Solution with Node-Watch cloud management platform enhances retail store operations and management efficiency

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Project Introduction

Today, we are stepping into the mobile touch-screen generation. The use of smart handheld device has gradually evolved from the consumer sector to the industrial sector. Taking retail as an example, handheld device, unlike POS or desktop computer that must be installed in a fixed position, can create many new mobile applications but also brings new management issues. For example, staff may carry the device out of the business premises without permission, or the device could be lost due to arbitrary placement, or installing other software programs leads to take up too much system resources and slow down the handheld device. In addition, performing firmware or software updates on dozens of handheld devices would be a tedious task for a chain enterprise with many shops. Either returning the device to headquarters for update or replacing with a spare one, both can cause the inconvenience of the branch operation and even increase the management cost of the enterprise.

AMobile’s Node-Watch solution is able to solve the problem as described above when implementing handheld device. This total solution provides a cloud platform to centrally manage all handheld devices. Chain retailers can use the excellent performance GT-500 and customized APP as a management tool for shop inventory or checkout. Managers at headquarters can remotely monitor hardware or update software through the cloud management platform to maximize the overall benefits of the new system.

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Project Requirement
For half a century, a Taiwanese time-honored food retailer adheres to the management philosophy of tradition and innovation, letting its self-made Chinese dried meat and delicious pastries be deeply loved by the public. As a result, it is able to continuously expand its business bases throughout Taiwan and establish shops in airports, high-speed rail stations and national highway service areas. Some of these shops have even become the popular gift stores. The company's management executives regard e-business as important, so the company has adopted various IT systems many years ago such as ERP, POS and retail checkout system.

With the constant innovation of mobile technology, the company found that the industrial-grade Android handheld device is the mainstream of the mobile business (m-business), and purchasing a new Android handheld device as a management tool for shop inventory is necessary. The food retailer has an information department at its headquarters. But the fact that Android is a relatively new Operating System, and it takes more time and labor to re-learn the new programming language and start writing program. Therefore, the company decided to outsource to vendor the development of its dedicated retail store management system. Besides, each shop is small but comprehensive. There is not much space available for storing goods, so rapid transshipment and replenishment have become important issues. Plus, in order to centrally manage dozens of stores scattered in different cities and regions, the company expected to build a system that provides both front-end application and back-end management through the replacement of old devices with new ones.

AMobile’s Solution
AMobile’s total solution, including the 5-inch multi-touch handheld device GT-500, customized retail store management system and Node-Watch unified management platform, meets the three requirements of the time-honored food retailer by one stop shopping.

Unlike the push-button data collectors originally used in the retail stores, the GT-500 with built-in MediaTek quad-core processor is an industrial-grade Android handheld device that looks like a smartphone but has much better performance than the smartphone. This versatile product allows users to input data by touching the screen and to scan the barcode to obtain product information while connecting to the back-end database via wireless network. It not only replaces the push-button data collector with ease, but also quite easy to add new features in the future. Perfectly combining with AMobile’s customized APP makes it as a good helper for inventory and checkout at the retail store.

Exemplifying this project, the GT-500 allows this food retailer to uses its barcode scanner to check product information and send data to the management system via its WiFi or 4G network. Moreover, AMobile’s APP is designed based on the usage habits of the store so as to provide a variety of quick search functions such as keyword, item number or category. The common commodity names were set as the keywords so the clerk can click them to quickly find the required information, thus shortening the ordering, transferring, storing and other operating time.
In terms of the back-end management, the Node-Watch is a cloud management platform to remotely diagnose and troubleshoot the hardware. The software's functions mainly include handheld device management, APP management and content management.

Firstly, the handheld device management is responsible for monitoring the remaining battery capacity and the device location. It will automatically send the alert notification before the device runs out of power. Once the handheld device unfortunately lost, the monitoring center can remotely give instructions to lock the screen or clear the data. Then providing GPS satellite positioning information lets users have the opportunity to find the device.

The APP management can simultaneously update firmware or software on multiple devices at the same time. In addition to ruling out the trouble of updating one by one, the monitoring center can confirm whether each device has indeed completed the update process. The system also provides blacklist and whitelist functionality to prevent users from downloading software, game or video that are not allowed.

As for the content management, it allows the users to modify, change or adjust the carousel ads or sharing information on the handheld device. When the food retailer needs to launch different promotions in different regions, the headquarters will be able to directly send the relevant advertising content to the area of handheld devices. Additionally, it is capable of updating the exchange rate for a foreign currency in real time, enabling the clerks at the airport duty-free shops to charge the money at the correct exchange rate. It can also update the vendor address, phone number and other sharing information on all handheld devices, so that avoiding the staff to order the wrong items or delivery goods to the wrong place.

**Conclusion**

When enterprises are carrying out the m-business, how to properly manage the handheld devices is an issue that must be taken seriously. Otherwise, enterprises may have not yet received the expected benefits from the new system but get tired of dealing with various derivative problems first. AMobile is not only a hardware manufacturer of industrial-grade handheld devices, but also a provider to offer the software and hardware integration solutions and mobile value-added services. That helps enterprises successfully implement m-business systems and solve the problem of difficult to manage handheld devices. The Node-Watch solution of this project enables the chain retailer to have an easy-to-operate management tool deployed at its branch shops, and allows its headquarters managers to have a centralized management platform for control and monitoring.

In addition, this solution is flexible and expandable. Since supporting the MQTT and OMADM standard interfaces, the Node-Watch is able to manage various AMobile's handheld devices and other types of IoT devices that meet the standards. The GT-500 has built-in many useful utilities to provide a variety of peripherals to collect data. If users want to change their data acquisition method, they can expand easily without replacing the hardware. For example, this food retailer right now uses barcode scanner only, but it can further use the NFC recognition feature of the handheld device to add mobile checkout applications in the future. On the whole, implementing this solution is really to achieve many things at one stroke while maximizing system benefits.