

HTC IMPROVES THE STOCK REPLENISHMENT FOR A MAJOR US BASED AUTOMOTIVE ASSEMBLY PLANT

CASE STUDY

HTC GLOBAL SERVICES

The client

The client operates a major automotive assembly plant in the USA, which is also the hub of their North American production center.

Background

The client was using WhereCall Material Replenishment Tags to make parts requests wirelessly to their Material Flow Replenishment System. These tags or buttons are wireless pendants and simple telemetry devices mounted at the line side without wires and hardwired connectivity.

As these tags / buttons are expensive, HTC's consultants developed an Android based mobile application that will use the existing Material Flow replenishment system. The mobile application will display up to 24 configurable buttons on a tablet, which will replace an equal number of tags / buttons and thereby bring in tremendous cost savings.

Challenges Faced by the Client

- Parts were frequently rearranged between various locations and this required manual reconfiguration of buttons (changes necessitated due to Engineering Change Sheet)
- Inability to communicate the Part Master Data (Bespoke software) changes to the Material Flow (Replenishment Solution from Zebra Technologies)
- Limitation on providing additional details about the tags / buttons as the printed information needs to be pasted near them
- No alternate options to make calls for the parts - the user had to make the calls from the exact physical tags / buttons
- Managing the calls - the Part Master changes (part to fit location changes) may take time to reflect in the Material Flow System, as the Material Flow user must manually make those changes
- Inability to integrate with other business functionalities to improve overall plant management and production

HTC's Solution

HTC's consultants studied the process flow and suggested a web and android based solution.

Web Application – Key Features

- The Web app acts as an administrative tool to manage the data and process
- The Part Master integration provides visual alerts to make the corresponding changes in the Material Flow
- It provides remote management option by grouping the buttons using the configurations controlled by the selected fit location codes
- With wired network availability, the web application will also serve as backup for parts call while using the Android app replica web pages

Android Application – Key Features

- With a strong Wi-Fi network at the production areas, the Android application enhanced operational efficiency compared to the tags
- The required configurations could be easily created via the web application and displayed on the tablet screen
- The app displays the latest changes that correspond with the selected configuration
- It shows additional information about the parts while the tags require printing and pasting the relevant information at the exact physical locations
- The call history and call fault alert facilities provide better call management
- Customizable function buttons
- The app can be installed on any number of android devices
- Customizable 'idle time out' feature takes care of energy conservation when the app is not used for a specific / predetermined time
- The app permits users to make calls from any device and from the web application (web replica pages of the android app)

- The app provides a better way to manage calls – it shows warning messages of part master mismatch as configured on the Material Flow. This will make users aware and inform the admins to make the required configuration changes along with reallocating the relevant part
- It shows the additional information within the app - using the web application and without making changes on the Android app, the part call related information (for example, the car model and part details) can be added or updated to be displayed dynamically and the admin users need not go to the relevant physical locations for this
- The call history and call fault alerts provide better call management – the App has the feature to view the past calls made and their status. It can prevent making calls when there are configuration errors on the Material Flow System. This will alert the admins ahead of time. The warning alerts on the Material Flow and part master configuration mismatches will help the admins to take the necessary actions ahead of time

Stage-1: Replaced WhereCall Material Replenishment Tags with the Android App Running on Tablets

- The Stage-1 of the project was implemented at a specific section of the production area
- The 10 inch Android tablets replaced multiple tags and this reduced the overall cost as one tablet replaced 24 tags
- The WhereCall configuration via the Web app enables grouping of buttons based on the fit location code
- Custom built tablet stands were used to protect the tablets

Stage-2: Expansion, Improvisation, and Dunnage

- HTC's Android app replaced the physical tags / buttons at several sections of the assembly plant
- In addition to custom built tablet stands, custom-built tablet cases with magnetic tablet mounts were installed for enabling ergonomic usage
- The same solution was used to add Dunnage buttons to alert and pick up empty dunnage used for part delivery
- More android applications were added, which enabled multiple tasking along with part call

Stage-3: Andon Call

- HTC's solution was able to integrate the Andon Call feature to it
- The android app supports Team Leader Notification and Emergency Message Notification

Future Ready

- The application can be integrated with Broadcast Sheet for parts call
- With minimal customization, the application can be migrated to make Mobile Industry Robot Calls, where robots do the part delivery

Key Benefits Realized by the Client

HTC's solution replaced 699 WhereCall Material Replenishment Tags with 70 android tablets. This brought tremendous cost savings and enhanced operational efficiency.

Tremendous Cost Savings

- 5 times increase in cost savings
- Enabled continuous realization of cost savings, Year on Year

Enhanced Operational Efficiency

- The android tablets display 20 buttons in the Landscape mode without the need to scroll and 24 buttons in the portrait mode without the need to scroll (enabled reprogramming an equal number of Kanbans on one tablet)
- Reduced the impact on Cisco upgrades – the tags require antennas and this affected the operating efficiency of Cisco Access and their upgrades. HTC's solution eliminated the requirement of these antennas
- The replacement of the old WhereCall (III and IV) Material Replenishment Tags enhanced the overall efficiency of the material replenishment system

