



*Setting the Standard for Automation™*

# **Improve Plant Operations with Mobile Devices, KPIs, and Alerts**

**George Ikonomou**  
Applied Control Engineering

Standards  
Certification  
Education & Training  
Publishing  
Conferences & Exhibits

# 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 2011, The iPad takes on manufacturing

common 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

14 Comments

Like

127

+1

16

“By  
app

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 to 2010 iPad

From 1992 Simon to 2010 iPhone

9

ate

ber 2010

orkforce

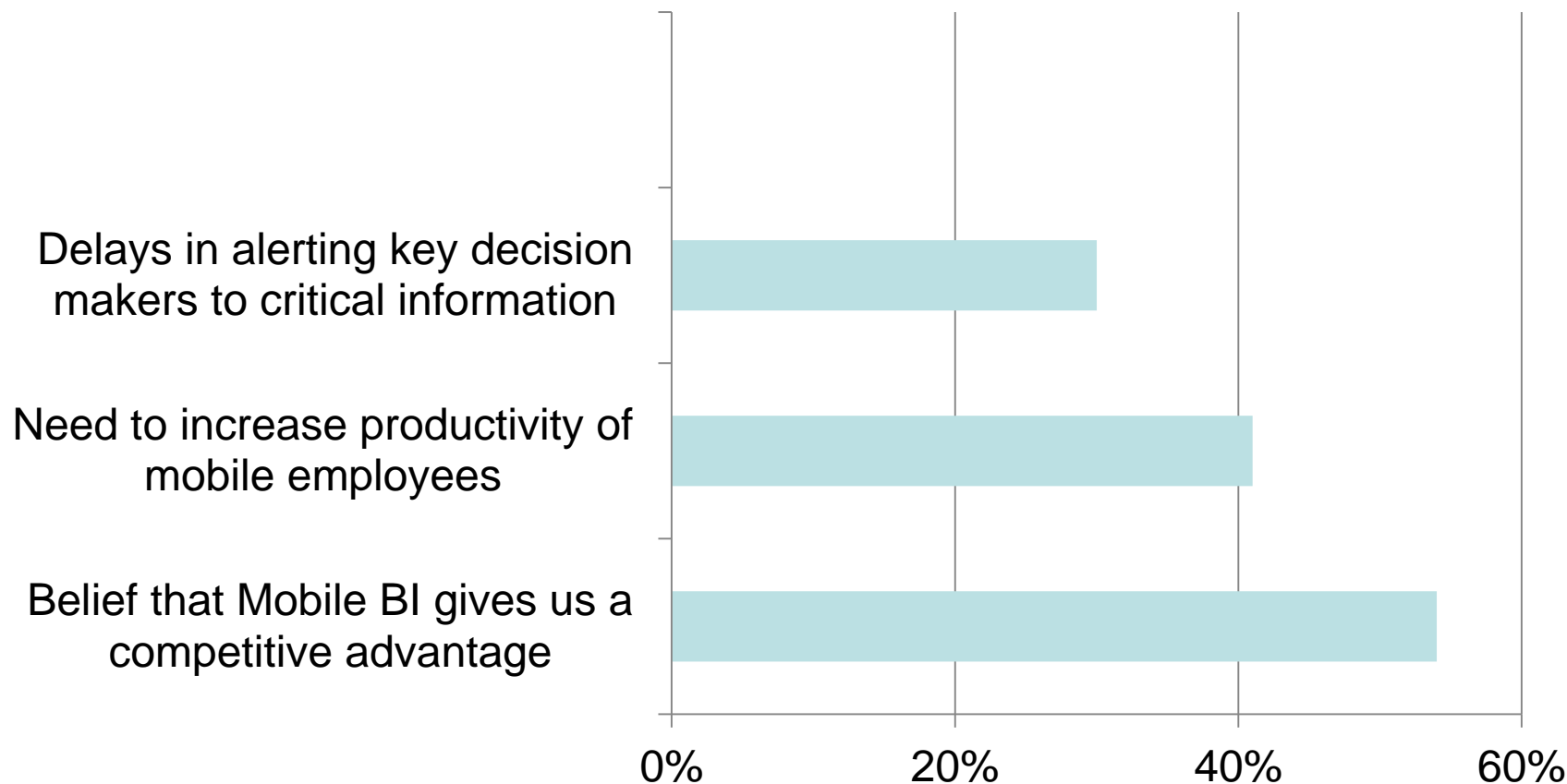
l”, November 2010

# Industry Monitors Take Notice

## Why Implement Mobile BI?



### Reasons for Implementing Mobile BI



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



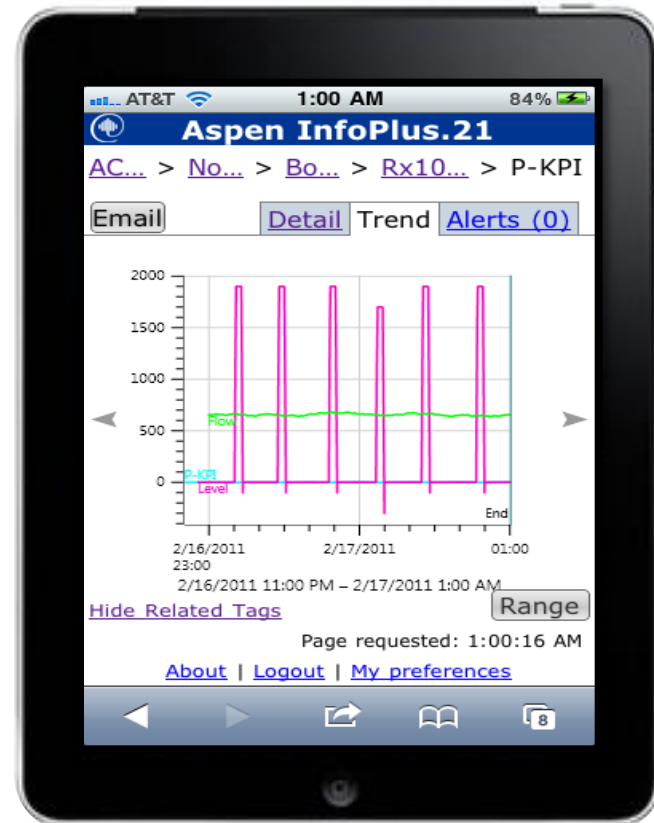
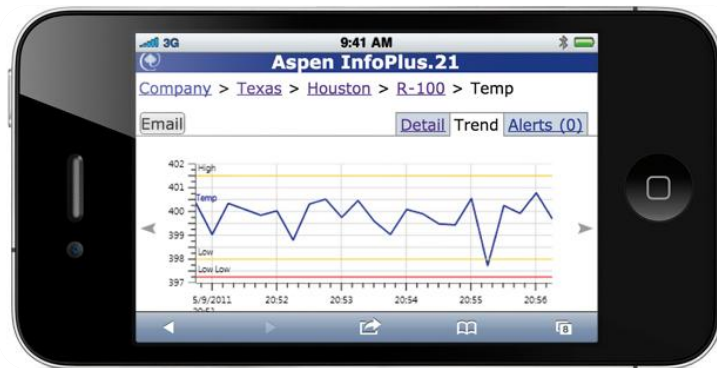


# The Solution



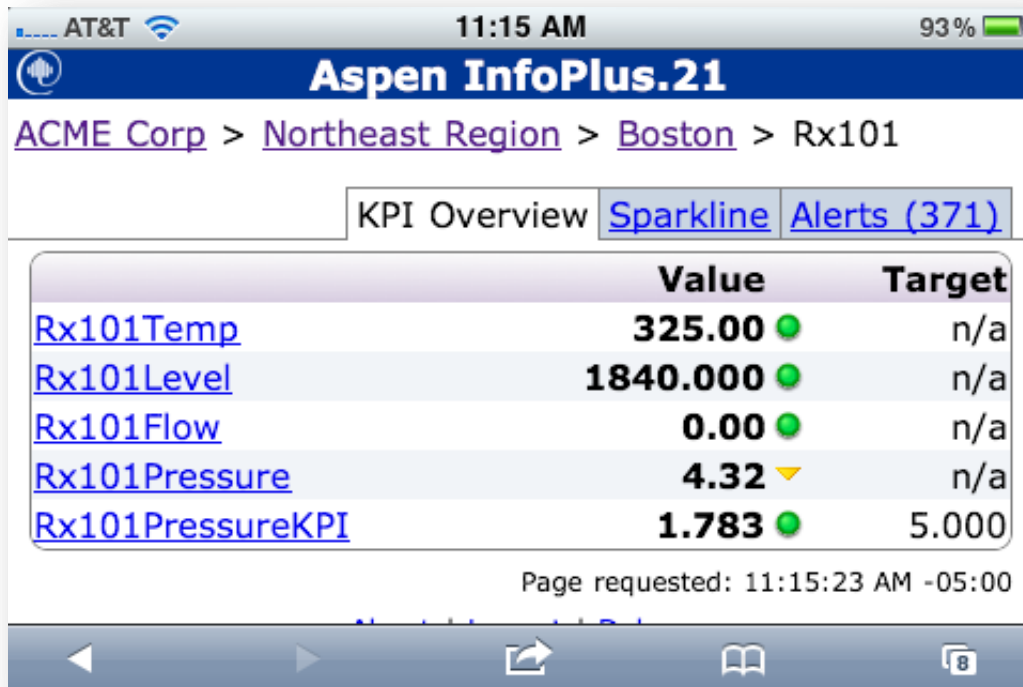
Mobile Access to all Data  
Historian Information

