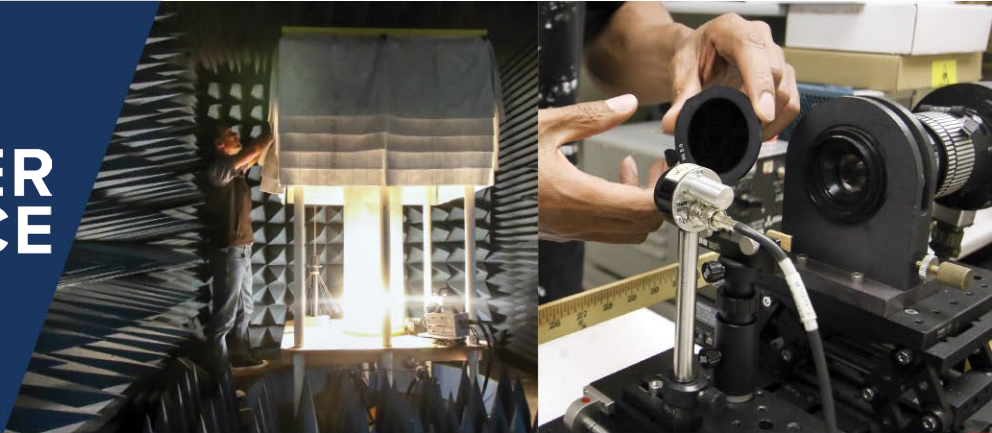# Going Mobile at the Nevada National Security Site (NNSS) Using DataSplice

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Topics

► Overview of the NNSS

► Challenges

► Stakeholders

► Preparation

► Modifications

► Implementation

► Lessons Learned

Nevada National Security Site (NNSS)

► Nevada National Security Site is a remote and highly secured site that performs a national nuclear security mission for the United States

► NNSS covers 1,355 square miles (about the size of the state of Rhode Island), has over 700 facilities, miles of utilities (power, water, sewer), and numerous different waste facilities

► Supports the following: stewardship of the nation's nuclear deterrent, providing nuclear and radiological emergency response capabilities and training, contributing to key nonproliferation and arms control initiatives, executing national-level experiments in support of the National Laboratories, working with national security customers and other federal agencies on important national security activities, and providing long-term environmental stewardship of the NNSS's Cold War legacy.

Challenge(s)

► Over 14,000 paper work packages generated annually taking significant resources to process and consuming over 690 reams of paper

► Work order data not available in real-time and takes time to process and enter into our computerized maintenance management system (CMMS), so performance reporting and decision-making is based on data that may be 2-4 weeks old or data may not be available

► Facility and asset condition not being captured or trended to perform intelligent asset management and predictive maintenance

► Loss of completed work packages and an inefficient close-out process to review and enter the data takes significant resources and requires long-term storage of paper documents
  – Thousands of WPs being lost annually, significant resources required to process completed WPs for required archiving for government-required document archiving

Challenge(s) Cont'd

► WP reviews and comment incorporation is taking a long time to perform and process due to number of reviews and paper process

–Transportation time required to obtain ALWD reviews and approvals:

–NNSS is located 90 minutes from Las Vegas, NV and can take 30-40 minutes (one-way) to transport WPs to reviewers for signature

► Requires hard/wet signatures for each work package, permit, hazard analyses, and pre/post-job briefings

► Work plans, permits, and hundreds of company forms, owned by supporting and stakeholder organizations (Safety, Industrial Hygiene, RadCon, Engineering, etc.) also use a paper process

► Paper process has been used for over 65 years

Stakeholders

- ► Executive Office
- ► Work Planning & Control
- ► Information Technology (IT)
- ► Construction
- ► Maintenance
- ► Site Services
- ► Intelligent Asset Management (IAM)
- ► Environmental, Safety, and Health (ES&H)
- ► Industrial Hygiene (IH)
- ► Radiological Control (RadCon)
- ► Facility Managers
- ► Quality Assurance (QA) / Quality Control (QC)
- ► Unresolved Safety Question (USQ)

