Setting the Standard for Automation™

Efficiency Alert: Utilizing Tablet Technologies in Traditional Engineering Projects

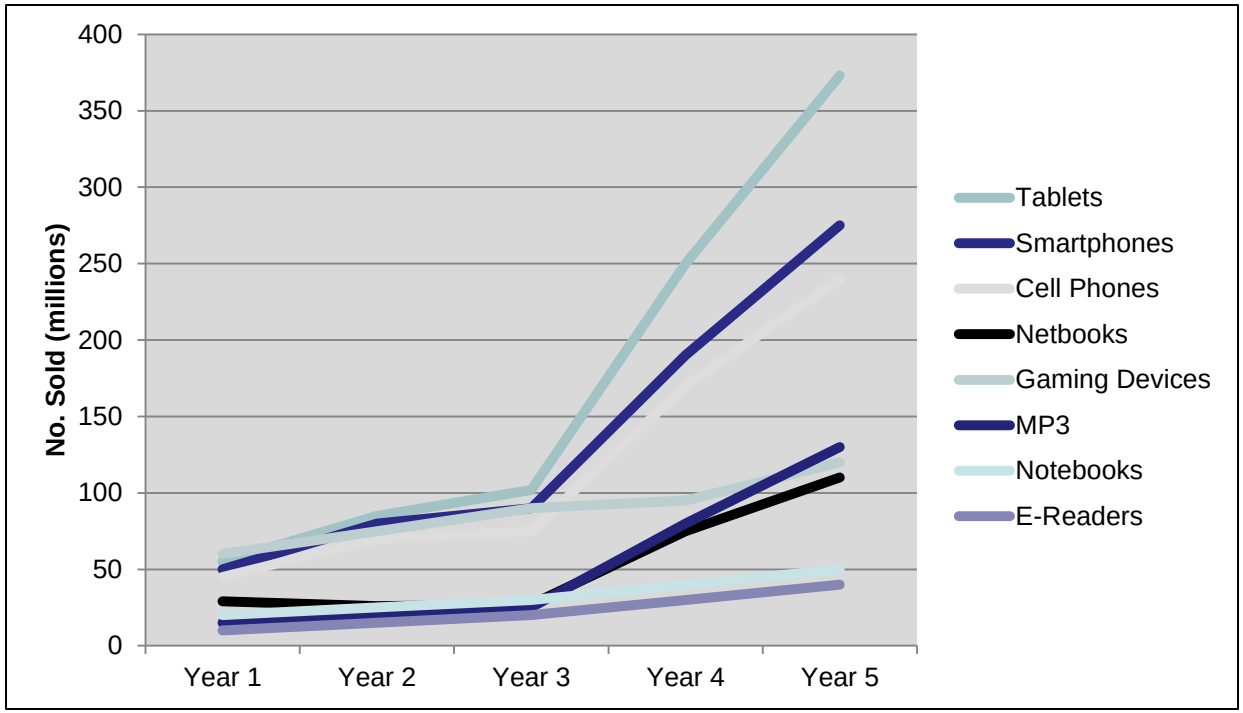
Timothy Lemoine P.E. and
Scott Byrne P.E.
Matrix Technologies, Inc.

Standards
Certification
Education & Training
Publishing
Conferences & Exhibits

Presenters

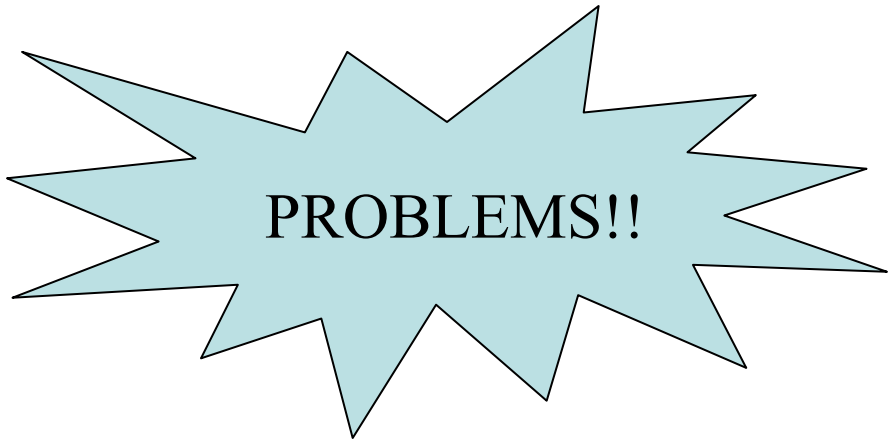
- Tim is a Sr. Manager in the engineering division and has direct responsibility for the Power, Instrumentation and Controls departments at Matrix Technologies, Inc.
- Scott is a Manager in the engineering division and has direct responsibility for the Instrumentation Department at Matrix Technologies, Inc.