*Process Data To The Right People,  
Anytime, Anywhere!*





# Key Product Features Overview



## Aspen InfoPlus.21 Mobile

- 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

# 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

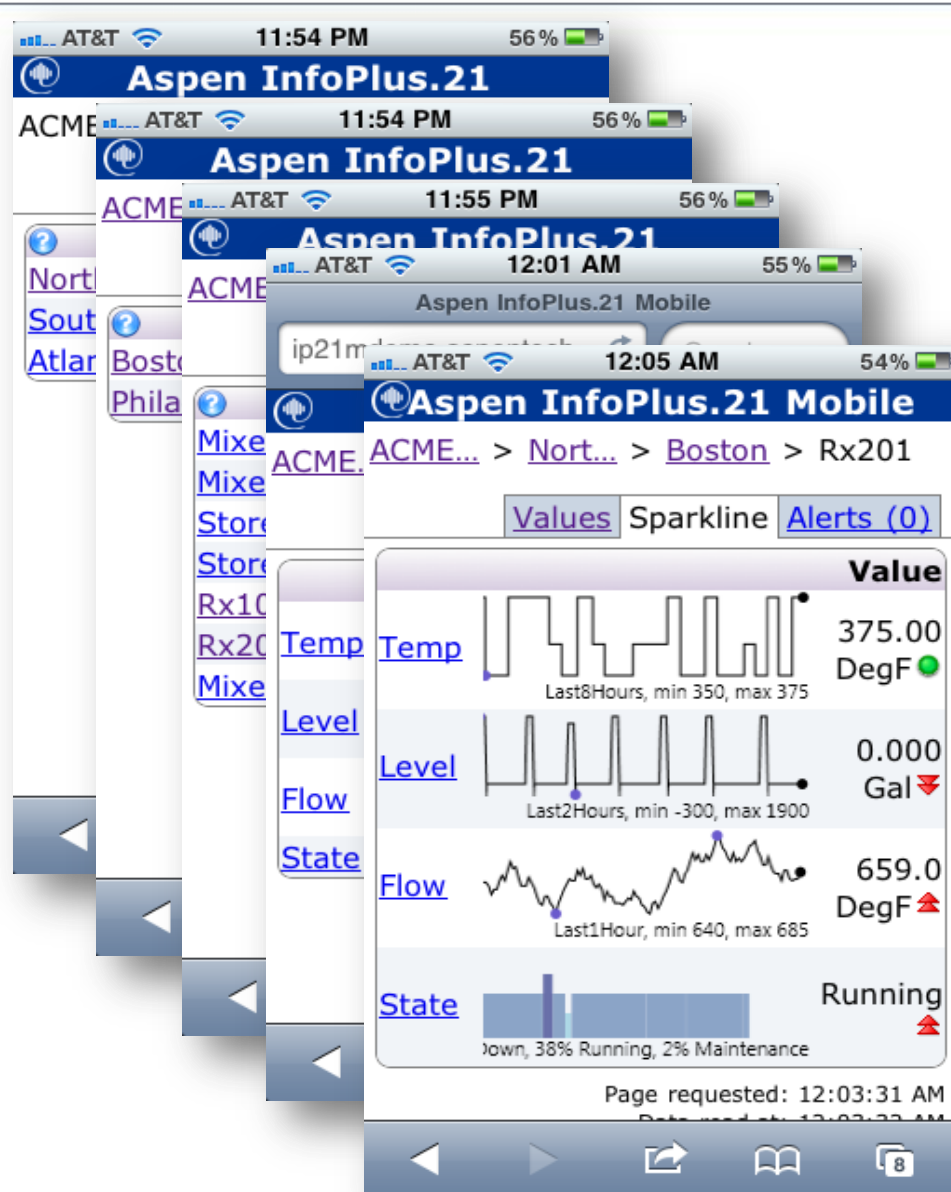
## Licensing



- Perpetual and NCM Token licensing available
- Same licensing as Process Explorer, Process Browser & RBV
  - 3 users = 1 token

# Key Product Features

## Easy to Navigate



Start with the big picture.

