Project Introduction

With the increased willingness of consumers to shop online, e-commerce has also continued to flourish. Delivery logistics is the last mile in e-commerce supply chain. Its delivery services influence on whether the e-commerce vendors can get higher customer satisfaction or not. As a result, most delivery logistics companies provide handheld devices for their delivery drivers so that delivering goods to consumers on time and safely. In addition to displaying basic shipment information, the device can sort out the delivered goods through scanning barcodes, as well as instantly transmitting the delivery status to the back-end management system via wireless network or mobile network.

Earlier on, there were not many options of Operating Systems to support handheld devices. Many delivery logistics companies built the delivery management system on Microsoft's Windows CE platform. Nevertheless, Microsoft has announced recently that it would stop supporting the Operating System within a few years. It forced the delivery logistics companies to transform into other Operating Systems as soon as possible so as not to become the system orphan. AMobile’s total solution provides the robust Android handheld, customized delivery management software and monitoring and control platform with unified SW/HW management, enabling delivery logistics companies to upgrade their existing delivery management systems as they implement new Operating Systems, while utilizing the cloud management platform to improve handheld device management and goods delivery efficiencies.
**Project Requirement**

Founded more than a decade, a Taiwanese express company provides a wide range of delivery services (including C2C, B2C and C2B), and has dozens of branch offices throughout Taiwan. To date, the company has delivered more than 100 million items. Hundreds of delivery drivers have been using handheld devices as a management tool for pick-up and delivery. Since Microsoft is about to stop supporting Windows CE, the company, after evaluating the commercially available OS, decided to shift to the Android system and to gradually phase out the existing mobile data collectors.

In order to migrate to the new OS as soon as possible, the express company needed to purchase a solution that provides both hardware and software and listed the following requirements:

**A. About the hardware**
- Provide lightweight and rugged handheld device;
- Replace easy-to-damage push-button keypad with easy-to-use touchscreen;
- Provide a variety of power supply options for handheld devices;
- Support the latest mobile communication technologies enabling the use of faster and high-quality network to transmit data;
- Provide flexible expansibility for users to further revise or upgrade.

**B. About the software**
- Using Android OS to develop a delivery management system that is consistent with the existing software functions;
- Modify the existing software defects and make the system easier to expand functionality;
- Provide management platform to monitor and control software and hardware.
AMobile’s Solution

With the smart handheld device PD450, customized delivery management system and unified management platform Node-Watch, AMobile’s total solution meets all the requirements of this express company.

Among them, the 285 grams of ergonomic PD450 is a very lightweight, convenient and easy-to-grasp Android handheld device. Dust-proof and water-proof with IP67 rating, 1.2 meters drop proof and wider operating temperature range (-10°C~50°C) make it extremely robust and dependable. The delivery drivers can input data through the 4.5-inch touch screen just like using a smart phone. Providing three additional physical buttons allows users to define their functions according to usage requirements. For example, this project set them as the Home, Back, Recent APP, so that the system can quickly jump to the desired page.

The PD450 can be powered by two ways: one is to replace the lithium battery, and the other is through the car cigarette lighter to charge. Its battery can be fully charged within only two hours and can last up to 24 hours in pure standby mode. Therefore, when drivers are on the way to deliver goods, they have no need to worry about handheld devices that can not be used due to low battery. Besides, this product also offers a wide range of peripheral devices and wireless communication technologies for data acquisition and transmission, such as camera, 1D/2D barcode scanner, NFC recognition, UHF pistol grip, wireless network, Bluetooth, 2G/3G/4G mobile communications and so on. It not only meets the current project needs which include 1D barcode scanning and 4G network transmission, but also is very convenient for future expansion such as adding QR code scanning, RFID scanning, photo recording or other extra features.

As for the software, this project must be finished within a tight schedule because of customer request. Fortunately, AMobile has a professional Android software design team. In addition to completing the company’s required delivery management system in a very short period of time, AMobile’s programmers also sort out many problems of the original software. After modification, the new system runs more smoothly and is easier to expand functionality as well. The Node-Watch unified management platform provided by AMobile brings great convenience to hardware monitoring and software maintenance. For example, it enables the headquarters to remotely monitor and control the handheld devices used by delivery drivers to know the delivery progress, to issue a low battery-power warning to actively remind the driver, and to simultaneously update software for hundreds of handheld devices through the wireless network.

Conclusion

Handheld device is almost an indispensable tool for delivery logistics industry, whether it is as the warehouse inventory terminal or delivery driver’s mobile data collector. However, using high-tech products has to face the software and hardware upgrade problem. Just like this project, the express company needed to transit from Windows CE to Android system. Although the company can choose to self-design the software equipped with a commercially available handheld device to create its own delivery management system, such approach is definitely time-consuming and labor-intensive and difficult to accomplish in a short time. AMobile provides a high-CP-value solution, including front-to-back software and hardware, enabling the express company to quickly implement the required systems, and to efficiently manage handheld devices. Offering a variety of data acquisition and wireless transmission functions also allow the company to flexibly expand system functions in response to future needs.