



# vCampus **Live! 2011**

## The Perfect Storm: PI Systems, Cloud Services, and Windows Phone 7

By: Lonnie A. Bowling, DST Controls



***“Sony Ericsson Sold 22 Million Android Devices To Date, Going Smartphone-Only In 2012”***

- Techcrunch, August 2011

***“90 million Americans will use a tablet device in 2014”***

- eMarketer a Digital Marketing Research Firm, November 2011



***“A Few Years From Now, Most Every Single Person At Facebook Is Going To Be Working On Mobile”***

- Bret Taylor, Facebook CTO, October 22<sup>nd</sup> 2011 interview for Techcrunch



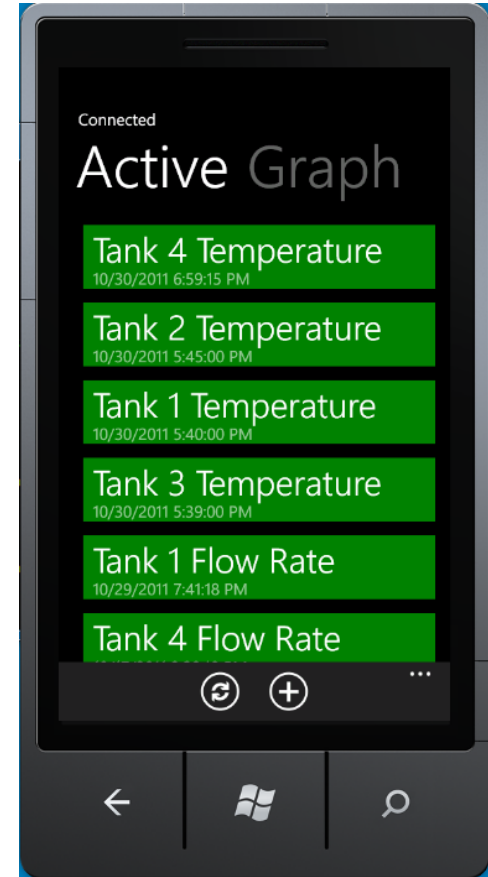
***“I don’t see a field that will grow and prosper more than automation, but the appeal to the new people will depend upon the adoption of the tools that they are comfortable with—like, how would you tune a controller with an iPhone, and does your plant text you when it is in trouble?”***

- Pat Kennedy, Founder and CEO, OSIsoft, February 2009



# One Year Ago Goals

- Write a mobile app for my Windows Phone 7
- Have PI Notifications push alerts to my phone
- Use Azure Cloud Services to provide access to a PI System