Simple page hierarchy

Breadcrumb tells you where you are

Values when you get to a page with tags

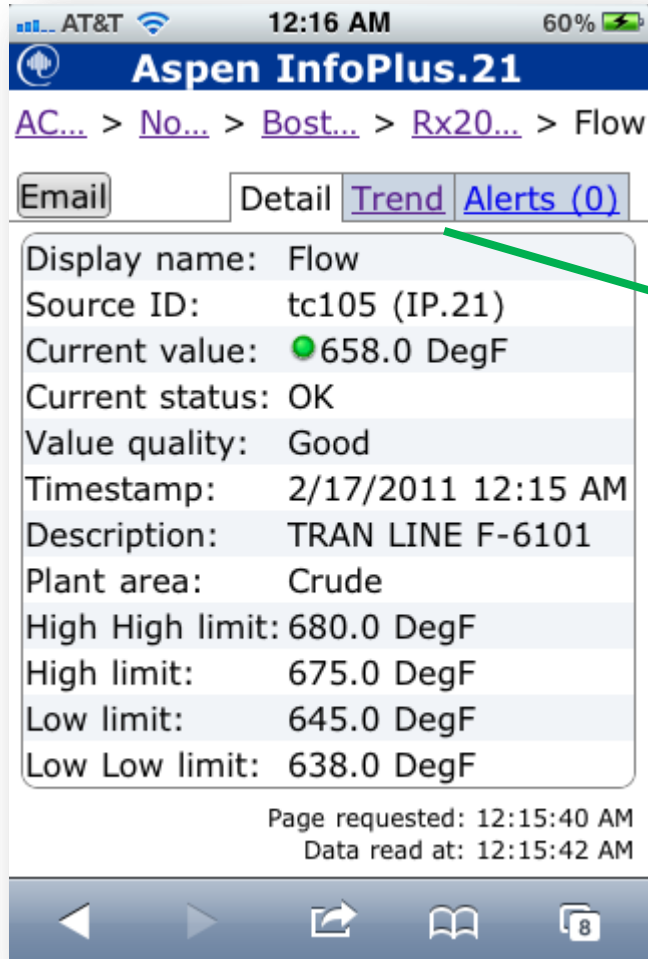
Sparkline view of the same tags

# Key Product Features

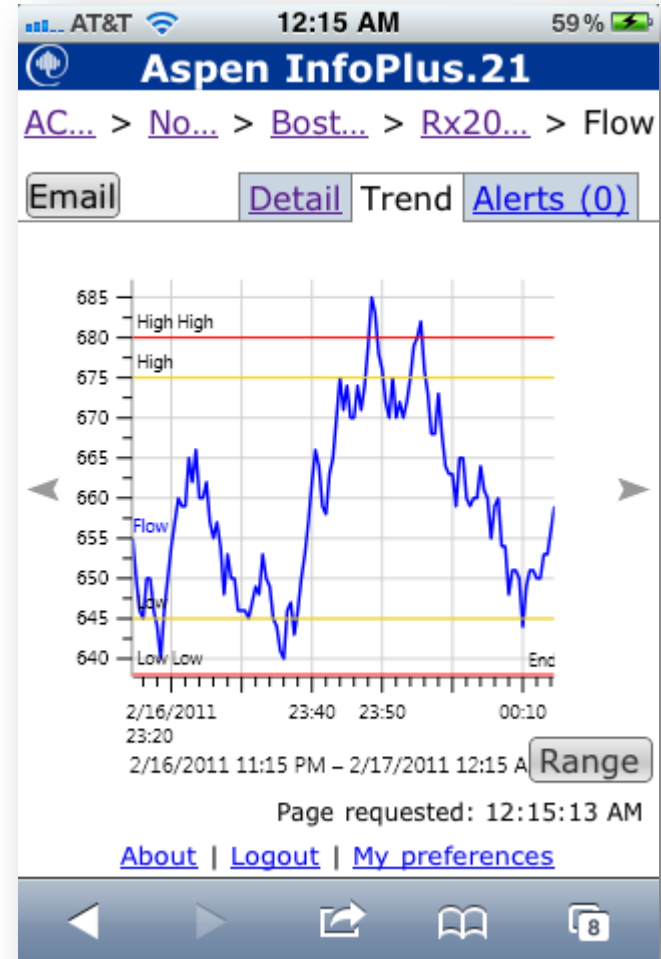
## Tag Details



### Details View

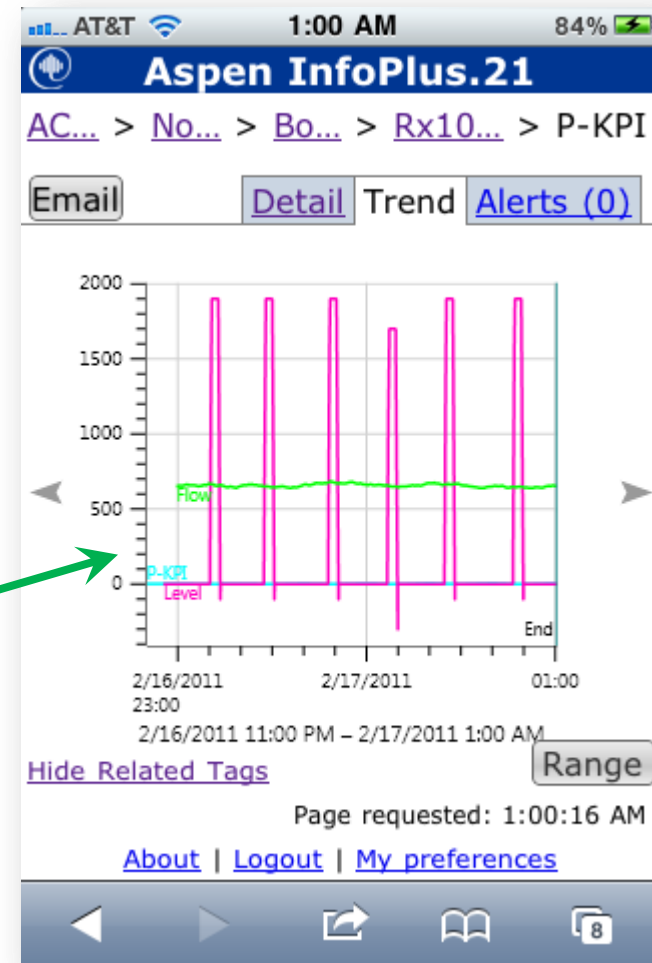
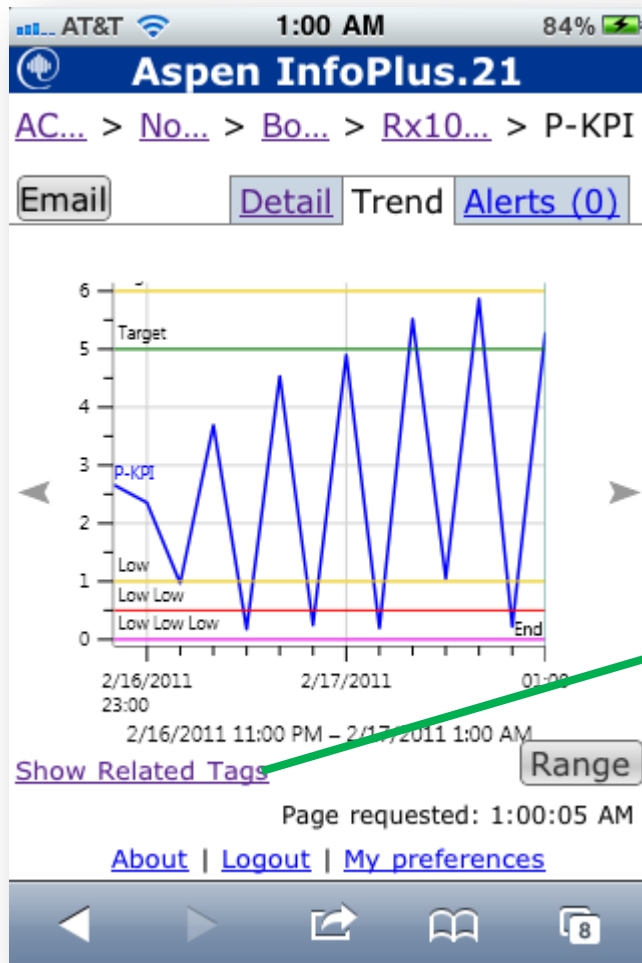


