Smart Asset Inspections and Real-time Field Updates

A Case Study on Veridian Connections
Introductions

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Agenda

• About Veridian
• Before MWFM
• The Project
• Summary & Lessons Learned
• Q&A
About Veridian

5th Largest
- Among Municipally owned Utilities in Ontario

230
- Full and Part-time Employees

120,000
- Residential and Commercial Customers

650km²/250mi²
- Non-contiguous Service Territory

5,000km/3,100mi
- Primary Distribution Lines

525MW
- Peak demand
About Veridian
Before MWFM

- Paper based data collection and printed maps
- Thousands of data sheets printed, sorted and distributed each year
- Forms manually input into GIS and gleaned for follow-up work
Before MWFM

- Paper based data collection and printed maps
- Thousands of data sheets printed, sorted and distributed and completed each year
- Forms manually input into GIS and gleaned for follow-up work
Business Case

1. More efficient, centralized work assignment and tracking
2. Immediate validation of data
3. Info flows directly from source to repository
4. Eventual cost savings through attrition
5. Workers expect it!
Key Selection Criteria

• Online/offline mobile capability
• Veridian-Configurable platform (add/modify forms & workflows)
• Support for rapid deployment of changes
• Support for any OS (Windows, Android, and iPad)
• Live GIS integration
GIS Feature Validation
The Traditional Model

GIS Thick Client
In-app Data validation

MWFM
In-app data validation

OMS
In-app data validation

Oracle GIS Database
GIS Feature Validation
The New Model

GIS Thick Client
Application-specific validation

MWFM
Application-specific validation

OMS
Application-specific validation

In-database common data validation

Oracle GIS Database
Project Scope

Phase 1
Asset inspections:
• Single phase pad mount transformers
• Three phase pad mount transformers
• Gang operated switches
• Solid blade switches
• Transformer vaults
Project Scope

Phase 2
Asset registry (GIS) data maintenance:

• Installation, replacement or removal of:
  – Poles
  – Switches/fuses
  – Transformers
  – Switchgears
Phase 3: Trouble Calls

- Broken poles
- Car accidents
- Vegetation issues
- Animal issues
- Flickering Lights
- Miscellaneous...
Phase 4: Meter Service Orders

- Meter replacements
- General trouble tickets
- Connects
- Disconnects
- Installs & removals
The Details:

- Hardware: Motion R12 tablets
- Software:
  - Clevest MWFM,
  - ArcGIS Server,
  - Microsoft BizTalk Server
- Input data validated at three points:
  - Form validation at source
  - Middleware validation
  - GIS (manual) validation
- Photos & GPS of assets posted directly to GIS
- Near instantaneous form updates
The Results:

- Improved operational efficiencies
- Enhanced worker productivity and safety
- Greatly improved GIS information quality
- Greater buy-in from field staff
- Average decrease of 5% in cost/unit despite increase in amount of data collected
- >90% reduction in # of GIS group interventions
- Automatic tracking of response times
The Future:

- Switchgear Inspections
- Substation Inspections
- H&S reporting forms
- Condition-based assessments
- Vehicle Circle Checks
- More...
Lessons Learned

- Strong relationship with vendors is key to success
- Test-drive different hardware products
- Engage end-users from the start to drive project support
- Deploy slowly to build comfort and mitigate fear
- Ensure sufficient support during the adoption phase
- Good remote device management software is critical
Thank You!

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