Mobile for Maximo (M4M) (i.e. DataSplice) Preparation Activities

► Developed project schedule

► Purchased hundreds of additional licenses for Maximo and M4M

► Setup preparation support contract with vendor (Prometheus)

► Hired two additional Maximo Support Team (MST) members to support Maximo and M4M enhancements, preparation, and future implementation

► Hired a WP&C Systems Manager to manage Maximo and M4M

► Hired a dedicated person to train users on M4M

► Purchased and configured 290 mobile tablets

► Setup numerous sync stations throughout NLV and the NNSS

► Distributed tablets in phases

M4M Preparation Activities Cont'd

► Made additional enhancements to M4M to support different business processes

► Trained numerous planners, job supervisors, facility managers, Safety professionals, IH, RadCon, and other support organization personnel

► Converted over 3,500 Maximo job plans (JPs) to mobile JPs to-date; 1,400 more to go

► Converted hundreds of checklists associated with JPs to mobile forms

► Converted over 172 company forms into mobile forms

► Modified 50+ company directives and operational procedures (OPs) to allow for using mobile WPs and forms

► Performed numerous live dry runs

M4M Needed to Support Different Organizational Business Processes

▶ Mobile application needed to support different business processes in numerous organizations

▶ Each organization has unique requirements and work activities

▶ M4M was modified/enhanced to support these business processes and user requirements

NEW FEATURES!
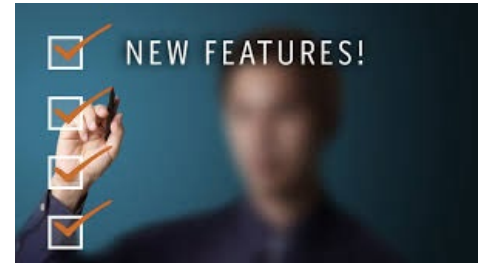
M4M Modifications

► Added key fields to the work order header (WO#, title, WP type, location/facility, scheduled start, schedule finish

► Created different views for execution and support organizations

► Created custom searching/filtering by: location, facility, planner, supervisor, support person, mobile form, scheduled start date, scheduled finish date, work type, etc.

► Developed and implemented mobile task override functionality, which includes selecting a user and having them enter their personal identification number (PIN) to verify their identity

M4M Modifications Cont'd

► Created work order delay capture log

► Created mobile WP review functionality

► Created ability to complete a standalone mobile form and tie it to one or more work orders

► Show which labor classes can work each work order

► Ability to create and track changes to mobile tasks and obtain approvals

► Ability to show WP change logs

► Ability to attached documents/files to mobile tasks

► Reduced number of work orders to improve sync times for upload/download

M4M Modifications In Progress

► Mobile tasks (in M4M) that trigger automatic work order status updates in Maximo, according to existing workflows

► Will automatically email/notify a person who overrode a task on which work order and task, along with the date and time

► Show charge numbers for each mobile task (when applicable)

► Import Skill of the Worker (SOTW) data from STAR for each work order and display those that have the SOTW skills in the work order

► Using mobile forms on work order routes

What Challenges Did We Encounter During Preparation?

► Clear R2A2s

► Ownership by execution organizations

► JP Conversion - # and reviews

► Resource changes during preparation

► Communication with all stakeholders

► Management Support and Championing

► Ensuring everyone had the right access levels and permissions

► Requests for enhancement that are made to appear as go/no-go requirements prior to go live

► Laptop configuration to meet schedule

► Finding excuses to delay implementation and blame game

Preparation: Lessons Learned

► Conduct dry runs 2-3 months in advance to identify modifications that are needed and thoroughly test all aspects

► Be ready for last minute excuses and naysayers

► Communication expectations, value, and benefits repeatedly and clearly to stakeholders

► Hold weekly project/stakeholder meetings

► Transfer ownership to implementing organizations

► Identify and capture opportunities to improve and enhance; however, prioritize them and determine those required for implementation

► Better and more feedback during preparation instead of during/post-implementation

► Combining/consolidating job plans

► Conduct training close to implementation

► Dry runs were helpful

Preparation: Lessons Learned Cont'd

► Provide countdown checklists
► Test mobile forms prior to use
► Provide job aids and short video tutorials on how to use M4M
► Use sprints for critical M4M configuration and development activities
► Show off Mobile WPs a lot to stakeholders communicate and build confidence
► Have responsible person with M4M SMART goals to make it personal
► Plan for schedule slip (add in float)
► Don't skimp on SME support
► Engage end users
► Stay the course!

