Improve Plant Operations with Mobile Devices, KPIs, and Alerts

George Ikonomou
Applied Control Engineering
George D. Ikonomou  
Applied Control Engineering, Inc.

- PMP-certified Project Manager with over 20+ years of industrial and R&D experience
- Industry experience includes oil & gas, petrochemical, chemical, specialty chemical, and paper with business and project activity in over twenty countries in the North America, Europe, Middle East, and Asia.
- Background includes work in APC (Advanced Process Control), MES (Manufacturing Execution Systems), and Project Management for MES and OTS (Operator Training Simulation) projects
- Joined ACE from Hyperion Systems Engineering in August, 2010
- PhD in Chemical Engineering
Agenda

- Challenges
- Solution
- Implementation
- Benefits
Changing Workforce Expectations
Smartphones in Operations

“By 2013, mobile phones will overtake PCs as the most common Web access device Worldwide”

“By 2014, 90% of organizations will support corporate applications on personal devices”

“By 2013, 80% of businesses will support a workforce using tablets”

The iPad takes on manufacturing
The iPad, darling of the consumer crowd, dares to get gritty as Pfizer and other companies try it out in industrial settings.

By Beth Stackpole
August 29, 2011 06:00 AM ET

Computerworld - First it won accolades as the next killer consumer device. Then it slipped into the backpacks and briefcases of white-collar information workers, and in some cases it's becoming a corporate-sanctioned alternative to the laptop.

Now the Apple iPad -- and, to a lesser extent, emerging competitors in the burgeoning tablet market -- are starting to pop up on the plant floor and in distribution centers and warehouses, promising to wring efficiencies and cost savings out of industrial operations by offering mobility and real-time data visibility to workers in manufacturing.

From 1989 GRiD PAD to 2010 iPad
From 1992 Simon to 2010 iPhone
Industry Monitors Take Notice
Why Implement Mobile BI?

Reasons for Implementing Mobile BI

- Delays in alerting key decision makers to critical information
- Need to increase productivity of mobile employees
- Belief that Mobile BI gives us a competitive advantage

Source: Aberdeen Group, Mobile BI: Actionable Intelligence for the Agile Enterprise, December 2010
Our Business Challenges
Unlocking the value of mobile

• **Competitive pressures** forcing us to deploy managers and engineers more effectively

• We have **fewer people**, with less time to collect data and make insightful analysis
  – Less time for analysis = people need to work harder & smarter
  – Users need access to critical “real-time” information to improve bottom line

• Business is demanding
  – Cost reductions, higher uptime, improved operational efficiency, etc.

• We want managers and engineers to move from reactive to proactive
Unchain our Key People!

• Engineers spend more time on the plant floor, but...

• Alerts and Performance data are “Locked” in the Desktop. Today, we need to:
  – Monitor performance regardless of location
  – Eliminate Information Latency: By the time our performance is known, it is too late to make adjustments
  – Have an easy way to view, combine and analyze data across the enterprise
The Solution

Mobile Access to all Data Historian Information

*Process Data To The Right People, Anytime, Anywhere!*
Key Product Features
Overview

- Remote access to IP.21 via a mobile Smartphone
- e-mail alerts, SMS notification alerts
- User interface with role-based access privileges
- Industry standard security technologies and protocols

Aspen InfoPlus.21 Mobile
Key Product Features
User Interface

• Mobile Devices
  – Safari browser on Apple iOS 3.x and 4.x (iPod Touch, iPhone, iPad)
  – BlackBerry browser on BlackBerry OS 6

• Desktop Browsers
  – Internet Explorer 7 and 8
Key Product Features
Licensing

• Perpetual and NCM Token licensing available
• Same licensing as Process Explorer, Process Browser & RBV
  – 3 users = 1 token
Key Product Features
Easy to Navigate

- Breadcrumb tells you where you are
- Simple page hierarchy
- Start with the big picture
- Values when you get to a page with tags
- Sparkline view of the same tags
Key Product Features
Tag Details

**Details View**

![Details View Image]

- **Email**
- **Detail**
- **Trend**
- **Alerts (0)**

**Tag Details**

- **Display name**: Flow
- **Source ID**: tc105 (IP.21)
- **Current value**: 658.0 DegF
- **Current status**: OK
- **Value quality**: Good
- **Timestamp**: 2/17/2011 12:15 AM
- **Description**: TRAN LINE F-6101
- **Plant area**: Crude
- **High High limit**: 680.0 DegF
- **High limit**: 675.0 DegF
- **Low limit**: 645.0 DegF
- **Low Low limit**: 638.0 DegF

