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Business Domain

Internet of Things (IoT)

Project Type

Hardware devices, Cloud service,
Web application

IoT-Based Air Monitoring System Identifies the Sources of Poor Air Quality Across 6 Offices Globally With 3,500 Events Daily

Client

The Client is an international IT company with employees working in 6 rented offices around the world.

Project

Developing an IoT-based air monitoring system in 6 global offices to collect data on various air quality parameters and connect the sensors to a central management system to aggregate and analyze the data in real time.

Objective

The Client aimed to create a healthy and comfortable work environment but struggled to maintain consistent air quality, which affected employees' health and comfort, leading to decreased productivity and increased absenteeism.

Team Reinforcement

The Client lacked sufficient expertise in air quality monitoring, especially in the development of hardware solutions. They looked for a partner with proven experience, expertise, and the best working conditions and delegated the task to Intetics.

Challenge

The Client is an employee-centric software development company with a focus on the quality of the working conditions. To ensure comfortable conditions, the microclimate was chosen as one of the indicators. The company's offices are in different countries and climatic zones.

The Client wants to proactively respond to climate change, not based on employee complaints. They aimed to monitor air quality parameters such as temperature, humidity, CO2 levels, and particulate matter.

The Client did not have sufficient expertise in the field of air quality monitoring, especially in the development of hardware solutions. Intetics offered the required experience, expertise, and the best working conditions.

Quick Facts

- ✓ 2+ years of air quality monitoring
- ✓ 6 different locations
- ✓ 3 microclimate quality characteristics
- ✓ 3000+ events per day

Technologies

MS Azure Cloud Services / Azure IoT Hub / .NET Framework / Entity Framework / jQuery / JavaScript / Terraform / GitLab / ESP8266

Solution

★ 01

The IoT air quality monitoring system has proven to be a valuable tool in maintaining a healthy and comfortable work environment for the employees.

★ 02

The real-time data collected by the sensors allowed the Client to identify the sources of poor air quality and take prompt action to address them.

★ 03

The system provided valuable insights on the air quality trends and patterns in each office, which fostered the development of more effective strategies to maintain consistent air quality.

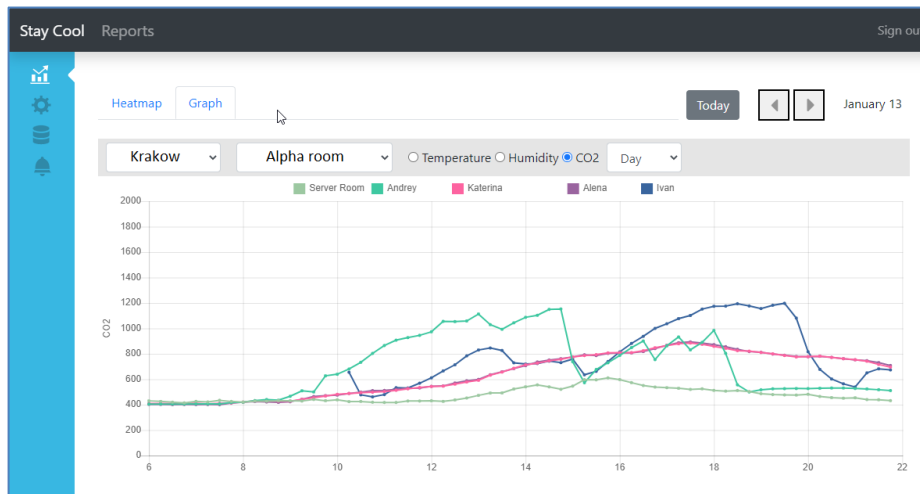
★ 04

Main elements:

- Installing air quality sensors in each office
- Connecting the sensors to the central management system
- Configuring the sensors to collect data on various air quality parameters
- Setting up the central management system to aggregate and analyze the data
- Developing a user-friendly dashboard.

★ 05

The microclimate monitoring system made it possible to control the operating mode of equipment in server rooms and thereby prevent damage to expensive equipment.



Client Reference



We are thrilled with the results of our IoT air quality monitoring system implementation. The implementation process was smooth and efficient, and the central management system was easy to use and provided valuable insights into the trends and patterns of air quality. The air quality in our offices has improved dramatically since the implementation of the system, and our employees have noticed a significant difference in their health and comfort.

Benefits and Results

- ★ The collected real-time data allows the Client to identify the sources of poor air quality and promptly address them, resulting in improved indoor air quality for employees and a possible increase in productivity.
- ★ The system provides insights into the energy consumption of heating, ventilation, and air conditioning (HVAC) systems, allowing for energy savings and improved energy efficiency.
- ★ The IoT air quality monitoring system can help the Client to comply with indoor air quality regulations, applied in some countries, by providing real-time data on air quality parameters.
- ★ The cooperation lasted for 2 years across 6 offices globally.