

THE ULTIMATE GUIDE

Digital Transformation for Utilities Organizations

Why digitizing your operation matters
and what it means for assets, workforce,
and compliance

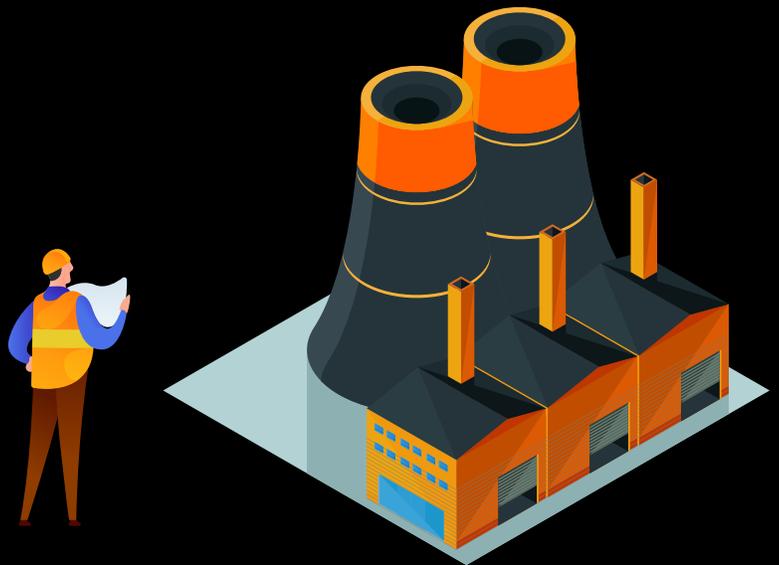


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For companies in asset-intensive and engineering industries, the game is often won or lost at the point of performance – in the last mile of operations, where up-time and reliability are driven both by asset integrity and the efficiency of the crew that responds to service requests and performs maintenance.

There is a disconnect between the field and the office, even in the best-run businesses. This disconnect is driven primarily by the means by which the two are connected – ranging from old-fashioned, paper or spreadsheet-based documentation to even two-way radio reporting methods followed by manual data entry or data stored in multiple systems – all of which impede the free flow of information. Businesses (and their systems) need a transparent, real-time view of their operations, and they need to be able to glean actionable insights from that picture to deploy their crew efficiently to optimize asset integrity and stay compliant. And the field workers need access to real-time information with drill-down capabilities.

This is the last mile disconnect – where the automated back-office and the field crew equipped with all the latest tools are out-of-sync.

This disconnect results in constant scheduling and rescheduling of resources, equipment downtime while awaiting parts, non-compliant operations, and audits that need many days of work to simply compile reports. And there are problems that are not evident, but have a high impact – for instance, “how many times did part X fail within 3 months” or an even simpler question of “which of these parts are under warranty vs not” are questions that need immediate answers both in the office and in the field.

Mobile for your field workforce. Now.

Why does it seem that consumer technology is better, faster to learn, and improves at a far faster speed than business technology?

Improvements (enterprise applications call them “upgrades”) are continuous - your apps on your cell phone update themselves seamlessly, and the new functionality rolled out is often a generational leap.

Yet improvements to business applications seem to take forever, and usually come with an implementation or learning cost. User focus is the difference.

Consumer applications have always focused on the user experience. Back-end integration and data manipulation are all done in the background and have no impact on the user. Business applications, on the other hand, have traditionally focused on the back office and then extended out to the user, resulting in decidedly non-user-friendly experiences.

All of that is changing now. A new generation of enterprise mobile apps is redefining how business applications can be rolled out. They bring the best of cloud-mobile technology that has been so effective for consumers in the business world. Rollouts happen now within weeks; user feedback, changes to configuration, updates take hours.



Focus on the user;
don't let outdated
ideas slow you down;
rollout in weeks.

➤ Mobile for your field workforce. Now.

How do you provide ready business to field integration for your mobile field workforce?



Traditional Technology

The traditional way of implementing would be to wait until the incumbent enterprise vendor provides a field workforce module that would need to go through capital acquisition. A team would be put together to implement (often at a cost of 3-6 times the purchase cost of the application). Processes get redesigned and changed to fit the canned solution, and field workers would be taught new ways of doing their work. At irregular and sometimes multi-annual intervals, there will be revisions, retraining, and improvements.

Worker-focused Technology

A field worker's focus would look like consumer technology. An enterprise mobile app that runs on any smartphone or tablet can be downloaded. Configuration of existing forms, data names, options, etc. take place in the cloud within days. The user interface is simple and intuitive – change management and user training are far easier. Back-office work in the cloud ensures that it integrates well where it must, but the key is to make it simple for the user.

The worker-focused technology method not only shaves months of any implementation, but it also allows for businesses to be agile and able to take immediate advantage of improving technologies. Improvements in phones, including voice recognition, bar code reading, object identification, OCR, cameras, etc. can immediately be used.

Reviewing work orders and service orders on the field, updating them in real-time, and working offline should all be standard features of any enterprise mobile app for your field workforce.

