ICONICS' New Industrial Mobile HMI Apps Reflect Commitment to Any Glass, Anywhere

By Janice Abel and Craig Resnick

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Summary

New mobile HMI applications, or "apps," are beginning to gain traction in the industrial world. ICONICS' new MobileHMI App demonstrates many of the features and capabilities that will drive increasing user acceptance of these types of industrial apps.

Due to the explosion of smart mobile IT devices, apps and "app-like" functionalities are starting to infiltrate the industrial world. While this is largely driven by the new Millennial generation of workers, most stakeholders are beginning to embrace smartphones, tablets, "phablets", and other mobile devices to access manufacturing processes, information and intelligence at any time from any location with wireless or cellular access.

Key Questions To Ask For Industrial App Selection
Which devices does the app scale to? Does it support and adjust displays according to form factor?
How clean is the design? How easy is it to visualize at a glance?
How easy is it to create, configure, or customize the app?
Does the app offer full control, with the ability for authenticated users to write to setpoints or take action from their device?
Do the tools allow you to publish the app as your own company's app?
How easy is it to get a personalized or filtered view?
Is it secure?

Industrial developers are starting to introduce new software applications designed to run on mobile devices. However, industrial users must use extra care when selecting these software "apps," due to the mission-critical nature of many industrial applications.

Big Data, IoT, and Intelligence Drive use of Apps

With the Internet of things (IoT), information is expanding exponentially. We're seeing more connected devices, more smart sensors, and more information. The information explosion drives users to find ways to access and deal with the information quickly and easily to improve the bottom line. While this trend started in consumer environments, it has rapidly migrated to the industrial sector, where mobile HMI apps can help keep workers better connected and informed. Industrial mobile HMI apps provide users with instant access to information on either their own or a company-provided smart device. Manufacturers can gain value from industrial mobile HMI apps by reducing downtime, responding faster to problems, and tracking key metrics.

Best-in-class industrial HMI apps typically offer a number of common capabilities and characteristics. These include:

- Ability to run on almost any authorized mobile device available today
- Instant access to actionable intelligence on any type of mobile device
- Crisp, customizable graphic and visualization capabilities
- Easy to access, visualize, and use screens
- Responsive design and scaling for best fit on multiple screen resolutions
- Orientation-aware displays
- Multi-touch-enabled drill down, zoom and pan control
- Alarm intelligence for equipment, units, and large areas
- Easy configuration and customization
- Robust mobile security for device management and preventing accidental operation
- Cloud capabilities
- GPS integration and geographical mapping

"Any Glass, Anywhere" Concept

Technology suppliers now have an immense opportunity to help their industrial clients engage today's new workers and increase app usage by focusing on the user experience.

Good form factors and functionality for the HMI are vital in today's information-overloaded world. Having the ability to integrate with OPC, OPC UA, BACnet, SNMP, Modbus TCP/IP, Web Services, etc. and visualize on

any device or "glass" can help ensure that data from any plant, building, equipment or system is immediately viewable.

Given today's prevalence of BYOD ("bring your own device"), the mobile industrial HMI app should run on just about any device -- iPads, iPhones, Windows tablets, Android tablets, Windows phones, Amazon Kindles, etc. – whether it utilizes Microsoft, Google/Android, or Apple iOS operating systems via HTML5 displays.

Ideally, mobile industrial apps should not just have read access or low-level database access, but also enable users to respond to the data and take appropriate action. The app should use a Web browser and have the ability to access information from anywhere the Internet is available. A mobile HMI app should also help employees determine at a glance if they have hit, are close to, or exceeded their targets. Workers can determine if they need to work harder, can afford to take a break, or if there are any issues to be addressed. They need to find out if production has stopped and, if so, drill down to see the cause so any necessary actions can be taken right away.

ICONICS' Industrial MobileHMI App

ICONICS recently demonstrated its new solution for ARC Advisory Group. ICONICS is an independent software developer of real-time visualization, HMI/SCADA, energy, fault detection, manufacturing intelligence, MES, and analytics solutions with a long history of software innovation. The new mobile app is designed to help manufacturers and other industrial organizations improve information visualization and operational efficiency by enabling mobile workers to access and respond to data from their mobile devices from anywhere at any time.

The app, which integrates with most control networks or automation system networks, is designed to run either on premise or in private or public clouds to enable scalability and data growth and high availability. This includes both disaster recovery and fault tolerance. The technology makes use of an application hub that brings consistency to all devices – iOS, Amazon, Google/Android, and Windows – using a tile-like structure.