Tablet Market Penetration



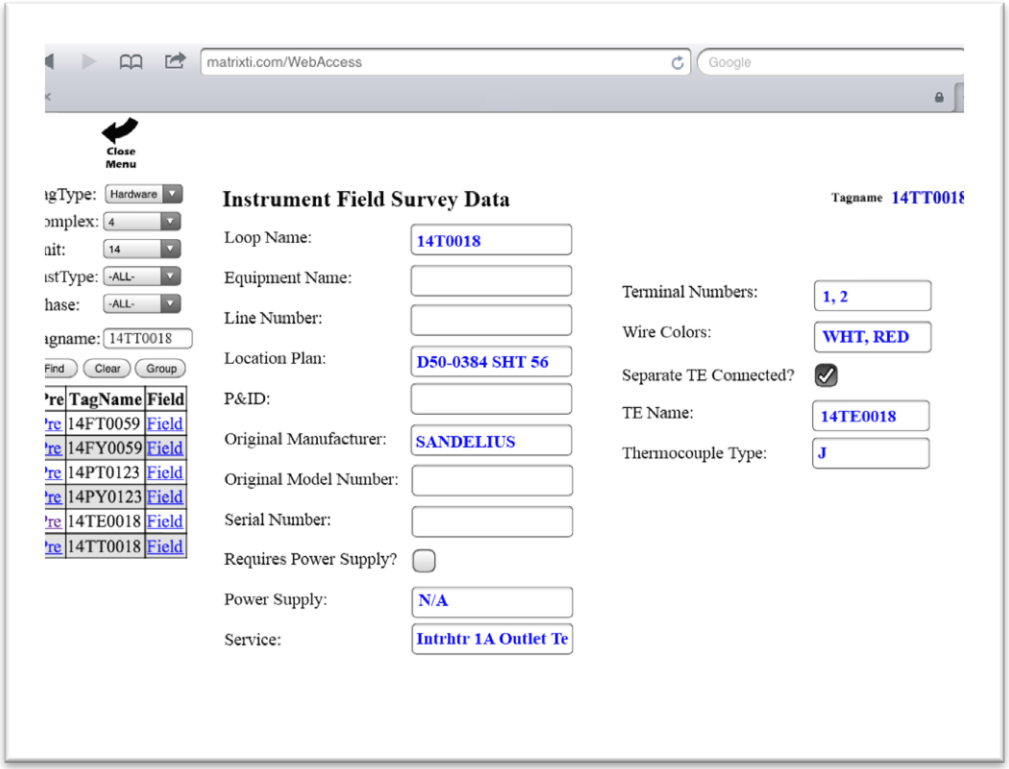
Project Background

- Instrument Survey of 3,000 Instruments
  - Confirm the field location
  - Confirm representation on P&IDs
  - Gather several data points relating to the instrument
  - Place identification tags on the instrument
  - Take several photos

