

Cloud-based Mobile App Generates Cost Savings by Remotely Monitoring and Controlling Air Conditioning Systems

Customer: Manufacturer offering a premium range of home and life solutions

Size: 1001-5000 employees

Region: India

Industry: Manufacturing and Distribution

Profile: Manufactures a wide range of products including room air-conditioners and commercial air-conditioners as well as trade VRF systems, rooftops, chillers, refrigerators, and washing machines

Services: Cloud Services

Business Need

The firm aims to address the cooling needs of customers and is among the top air-conditioning manufacturers in India.

In order to create superior customer value and stay ahead of the competition, the client sought to provide customers with a mobile app to remotely monitor and control air conditioners and maintain real-time awareness of critical issues such as sensor failure, water leakage, and filter cleaning.

With this consumer app, the manufacturer wanted to give their customers the freedom to tailor their cooling needs with the touch of a button, from anywhere.

Solution and Approach

Synoptek (formerly Indusa) built an intuitive and user friendly air conditioning remote control mobile app for the manufacturer on the Microsoft Azure platform. The app helps users monitor and control air conditioners from their smartphone or tablet in real time.

The app puts air conditioner's frequently used functions at the fingertips of its user. It allows the user to control temperature and power consumption, set timers, change the mode and fan speed, and auto clean the filters (when required). When there are software or hardware issues, the app notifies the user to get in touch with the service staff.

The app is compatible with both Android and iOS smartphones and connects with the air conditioner via two options – Direct (Hotspot) mode or Wi-Fi Router (Internet).

Whenever a customer purchases an air conditioner, he/she needs to register their mobile number. This number, along with the associated data, is periodically transferred to the web app database.

The app, built on the Microsoft Azure platform, consists of a Java NIO based program that acts as a central system of communication between the controller and the mobile app when the air conditioner is operating in Wi-Fi mode. The program helps receive status updates from the air conditioner on the mobile device and sends status commands to the air conditioner from the mobile app.

Profile creation – The user creates a profile after installing the app on his mobile device. The mobile number submitted gets validated in the manufacturer's web app database through a web service call. After the user successfully logs-in, he/she can create a profile for a particular air conditioner.

The user creates a profile for a single air conditioner, which includes – profile name, model, serial number, and access mode.

Direct (Hotspot) mode – First time connectivity between the app and the controller is done using Direct mode. Communication with the air conditioner

can be done by a single individual at a time. The user connects to the access point provided by the controller. Once the connection is established, quick status regarding temperature, mode and fan mode for all profiles can be viewed.

Wi-Fi mode – The user enters the SSID of the router and the password; the app then transfers the Wi-Fi password, SSID and other details to the controller to configure the router's Wi-Fi connection details on the controller. Once the connection is established, the user can view a quick status regarding temperature, mode, and fan mode for all profiles.

Switching modes – By resetting the connectivity details, the user can switch from one mode to the other (Direct and Wi-Fi).

Web app on Azure Cloud – The web app allows a central administrator to define air conditioner models and features provided with a particular model. Model listing, and features mapped to the models are used within the mobile application. The web app database stores the current status of each air conditioner

against its PCB serial number (unique identifier of the air conditioner). The app also stores the commands fired from the mobile app for a particular air conditioner, which is pushed to the controller via a Java program through a secure communication channel.

Business Results

With the air conditioner remote control mobile app, users can now monitor and control cooling remotely. They can turn on the air conditioner, change its mode, adjust the temperature, fan speed, or even set up the smart timer feature. This greatly contributes to the cost savings and improved operations of the manufacturer.

The mobile app provides the facility to operate air conditioners without internet connectivity, by configuring them via Wi-Fi Direct/Hotspot.

Users can take appropriate measures in real time by getting regular reminders about the critical issues of air conditioners such as sensor failure, water leakage, and filter cleaning.

About Synoptek

Synoptek is a Global Systems Integrator and Managed IT Services Provider offering Comprehensive IT Management and Consultancy Services to organizations worldwide. Our focus is to provide maximum "business value" to our clients enabling them to grow their businesses, manage their risk/compliance, and increase their competitive position by delivering improved business results.