*Page requested: 12:15:40 AM
Data read at: 12:15:42 AM*

**Trend View**

![Trend View Image]

**Aspen InfoPlus.21**

**AC... > No... > Bost... > Rx20... > Flow**

**Email**

**Detail**

**Trend**

**Alerts (0)**

**Graph**

- **High High**
- **High**
- **Low**
- **Low Low**

*Range*


*Page requested: 12:15:13 AM*

**About | Logout | My preferences**
Key Product Features
Show Related Tags
Key Product Features

KPI Details

KPI record types support more details

All record types support related tags for prescriptive analysis
Key Product Features

Alerts

**R1Availability LowLow alert at 175.0 Ml/min**

February 17, 2011 12:33 AM

You have the following alert: **R1Availability Alert #71243**.

Location: ACME Corp\Americas\Corpus Plant\R1.
Configuration

**IP.21**
- Standard Record configuration
  - Name
  - Description
  - Value
  - Limits
  - Target
  - Cost of Deviation

**IP.21 Mobile**
- Security Access (Users and Roles)
- Pages and Tags
- Durations
- User Preferences
  - Local/Time Zone
  - Page Visibility
  - Alerting
Fully configurable through a web-based management console
End users set their own preferences

![Image of preference settings interface]

### General preferences

<table>
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<th>Page/tag</th>
<th>Effective setting</th>
<th>Home page</th>
<th>Enable visibility</th>
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Download complete.

View log 108
Log out
Implementation Strategy

1. Deployment work plan for mobility roll-out
2. Start small internally, then expand and move externally
3. End-users want configurability
4. Support multiple devices
1. Work Plan: Develop Mobility Deployment

1. Information Access Plan
   - Scope
   - Roles
   - Pages
   - Tags

2. IT Plan
   - Network Topology
   - Security
   - IT Resources

3. IT Deployment
   - Installation
   - Configuration

4. Information Deployment
   - Configure Roles
   - Configure Users
   - Configure Timers
   - Configure Connections
   - Configure Pages and Tags
   - Grant access

5. End User Deployment
   - User Notification
   - Personalization
2. Started Here

Customer Network

Data Center

IP.21 Mobile UI Server

IP.21 Mobile Data Server

Process Data

ADO.NET

SMTP

Database

Directory

Mail

End User (Wireless/Cellular Device Browser)

End User (Laptop browser)

End User Preferences (Laptop SilverLight)

Administrator (Laptop SilverLight)

End User Preferences (Laptop browser)

Corporate data available onsite only
2. Finished Here

Allowed access from outside the corporate network

Customer Network

DMZ
- IP.21 Mobile UI Server
- HTML
- HTTP
- HTML
- HTTP(S)

Data Center
- IP.21 Mobile Data Server
- HTML
- HTTP
- HTML
- HTTP(S)
- ADO.NET
- SMTP

End User
- (Wireless/Cellular Device Browser)

End User Preferences
- (Laptop SilverLight)

Administrator
- (Laptop SilverLight)

End User
- (Laptop browser)

Database
- IP.21

Directory
- Mail

End User Preferences
- (Laptop SilverLight)
Supported Configurations

- **IP.21 Mobile Server**
  - Windows Server 2003 SP3 (32 or 64-bit) with IIS 6
  - Windows Server 2008 R2 (64-bit) with IIS 7
- **SMTP (Mail) Server**
- **Database**
  - Microsoft SQL Server 2005 SP3
  - Microsoft SQL Server 2008 R2
- **IP.21 Server**
  - Out-of-the-box connectivity to V7.1 and v7.2
Benefits

• Enhanced start-up and shutdown consistency and dramatically reduced **issue resolution** time
  – Unit availability & dispatch response
• **Instant alerts** anywhere anytime reduced outages and duration
  – Dramatically improved response to disturbance and trip conditions
  – Reduced information latency
• Unchained plant personnel moving decision making from **reactive to proactive**
• Increased asset availability and **performance**
• Highly configurable views to combine and **analyze** operating data, **regardless of location**
  – Workforce productivity and job satisfaction increased together!
Questions?
Thank You!

To contact an IP.21 Mobile expert or request more information

George Ikonomou
Project Manager
ikonomoug@ace-net.com

www.ace-net.com

Daniel Dearwater
Channel Sales Director
Dan.dearwater@aspentech.com

www.aspentech.com