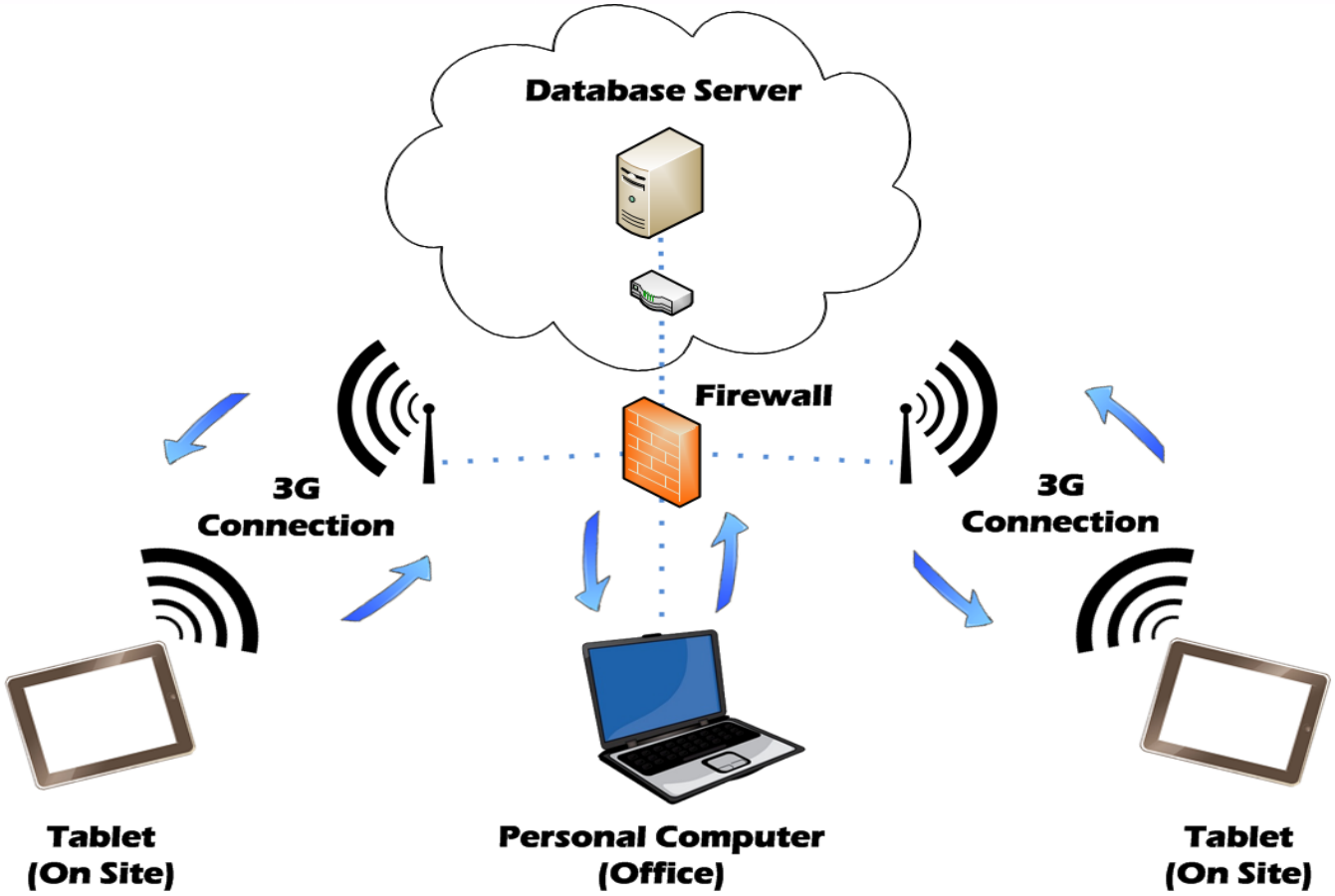


Creation of the Tablet Solution

- Database and Web User Interface (WUI)
  - Eliminate multiple spreadsheets with repetitive data
  - Eliminated stale or incomplete data
  - Eliminated reliance on voicemail or email communications



Solution Architecture



Decision Criteria for Input Device

- Portability
- Inherent “instant-on” capability
- Adequate viewing area
- Long battery life
- Relative low cost
- Available accessories
- Custom or user ready apps
- Built-in security features
- Instant communications between team members

