site conditions, Dominate SmartSite is the right solution for you. The system offers advanced data analysis and reporting capabilities, helping you monitor and manage an extensive range of input parameters, including temperature, relative humidity, light, water leak, air quality, poisonous gases, and many more.

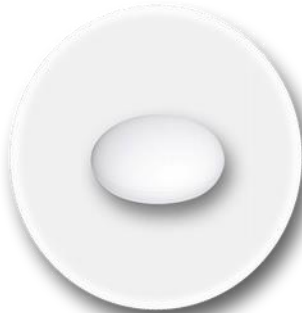
The AI-based wireless monitoring system results from many years of research and development, helping users ensure efficient performance and guaranteed reliability. Dominate IIoT solutions deliver real-time status of your critical equipment and environmental conditions to your smartphone, tablet, or computer. No more encounter losses due to power failure, temperature, humidity, water leak, airflow, or any other parameter that can pose problems. Dominate Smart Environmental Monitoring System is highly scalable. Whether it is a single installation or multiple installations across the world, you can be sure of full coverage of your environment. The system helps you to monitor whatever you want, at any time and from anywhere.



Dominate Sensors

Dominate Smart Site Platform utilizes low-cost yet robust IoT sensors to seamlessly capture data from your critical assets and industrial environment, ensuring your operation's safety and sustainability!

- Temperature & Humidity Sensors
- Vibration & Motion Sensors
- Water Leak Sensor
- Air Quality, Smoke & Dust Sensors
- CO, CO2, H2S, NO2, SO2, O3, Ethanol & Methane Sensors
- Current & Voltage Sensors
- Ambient Light Sensor
- PIR Sensor
- Contact Sensor



About Dominate SmartSite

Dominate Smart Site is the leading global provider of industrial IoT enterprise solutions for the manufacturing, facility/property, construction, energy/utilities, mining, and heavy industries. We bring real-time visibility to all aspects of your site by wirelessly connecting your assets, machines, workforce, materials, productivity, and environment to the digital world. Customers trust us to connect their shop floor and field operations to enhance productivity, improve profitability, and effectively elaborate across the broad ecosystem.





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