### Trend View



# Key Product Features

## Show Related Tags



# Key Product Features

## KPI Details



AT&T 12:30 AM 68%

Aspen InfoPlus.21 Mobile

ip21mdemo.aspentech... Google

**Aspen InfoPlus.21**

AC... > No... > Bo... > Rx10... > P-KPI

Email Detail Trend Alerts (0)

Display name: P-KPI

Source ID: Rx101Pressure\_KPI (IP.21)

Current value: ● 5.519 PSIG

Current status: OK

Value quality: Good

Timestamp: 2/17/2011 12:20 AM

Description: Rx 101 Pressure KPI

Plant area: Area 1

High High High limit: 7.000 PSIG

Navigation icons: back, forward, share, book, tabs (8)

AT&T 12:30 AM 68%

AMI

Description: Rx 101 Pressure KPI

Plant area: Area 1

High High High limit: 7.000 PSIG

High High limit: 6.500 PSIG

High limit: 6.000 PSIG

Target value: 5.000 PSIG

Low limit: 1.000 PSIG

Low Low limit: 0.500 PSIG

Low Low Low limit: 0.000 PSIG

Cost of deviation: 7.778

Cost of deviation: Dollars/pound/hour

Related tags: ● [Rx101Level](#)  
● [Rx101Flow](#)

Page requested: 12:29:37 AM  
Data read at: 12:29:38 AM

[About](#) | [Logout](#) | [My preferences](#)

Navigation icons: back, forward, share, book, tabs (8)

KPI record types support more details

All record types support related tags for prescriptive analysis



# Key Product Features Alerts



AT&T 12:40 AM 73%

All Inboxes (2) 1 of 102

From: Aspen InfoPlus.21 Mobil... Hide

To: Jeremy Suratt

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

February 17, 2011 12:33 AM Mark Unread

You have the following alert:  
[R1Availability Alert #71243](#).

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

Aspen InfoPlus.21 Mobile

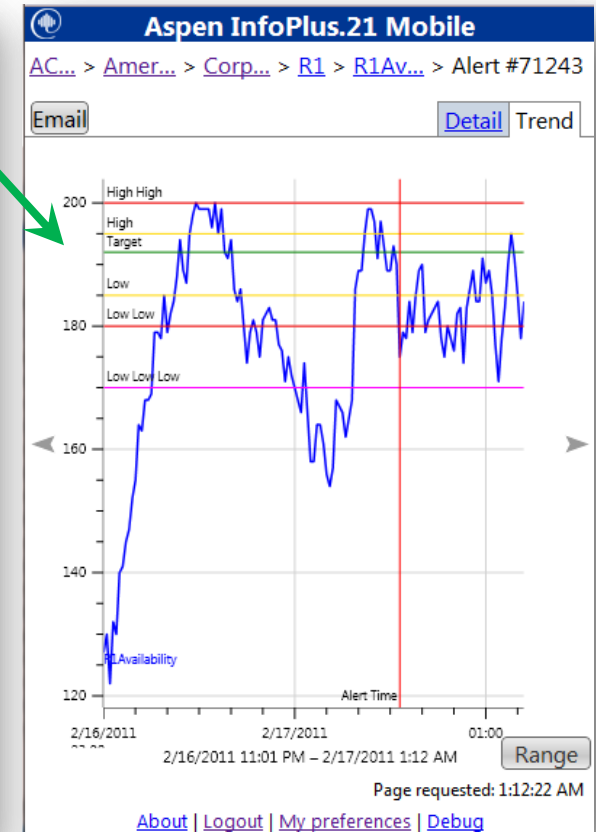
AC... > Am... > Corp... > R1 > R1Av... > Alert #71243

Email Detail Trend

Alert ID:	71243
Display name:	<a href="#">R1Availability</a>
Source ID:	KPI2138 (Lupus3)
Alert value:	▼ 175 MI/min
Alert status:	Low Low
Alert timestamp:	2/17/2011 12:33 AM
Current value:	▼ 171 MI/min
Current status:	Low Low
Current quality:	Unknown
Description:	KPI from FI2138
High High High limit:	210 MI/min
High High limit:	200 MI/min
High limit:	195 MI/min
Target value:	192 MI/min
Low limit:	185 MI/min
Low Low limit:	180 MI/min
Low Low Low limit:	170 MI/min
Cost of deviation:	17 Euros/liter/minute