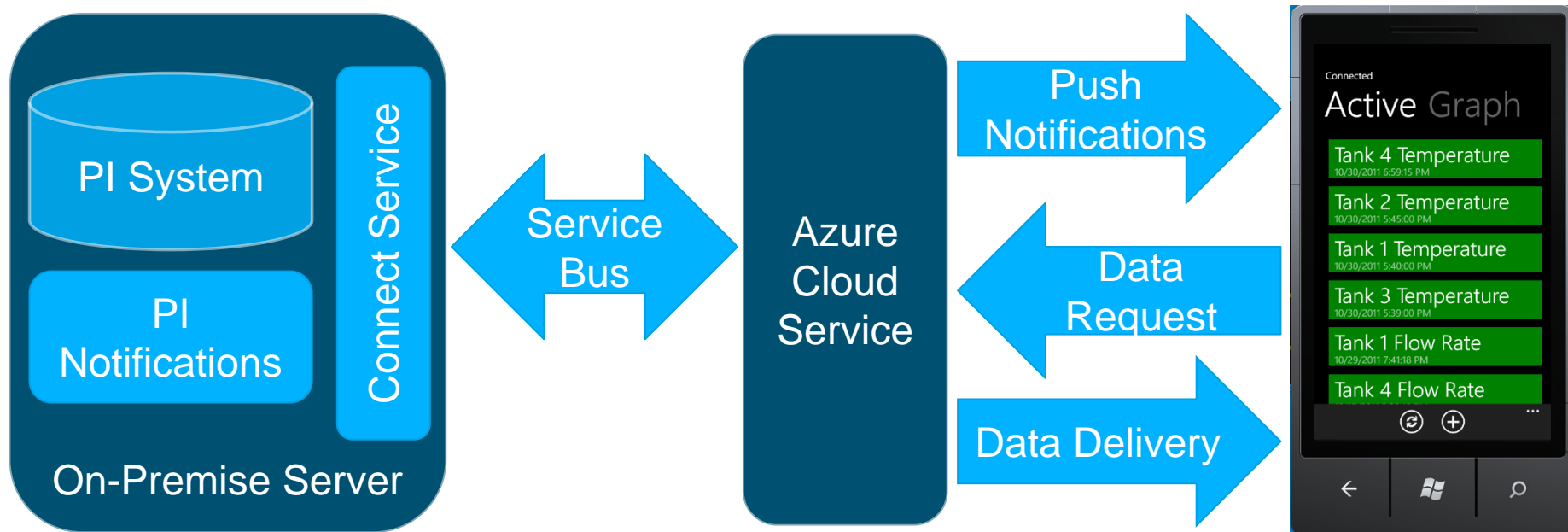


# What We are Covering

- Review the Design
- Demo the App
- Technical Details
- My Take-Away
- (Sorry No Code Review, but...)



# System Architecture





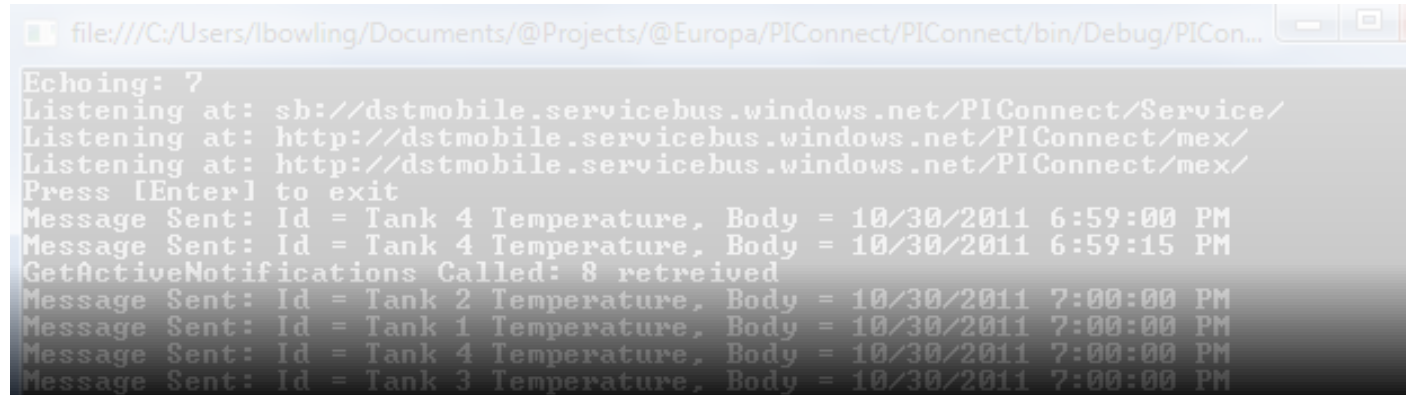
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# Connect Service