Smart Windows Tiles Enable Consistent User Experience

People expect the now-familiar tiled format on a Windows device, but not on an iPad, iPhone, or Google/Android device. According to ICONICS,

ICONICS' MobileHMI App Offers Common Look and Feel on All Devices

built-in capabilities enable its apps' Smart Tiles to run on any device, providing the same look and feel as Windows 8 applications. Users can see role-appropriate trends, alarms, and alerts in a tile format. Messages and emails can be sent to notify the right worker about deviations from the norm. The app also enables authorized users to switch roles.

Responsive Design Accommodates Available Screen Size

Built-in intelligence determines what information is needed for the specific form factor orientation or device screen size. The app can rotate to show different information or declutter upon orientation. For example, trends can be shown in a horizontal view when the device is rotated. The view shows only data at a glance because it is smart enough to determine the best manner in which to view the data based on the screen size.

Collaboration, Capturing Expertise and Alarm Intelligence

The app enables collaboration through email and SMS text integration so users can instantly share thoughts and data. Built-in alarm intelligence captures alarms through an audit trail. Users can also add comments as needed. The app can also help facilitate a simplified and robust user access environment that provides convenient decision support capabilities.

App Adjusts Different Displays to Accommodate Form Factor and Orientation

Personalized KPIs and Intelligence

According to ICONICS, the app can change the way users derive value from technology. By selecting a personalized KPI or metric, users can access operating conditions or procedures so that they know how to execute an action. Built-in intelligence adds appropriate context and personalization to the data and navigation.

Easy to Configure and Customize Views

The app includes the ability to quickly configure the Smart Tiles using existing apps and data sources (such as OPC). Visuals can illustrate what's changing and what users need to know, as well as help them examine KPIs and tell if something is out of range or what's being affected.

ICONICS demonstrated the app's built-in tools for creating mobile apps for any device with drag and drop functionality. Users can configure a Smart Tile; add animation; and use pre-built libraries of favorites, recents, a keypad, voicemail, etc.

The Smart Tiles help prevent inaccurate selections or "fat fingering," by providing excess room, so users can select the desired information. This can be particularly helpful on smaller device form factors, as anyone with larger hands may know.

As we saw in the demonstration, once the user is logged on, the application hub can launch to the assets or specific plant location with a personalized view for the user. Views contain filtered information that can be based on the individuals' role or responsibility with hierarchical and device-specific Smart Tile layouts that integrate with alarms and trends.

Geographical Mapping and GPS Integration

ICONICS' industrial MobileHMI app also utilizes the company's Earth-WorX GEO SCADA technology to provide detailed geographical information. This enables users to visualize widely dispersed assets, such as pipelines, offshore rigs, utilities and large or geographically remote plants in real time. Using the zooming capability, the user can declutter the screen and add or remove Smart Pins and Smart Tiles as needed to quickly view alarm conditions and status as well as identify and locate assets using Microsoft's Bing Maps, Esri Maps, Google Maps or those from other popular GIS services.

Mobile Device Security

As untrusted devices flood the workplace, IT groups often find it challenging to ensure that security and compliance requirements are met. Since apps can be the "back door" that security specialists warn against, rigorous security protection is required.

According to the company, this app provides security from malicious changes and other back door concerns, including device management security for users and for lost or stolen devices. If employees leave a company, the app account can be turned off. Explicit rules can be implemented with the rights to deny access.

A "safe touch" feature prevents accidental "pocket dialing" or access to critical information that could otherwise accidentally shut down a process or cause an abnormal condition.

Industry-Specific Mobile HMI Focus

Industry-Specific Templates for Role-Based Mobile HMI Screens

ICONICS developed a number of industry-specific industry templates to make it easier for users to configure their app for a particular industry (oil & gas, water, manufacturing, etc.).

The company's MobileHMI app for the oil & gas industry, for example, provides templates to provide a starting point for developing role-based screens and information to help users visualize oil fields, offshore rigs, pipelines, and refineries and respond to alarms and alerts in real time.

Conclusion

ARC believes that mobile industrial HMI apps such as this represent the beginning of the new industrial revolution with functionality that leverages and builds upon other mobile capabilities. ICONICS plans to add more industry capabilities and other features in the future.

For more information on ICONICS' MobileHMI, visit www.iconics.com/mobilehmi, or to download one of the industry apps from your preferred mobile OS store, go to www.mobilehmi.com.

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