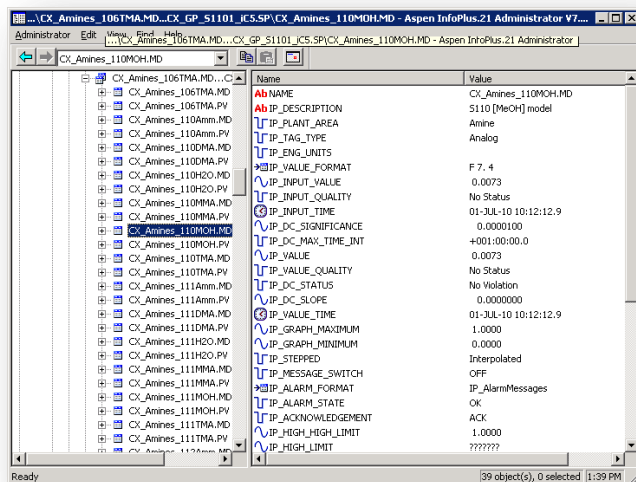
Page requested: 1:04:49 AM  
Data read at: 1:04:49 AM

[About](#) | [Logout](#) | [My preferences](#) | [Debug](#)



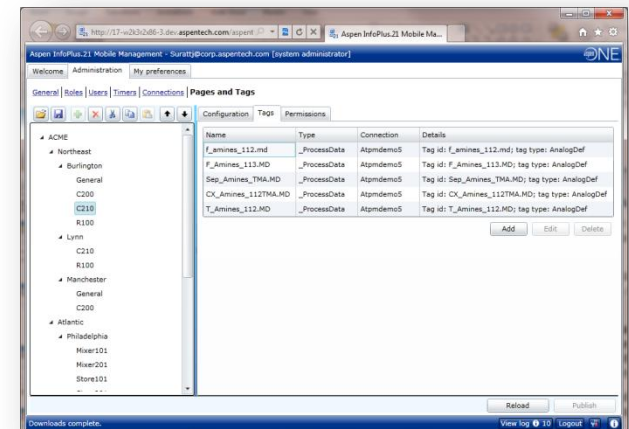
## IP.21

- 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



The screenshot displays the Aspen InfoPlus.21 Mobile Management web console. The browser address bar shows the URL <http://ip21mdemo.aspentech.com>. The page title is "Aspen InfoPlus.21 Mobile Management - MIP21-DEMO\admin1". The navigation tabs include "Welcome", "Administration", and "My preferences". The "Administration" tab is active, and the "Pages and Tags" sub-tab is selected. The left sidebar shows a tree view of the system structure: ACME Corp > Northeast > Boston > Rx101. The main content area shows the "Configuration" tab for the selected tag. It contains a table with the following data:

Name	Type	Connection	Details
Temp	_ProcessData	IP.21	Tag id: atctemp1; tag type: Analc
Flow	_ProcessData	IP.21	Tag id: ATCF103; tag type: Analo
Pressure	_ProcessData	IP.21	Tag id: ATCP301; tag type: Analo
P-KPI	_ProcessData	IP.21	Tag id: Rx101Pressure_KPI; tag t

Below the table are "Add" and "Edit" buttons. At the bottom of the console, there are "Reload" and "Publish" buttons, and a status bar indicating "Downloads complete." and "View log 108 Logout".

# End users set their own preferences



Aspen InfoPlus.21 Mobile Management - MIP21-DEMO\admin1

Welcome Administration My preferences

My preferences source

☐ Use preferences from role: All my roles merged by priority

☒ Custom (user defined) preferences.

General preferences

Page/tag preferences

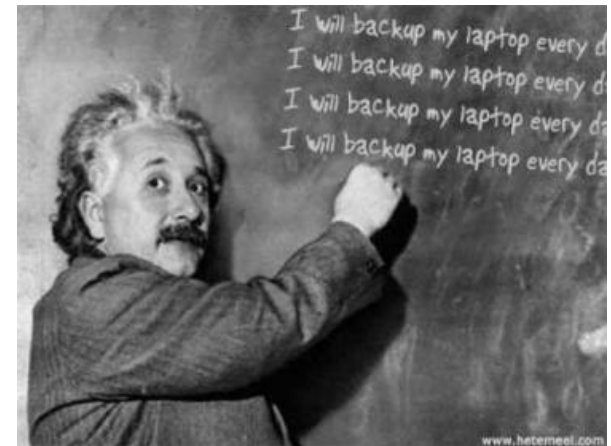
Page/tag	Effective setting	Home page	Enable visibility	Enable alerts	Low low low	Low low	Low
ACME Corp		<input type="radio"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
Northeast		<input type="radio"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
Boston		<input type="radio"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
Mixer101		<input type="radio"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
Mx101Flow						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Mx101Level						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ATCL101						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
atcai						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
atcp301						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Save

Downloads complete.

