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Mobile Work Force Advances Get Work Done

Labor cost is typically the second-largest cost behind wholesale power for distribution utilities. Unlike wholesale power, however, labor is the most controllable cost. Thin margins common in many utilities mean that even a small improvement in work force costs can have a huge impact. Through work flow process improvements, a utility easily can cut labor costs while improving time management with its mobile work force.

MOBILITY CAN MEAN PRODUCTIVITY

Mobile workers encounter unproductive time because their jobs are physically distributed. Unproductive time includes traveling to and from work sites, getting performance instructions, obtaining the right equipment and materials for the job, and documenting work performed for plant records and timesheets. These steps steal from each worker's wrench-time potential. Reducing or eliminating these stealers is key to

increasing work completed by the existing work force at a lower cost. Process improvements, mobile software toolkits and tool selection can help reduce time required to complete each step.

- Process improvement: One simple approach is to identify each unproductive step field-workers perform and measure time spent on it. After identifying possible task-eliminating solutions and estimating the cost to implement, one can determine if implementing each possible solution is worth the cost to do so. Measuring unproductive time accurately can be difficult, therefore, supervisors should ask employees how much time they spend on the tasks. Lack of perfect measurement data should not become a barrier to improvement.
- Tool selection: A single-purpose solution generally results in quicker deployments and lower up-front costs. This approach,

however, loses its cost-effectiveness as more software solutions for improving fieldwork tasks are added. When a utility sees it has multiple mobile work tasks—or if it can foresee adding more work tasks—then a more robust, configurable and flexible system becomes more cost-effective. By choosing a mobile work management solution with a foundation upon which all specialized mobile applications are based, a utility can deploy software tools that are specific and right-sized for the task, still have a common feel and are compatible with all specialized mobile applications its work force uses.

- Mobile software toolkits: Within the past decade, an explosion in field computer use has occurred. Off-the-shelf laptops, hand-held computers, pen-tablets, cell phones, GPS navigators and in-vehicle computers are widely used and field-workers no

longer find it more awkward to use computers and software than the tools on their belts. Fieldwork performed by utility personnel varies. Some is short-cycle, some is long-cycle, some is urgent, some is planned, some requires a lot of data collection and reporting, some doesn't and some involves complicated work flow rules, constraints and job-to-job dependencies and other work requires only simple tasks. Choosing the right set of mobile work force management tools depends on the job requirements. The right tools can keep the job running smoothly.

CASE STUDY: SCHEDULING SOFTWARE

One of the quickest ways to reduce unproductive time is to reduce windshield time—a process improvement. Instead of being reactive to work requests on a first-come, first-served basis, planning a route based on a set of queued work requests can cut costs. Scheduling software can provide the assigning staff with a broader view of the queued work and possible crews that can perform that work. The software can narrow assignment choices to the best options based on the appropriate crew's location and drive plan, skills, equipment on hand, personnel availability and other constraints.

Lake Country Power in northern Minnesota implemented a scheduling solution in 2007. Because of its

vast territory and remote customers, payback has been tremendous. It has reduced windshield time for all crews and increased their wrench time. Jobs are completed sooner and the work force completes more work in the same amount of time. Optimized routing reduces vehicle drive time, resulting in less fuel use and vehicle wear and tear, which delays capital expenditures.

Lake Country is adding more job types and personnel. Because it has a good baseline of work performance statistics, it easily and accurately can measure the effect of ongoing improvements.

CASE STUDY: PLATFORM APPROACH

WIN Energy R.E.M.C. in Indiana took the platform approach in the early 2000s when examining tool selection options. With a single mobile software solution, it performed a GPS-based field inventory of its entire distribution network, including gathering detailed data at the construction-unit level and automating its design and as-built process. With only a handful of field inventory personnel working on the project in noncontinuous blocks, the field inventory took nearly three years. During this time, WIN Energy made changes to the system because of ongoing construction.

Using the same software platform for both processes allowed the cooperative to save money when implementing the two systems. In addition, system changes were electronically tracked to the same construction unit level. Once the field inventory was complete, electronic as-built jobs were posted to the field-collected facility database. This brought the facility management

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database up-to-date, including all changes during the three-year field-collection period.

Although field collection is complete, WIN Energy uses the same electronic design and as-built process to accurately maintain facility records as part of its normal work flow process. The GIS system is based on these automatically maintained records, which feed an accurate model to the engineering analysis and outage management systems. Maintaining this data is essential because it's shared with many other systems, said Greg Wolven, director of engineering at WIN Energy.

“The cost savings for a project like this are hard to measure,” Wolven said. “The reason being, once this database and its associated processes are established, it affects inventory and material, CPR records, job estimation, construction

standardization, staker time, GIS mapping creation and updating, engineering analysis modeling and OMS, to name some of the processes. Having solid existing data helps in construction work plans, staking and CPR correction.”

CASE STUDY: DEPLOYING THE SMART GRID

Deploying smart grid components is an area where technology can help utilities do more with the existing mobile work force. A member-owned cooperative headquartered in Georgia recently implemented a mobile software toolkit to help it deploy its metering infrastructure.

By automating this process, the co-op can collect more detailed information, including a GPS reading, as well as before and after digital photographs at each meter, which will protect the utility in the event of billing disputes. An automated system also will reduce the potential for errors, which could require additional field visits to resolve, by incorporating barcode scanners and the ability to immediately cross-reference meter information. The mobile software tool will allow the utility to complete its rollout on an aggressive schedule without bringing in additional staff.

The right tool can make any job easier, quicker and less expensive.

Mobile software solutions are well-accepted by today's mobile work force and have allowed field-workers to work more efficiently, translating to more work completed for less money. From work flow management to field engineering, small-point solutions for single-purpose deployments, as well as larger, more comprehensive solutions capable of supporting all mobile work processes exist in the marketplace. Mobile software solutions for a utility's mobile work force can pay dividends when chosen wisely. ●

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