White Paper

Top 5 Reasons To Consider Mobility In Manufacturing

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Top 5 Reasons To Consider Mobility In Manufacturing

1. Executive Summary

In recent years, dramatic changes in the global manufacturing plant landscape have compelled organizations to respond to a new set of challenges, including:

- An increasing number of casual users requiring secure, on-demand access to plant data;
- Flexible and alternative working modalities;
- Changes due to organizational restructuring (mergers and acquisitions, outsourcing);
- The need to conduct business operations across time zones and continents.

This paper provides 5 reasons why you should consider mobility in industrial settings. It discusses how plants can provide employees with cost-effective, secure, on-demand remote access to critical information resources and suggests ways in which you can begin to build out your mobile technology base for use within manufacturing. With this approach, data, and user access policies, are centrally managed and administered, rather than dispersed among large numbers of computing devices, and managed disparately.

2. Mobility Outlook

Why Mobility for Industrial Automation?

Mobility has changed, and continues to change, the way that organizations operate, and as a consequence, how their employees work. New work styles, driven largely by advancing technologies and the employees who embrace them, have arisen; organizations must adopt policies and innovative technologies to support that evolution, especially regarding mobility. This evolution applies not only to changing work environments but also to business relationships beyond the workforce, such as consultants and partners. Additionally, there are certain vertical markets that require, or benefit from, more mobility than others.

As automation industry analyst, Jim Pinto, points out in a recent Automation World article, Mobile in Automation, *"Mobile equivalents – tablets, smart phones and other portable devices, deliver vastly improved productivity and yield drastically reduced total cost of ownership."* [(1)]

3. Top 5 Reasons to Consider Mobility in Manufacturing

"Over 67% of the manufacturing companies reported a shortage of available qualified workers" [(2)]

1. Mobility: Provide Access to On-demand Plant Data from Anywhere

Employees in manufacturing work with complex, expensive equipment. They handle multiple responsibilities, deal with more regulations today than ever before, and need the ability to troubleshoot plant equipment or production status, from the office, home or on the road.

"When plant managers carry a mobile device, the real-time information improves productivity by 5 to 10% — and with access to real time sales information, the improved forecast accuracy reduces overproduction waste by an average of 5%." [(5)]

2. Effective Management: Improve Decision-making and Manager Effectiveness

Using existing smart phones and tablets, manufacturing workers can accelerate decisions by delivering up-to-date plant data and Key Performance Indicators (KPI) to knowledge workers or plant managers to provide more ad-hoc/on-demand visibility into real-time plant operations.

"When Motorola converted from traditional to lean quality process, the result was world-class quality, including a 60% reduction in product defects." (5)

3. Quality: Validate Process Accuracy

Products must be manufactured at record speed, yet the struggle for competitive pricing has resulted in outsourcing to vendors that may be located across town or around the world – adding a new level of complexity to the quality assurance function. When access to plant applications is available on mobile devices, the speed and accuracy of quality checks can be significantly improved, and quality assurance processes can be standardized. The automated capture of quality data enables manufacturers to achieve "Six Sigma" quality, virtually ensuring that customers receive the right product, manufactured in the right way and facilitating a robust access environment to meet strict regulatory guidelines.

One of the "greatest benefits of remote access is that it opens a wide portal to the organization's plant data" (5)

"70% of manufacturing decision-makers are looking to leverage mobile." (3)

4. Data Security: Ability to Utilize Resources Securely

One of the greatest benefits of remote access: opening a wide portal to the organization's plant data, is also a significant potential weakness. Providing adequate security of that data, when employees access it from outside the confines of the "normal plant," is probably the highest concern faced by IT.

Some key regulations mandate stricter policies for IT security. An effective mobility solution must adequately protect corporate data. (4)

"When mobility is utilized in the asset maintenance function, plant availability increases an average of 5%." (5)

5. Production: Increase Line Uptime

The ability to view real-time Human Machine Interface (HMI) and Visual Supervisory Control and Data Acquisition (SCADA) information on mobile devices provides operators and engineers with better control over the health of critical equipment such as the production line machinery. Operators no longer need to leave the machinery to travel to a "wired workstation" to input critical machine status information. Engineers are no longer tied to the control room to monitor machine status – they are now able to receive, acknowledge and act upon, alarms wherever they happen to be. Production and employee safety levels are improved, and potential equipment issues are spotted and addressed more quickly and more consistently. Finally, since bottlenecks and deviations are instantly visible, managers can take action before yield is impacted. Through consistent execution of best practices by the field workforce, manufacturers are able to achieve reliable, safe and profitable operations while accelerating and sustaining mainstream process improvements.