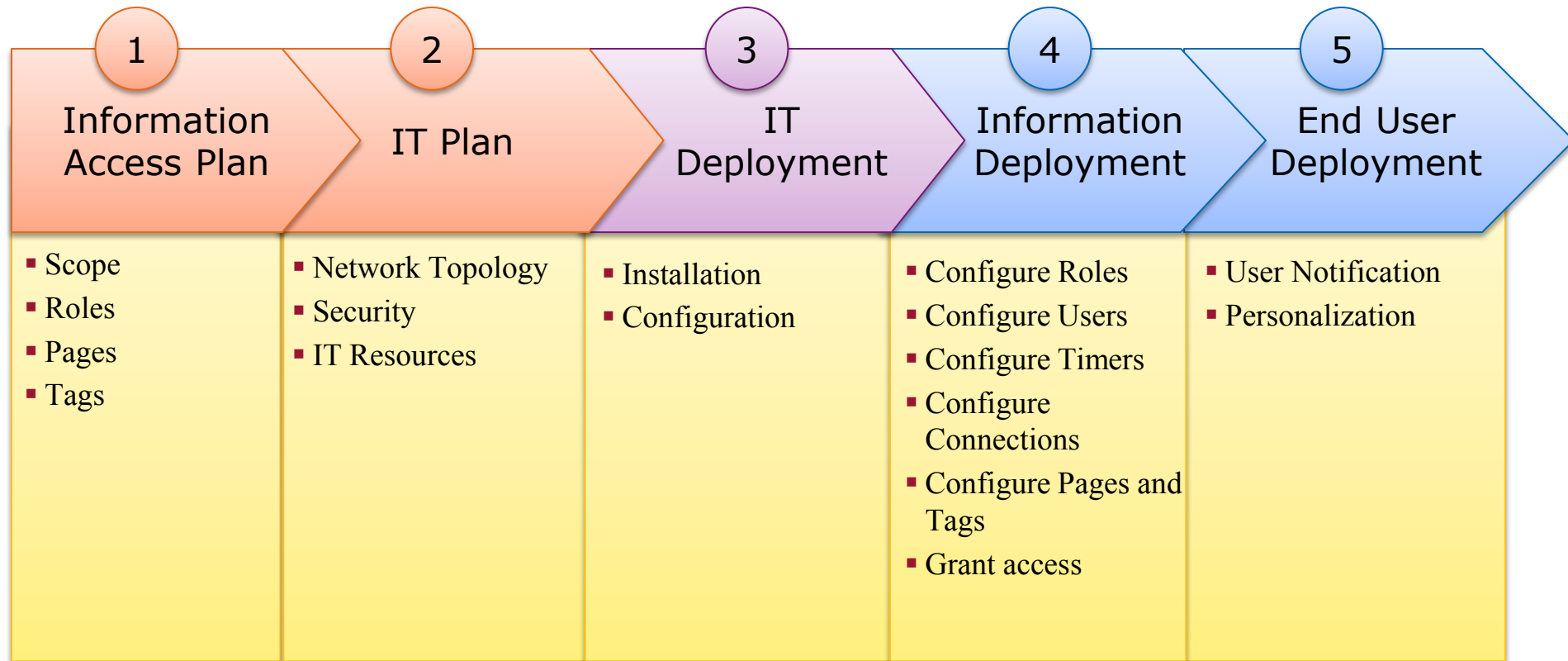
View log 108 Logout

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:

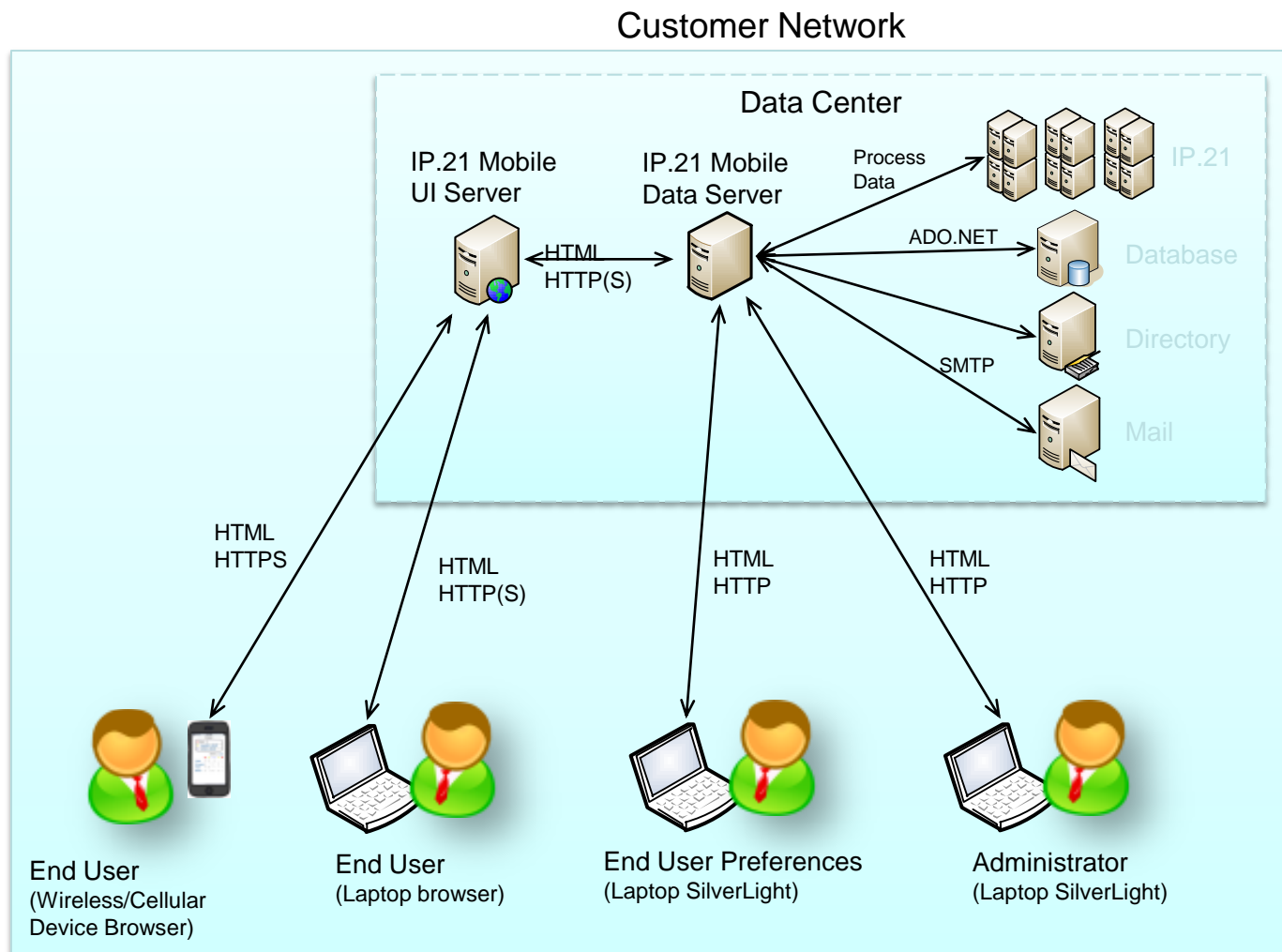
## Develop Mobility Deployment



## 2. Started Here



Corporate  
data  
available  
onsite  
only

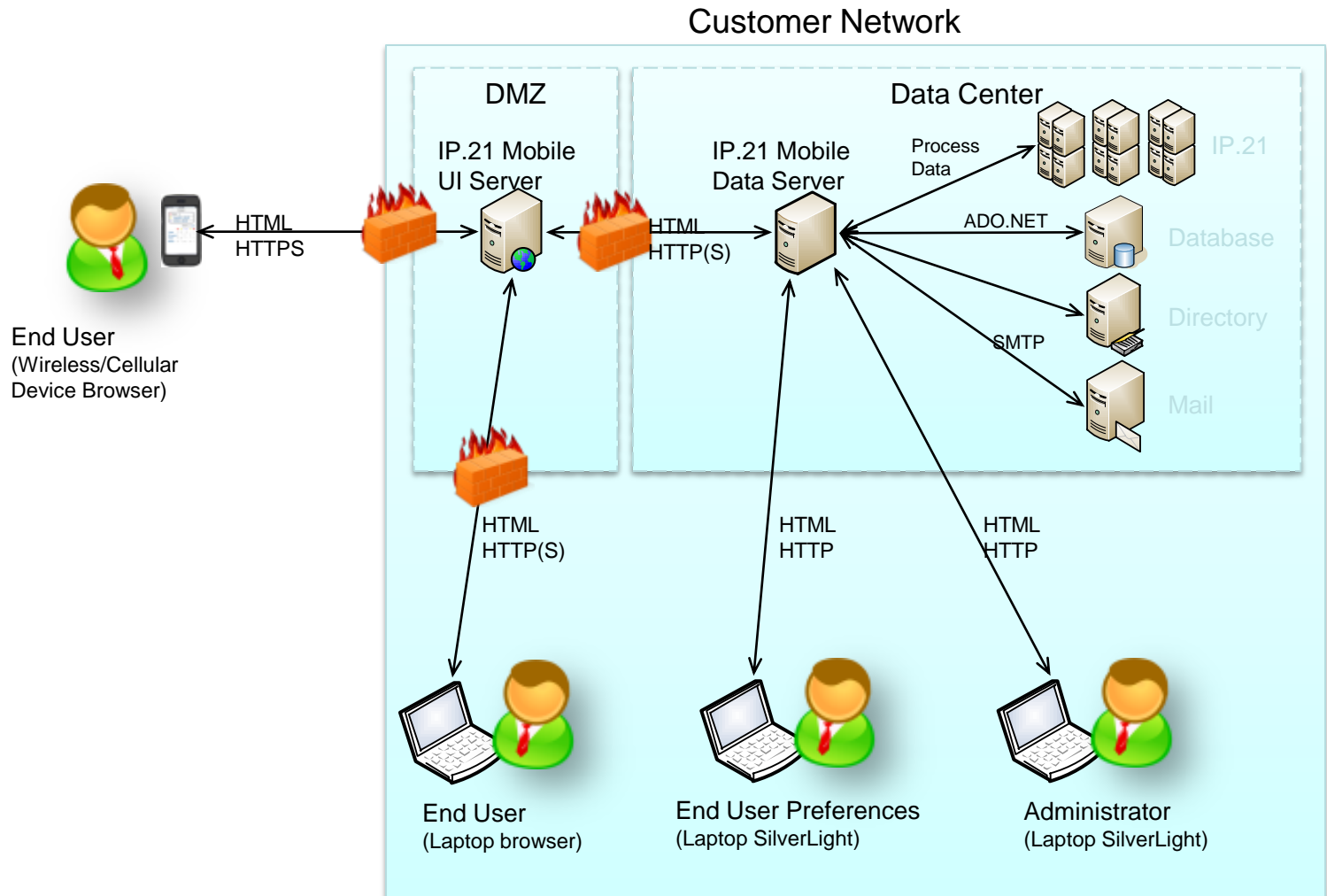




## 2. Finished Here



Allowed  
access  
from  
outside the  
corporate  
network



# 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

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