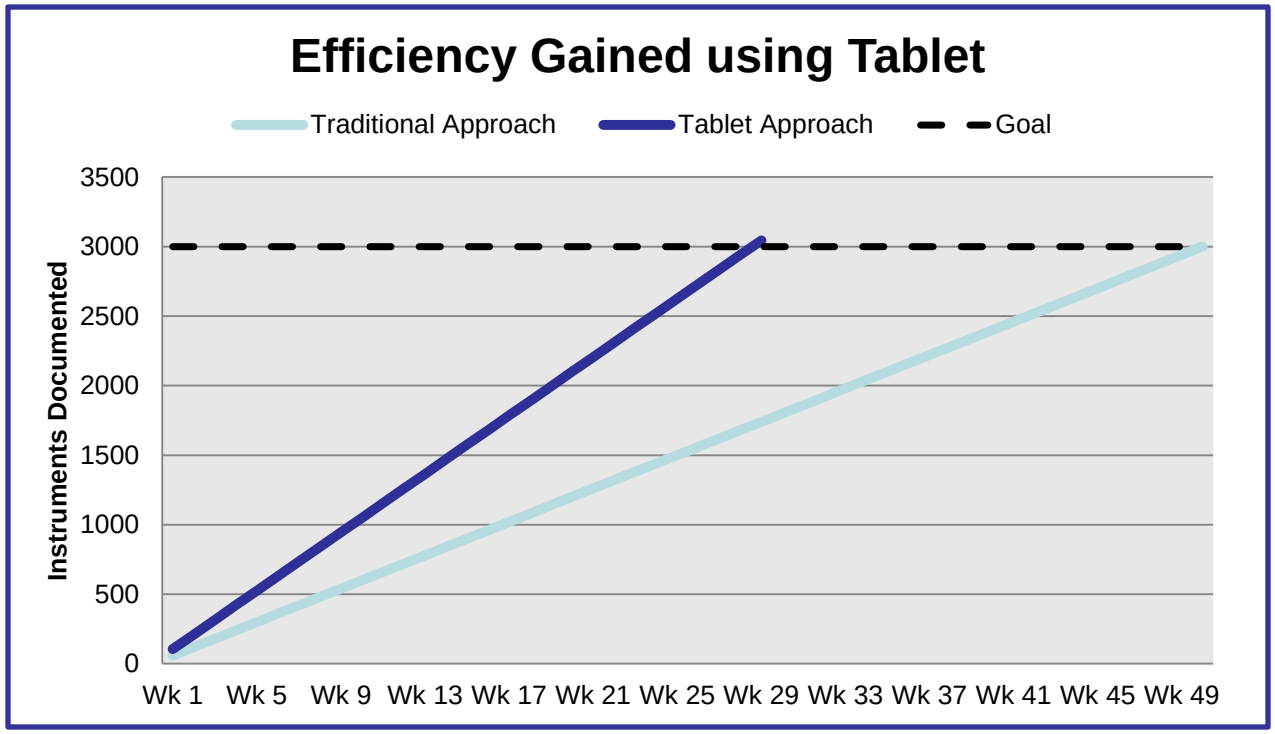
Implementation Issues

- Safety Department approval
- Reliable Internet access
- Tablet environmental protection

Instrument Survey – Tablet Method

Major Issues	Traditional Method	Tablet Method
Progress Tracking	Manually counting each day's progress	Instant reporting
Communication between Field and Office Teams	Voicemails	Email and Instant Messaging
Logistics of Drawing Management	Clipboards filled with drawings	Pdfs retreived from the cloud
Environmental	blowing, stained, soaked documents	No papers required, hardened case protects against weather
Drawing editing	Hand marked redline	Electronic redline overlay app
Transfer of data	Hand delivered at prolonged intervals	Instant delivery via database reporting over internet connection
Data Entry	All twice, on paper then into spreadsheet - prone to errors	One time via tablet
Lost or Illegible Data	High probabity	Near zero probability
Safe Working Conditions	Multiple drawings, documents, pencils carried.	Tablet strapped over the shoulder, hands free climbing

Data Comparison – Traditional vs. Tablet

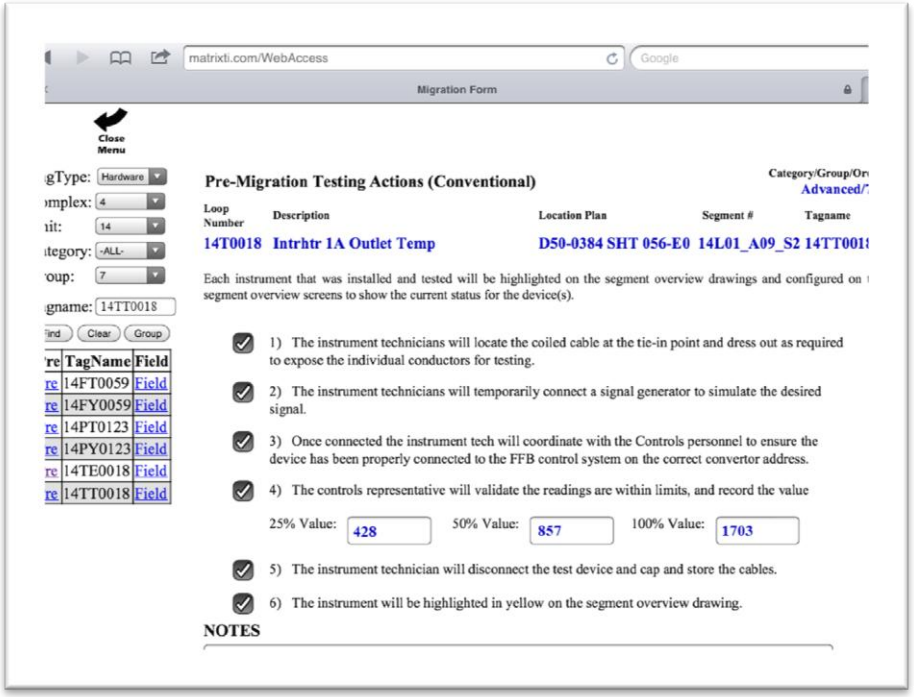


Security

- Physical Layer (1): Remote wipe of tablet
- Network Layer (3): Server hardware behind the firewall
- Session Layer (5): Strong password
- Presentation Layer (6): TLS encryption
- Application Layer (7): User access levels

Additional Applications

- Commissioning



- Operations/Maintenance data logging

Summary

- Budget
- Schedule
- Quality

Questions?


Matrix
Technologies
INCORPORATED
CONTROL ENGINEERING
2012
System
Integrator
of the Year