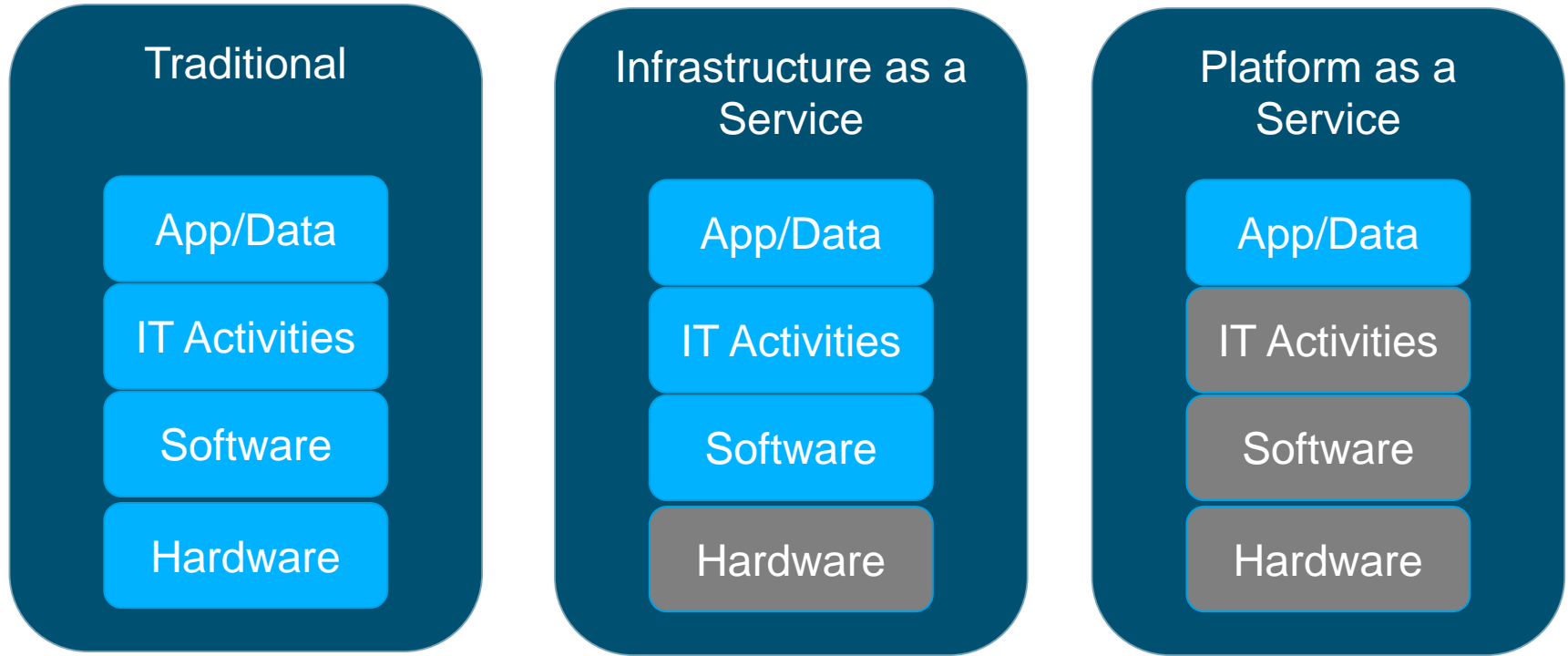
- PI SDK, AF SDK
- PI Notifications Web Service Endpoint
- Uses Azure Service Bus



```
file:///C:/Users/lbowling/Documents/@Projects/@Europa/PIConnect/PIConnect/bin/Debug/PICon...
Echoing: 7
Listening at: sb://dstmobile.servicebus.windows.net/PIConnect/Service/
Listening at: http://dstmobile.servicebus.windows.net/PIConnect/mex/
Listening at: http://dstmobile.servicebus.windows.net/PIConnect/mex/
Press [Enter] to exit
Message Sent: Id = Tank 4 Temperature, Body = 10/30/2011 6:59:00 PM
Message Sent: Id = Tank 4 Temperature, Body = 10/30/2011 6:59:15 PM
GetActiveNotifications Called: 8 retrieved
Message Sent: Id = Tank 2 Temperature, Body = 10/30/2011 7:00:00 PM
Message Sent: Id = Tank 1 Temperature, Body = 10/30/2011 7:00:00 PM
Message Sent: Id = Tank 4 Temperature, Body = 10/30/2011 7:00:00 PM
Message Sent: Id = Tank 3 Temperature, Body = 10/30/2011 7:00:00 PM
```



# What is a Cloud Service?





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Windows Azure

# Azure Cloud Services

- Web and Worker Roles
- Services Buses
- Access Control (ACS)
- Blob Storage and Table Space
- SQL Database
- Much more... Visit Azure Website



# Mobile - Things to Consider

- Always with you
- Touch
- Location
- Social interaction
- Tablets



# Mobile Apps – Two Directions

- Native - richest user experience
  - Fragmented platforms (iPhone, Android, WP7)
- HTML5/Javascript – widely supported
  - Not as fully featured as native



# Windows Phone 7 Development

- Based on Silverlight (C#/VB/XAML)
- Metro Style
- Fast prototyping
- Visit “App Hub” to get started



# What I Learned

- Shift my thinking to service architecture
- Steep learning curve, but it gets easier
- Azure has improved over the year
- Security is a big concern
- Growing number of examples and tutorials online for phone and cloud





# Lonnie A. Bowling

Find me in the Developers Lounge!

Code Walk-Throughs

Questions/Answers

Just to Talk Mobile

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**#VCL11**



# How will people access data in the future?



# Thank you