4. A Solution that Stretches Beyond the Ordinary HMI

According to market research firm, ARC Advisory Group, *"HMI software must be in a position to offer solutions, such as HTML5, for mobile devices as well as the growing acceptance of personal devices being used in business, 'bring your own device' (BYOD), which is accelerating the adoption of wireless tools. The adoption rate of these devices is increasing and by the end of the study's 2017 forecast period may become a default part of an HMI software offering norm"… "Delivering real-time information to the smartphone provides value ranging from plant executives to maintenance technicians. Tablets are replacing some HMI panels in some manufacturing installations, and they will become a common method of operating equipment remotely located. It will be much simpler and less expensive to build, for example, a pump control panel for a remote pump station with a Bluetooth connection, and have an operator walk up and operate it from the tablet versus building a conventional control panel. Some HMI software and services suppliers support devices, such as iPads, through a remote desktop" (6)*

Create Solutions for Mobile Visualization

The industrial automation market has progressed to the point that there are multiple vendors now that provide mobile access to their applications. Invensys, for example, has 7 different applications that use some factor of mobility:

- Wonderware® Intelligence (smart tablet displays of KPIs)
- Wonderware SmartGlance (smart device-enabled reporting through phones and tablets)
- Wonderware IntelaTrac (mobile worker task management)
- Wonderware Workflow (BPM-bound work tasks)
- Avantis.PRO (mobile-enabled maintenance management)
- SimSci™ Esscor™ EYESIM (3D operator training and simulation)
- Wonderware InTouch® Access Anywhere™

At Invensys, the strategy for mobility is to provide visualization, collaboration and execution at all levels of the organization. A powerful mobile capability, InTouch Access Anywhere, enables users to access plant floor screens, in an affordable, secure and productive way using any browser from anywhere and at anytime.

The InTouch Access Anywhere solution enables users to access plant-floor data via Wonderware InTouch, the world's number one human machine interface. Using any browser from anywhere and at anytime, the InTouch Access Anywhere solution runs entirely and securely inside a web browser, so users can connect to other InTouch applications from Microsoft® Surface tablets, iPads, iPhones, Android and other devices, Apple iOS and Linux-based computer systems, as well as from more traditional Microsoft Windows PCs and laptops. In addition, there are no requirements to install any software on the end-user device, so the offering is remarkably easy to deploy, manage and maintain.

5. Summary

As manufacturing facilities continue to fight for survival and dominance within their respective markets, they must take steps that will maximize their resources. Providing casual users with reliable and secure remote access to plant data, is rapidly becoming a vital element in an organization's success.

Mobile technologies for manufacturers come in a variety of formats and functionalities, to match not only your data access needs, but the types of information you need displayed and monitored.

HMI in a mobile Browser is the ideal solution for providing HMI access via Wi-Fi or the Internet – securely, easily and affordably. Users, both local and remote, may be granted seamless and transparent access to their HMI and SCADA data, anytime and anywhere to greatly enhance productivity.

With a mobile solution the organization benefits from an optimized IT infrastructure with enhanced security, reduced costs of travel and PC management, and inherent business continuity capabilities. [5]

6. References

(1) AutomationWorld (2013, March 1), Mobile Device in Automation, www.automationworld.com/control/mobile-devices-automation.

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(4) Ericom (September, 2012), Access Done Right, Mobile Access Security & Management: Managed and Unmanaged Mobile Access to Windows Applications and Virtual Desktops – from Smart phones and Tablets.

(5) Motorola (2012), White Paper: Top 10 Mobile Solutions for Lean Manufacturing.

(6) ARC Web (2013), Human Machine Interface Software and Services Global Market Research Study Market Analysis and Forecast through 2017.

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