M4M Implementation Activities

► Preparing for each phased implementation
► Obtaining access to all Maximo and M4M users
► Configuring and distributing mobile tablets
► Finishing and revising mobile forms
► Finishing conversion job plans and hundreds of mobile checklists
► Modifying M4M to meet business process needs
► Addressing feedback from managers and users quickly
► Setup sync stations
► Developing mobile work packages (helping planners develop them)
► Training M4M users
► Performing dry runs

M4M Implementation Schedule

▶ NNSS Balance of Plant (BOP) Construction – early February 2023 - COMPLETED

▶ NLV Maintenance – early March 2023 - COMPELTED

▶ U1a Construction – early April 2023 – IN PROGRESS

▶ U1a Maintenance – early May 2023 – ON TRACK

▶ NNSS Maintenance – early June 2023

▶ Site Services: Roads and Grounds – early July 2023

▶ NNSS Construction (Remaining locations – early August 2023 – COMPLETED with BOP

▶ DAF Maintenance – early September 2023

▶ Site Services: Power Operations – early October 2023

▶ Site Services: Waste and Water – early November 2023

▶ Site Services: Light & Heavy Duty Fleet – early December 2023

▶ Remote Sensing Laboratory (RSL) – Nellis – early January 2024

Implementation Challenges

► Ownership by execution organizations
► Additional JPs and checklists requiring conversion that were not identified during preparation
► Resource challenges
► Lots of excuses not to implement or use
► Requests for enhancement that are made to appear as go/no-go requirements prior to go live
► Issues identified and communicated during implementation and not during preparation
► Reputational impacts if there is a minor 'bump in the road' or something is not working correctly
► Differing expectations
► Managing the feedback and communications
► Change resistance

What Went Well

► Mobile JP conversion – highly productive subcontract team

► Configuring and distribution of tablets – IT distributed to meet implementation schedule

► Training – multiple training sessions targeted for planners, job supervisors/foremen, and support organizations

► M4M modifications – quick and solid

► Executive-level visibility ('Must Do List')

► Adaptability and flexibility of the WP&C team

► Communication

Keys to Success

- ► Risk management / failure modes effects analysis (FMEA)
- ► Focused training
- ► Regular (weekly) M4M project team meeting
- ► Subcontract support
- ► Management championing
- ► Project management and schedule
- ► Software modifications to support business processes
- ► Walk before you jog, job before you run approach

Lessons Learned

► 'Buy' patience and understanding with stakeholders
► Foster organization ownership
► Excitement breeds excitement, success breeds more success'
► Build on previous successes - crawl – walk – jog – run
► Help organizations become self-reliant and sustainable early and quickly
► Dry runs flush out issue with forms and functionality – earlier the better – also builds confidence
► Be ready to respond quickly – quicker builds confidence
► Involve the right people
► 'Trust then verify'

Lessons Learned

► Encountering and overcoming obstacles is the norm – be ready and adaptable

► Involve support organizations early

► Weekly reporting fosters responsibility and accountability

► Have subcontractors provide continuous support during implementation

► Be ready for last minute excuses and naysayers

► Communication expectations repeatedly

► Transfer ownership to implementing organizations

► Embed implementation support in organizations

► Project Manager to manage preparation and implementation as a project

► Recognize personnel and accomplishments along the way

► Stay the course!

Future State

► Work is requested, work planned, work executed, and WPs closed electronically (start-to-finish)
► WP closure is performed automatically when work is completed
► Forms, permits, checklists are all completed electronically at any location
► Data is captured, reported, updated, and trended electronically in real-time
► Conditions assessment can be performed in the field
► Skills and training are verified in the field (STAR Integration) in M4M
► Activity-level hazard analysis available in M4M

'Start by changing what people do rather than how they think.'
John Schook

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