Businesses should consider looking at the galloping speed of advances in consumer technology and jump aboard to enjoy rapid improvements. Utilities, transportation agencies, and construction companies see particular value in mobile apps that are easy to use for their field workers. Connixt's cloud-mobile suite – iMarq – is focused on the end user, specifically for these industries, and is geared to rapid implementation.

4 Ways Mobile Technology Helps Utilities During Extreme Weather

There are many reasons to look at cloud-mobile solutions to manage extreme weather conditions and emergencies: easy provisioning, persistence, safe and secure data in the cloud, and the use of those cell-towers which are usually the only means to communicate during emergencies + the ability to work offline. Yet, the biggest reasons utilities use mobile on the field are non-technical – they are always available, intuitive and actually make life on the field easier for your crew, while substantially enhancing the value delivered to your customers.

1 Digitize inspections and work orders

Mobile apps like iMarq replace much of the paper-work and manual processing related to inspections, maintenance and related operations. Work orders, inspection checklists, facilities and station information, assignments by employee, warranty terms and conditions are all digitized and available on any standard smartphone or tablet. iMarq's ready integration with existing systems ensures that all relevant information is available real-time on the field. More importantly, any updates they make are instantly captured and automatically entered into back-end systems.

2 Incident reporting for first responders

Providing first responders with mobile solutions like iMarq – specifically configured for incident reporting – instantly provides them a convenient and fast way to coordinate with the utility when responding to incidents on the field. Avoiding inherent problems caused by missed phone calls, working through dispatchers or other third parties, iMarq now ensures that geo-tagged information from the first responder is immediately available to the utility's incident center.

3 Damage appraisal

Field teams, mutual assistance and even members of public serve armed with iMarq can now capture geo-tagged pictures and descriptions of damage from the field. These are available real-time to the incident command center for immediate review and action.

4 Mutual assistance, volunteers and more

Taking advantage of iMarq's self-service provisioning capability, iMarq is the system of management and record for crews providing assistance. The crew can be onboarded on the field without loading the utility's back-end system, with appropriate time and geo-location validity. Once on-boarded, the mutual assistance crew can now create (and fulfill) ad hoc jobs when necessary. The utility can track the location of each newly onboarded worker, dispatch work orders (from its outage management system or dispatch center), provide safety information and confirm tailboards, and provide near real-time situational awareness to the Incident Command Center. Additionally, iMarq serves as a record of time and people working.

Utilities Industry Use Cases



iMarq provides quick and easy automation of processes, linking the field to the home office. Paper forms are quickly replaced, processes are improved with little effort.

For the fieldworker, iMarq eliminates paper and allows usage of standard iOS and Android devices to dispatch, record inspection results and other inputs, allow check-in / check-out, create additional orders, and enhance communication with the home office. Offline capabilities ensure consistent use of iMarq at any location.

Field Management

Digitize Inspections, Maintenance, Preventive Maintenance Program, and Work Orders

iMarq replaces much of the work related to inspections, maintenance, and related operations, which has been paper based. It can be tied into an existing work management system. Forms are eliminated, as iMarq handles the mobility. Workers see their workload on their mobile devices. They record their work activities on these devices, taking advantage of the pictures, bar code reading, text to speech transcription, and other capabilities of the device. Work can be completed and recorded in the offline mode in the event of connectivity issues. The home office will be updated automatically whenever the device is in communication.

Managing Contract Crews

This use case involves using iMarq for contract crews. This provides substantial control and information while avoiding the training cost and license costs of setting the temporary contractors up in the utility's work management system. Additionally, the contract crews are kept separate from the employee network. The provisioning, set-up, IT requirements, and training on iMarq is much simpler and more effective. iMarq's baked-in processes provide hours tracking, retention of data, and near real time managing and oversight.

Work Management

iMarq serves as a mobile enabled complete work management system for small utilities or small departments. The central office now has situational awareness, time is tracked, and field workers and the small central office have near real time communication.

➤ Utilities Industry Use Cases

Inspection Management

Safety Inspection System

This configuration of iMarq simplifies the periodic safety inspection process. Things that require a periodic inspection (like vehicles, truck equipment, personal tools, winches, first aid kits, etc.) are set up so that the person responsible to inspect is reminded to do so on the required (weekly, monthly, semi-annually) basis. The inspection is completed on the personal device. If the inspection is not completed on time, an expedited system offers reminders and escalates the delay. If a line item fails, an order to fix it is created (and expedited until completed). Reports are created to show a) results of inspections and b) timeliness and status of inspectors.

Utility job safety briefing / Daily check-list

In this case, iMarq supplements the existing workforce management system for improving safety. iMarq automates the relevant form and process required for each job. Workers are given a tailgate briefing, and also need to identify and record safety issues related to the job. The nearest emergency facility, hazards, and mitigation actions are identified and recorded. Compliance with personal protective equipment requirements is confirmed. Isolation and control of energy sources are observed, and special support needs and precautions noted. With digital signatures, iMarq confirms and records that field members have reviewed all of the above.

Substation (or another field asset) Inspection

There are various permutations of this case; in general, it is the translation of a paper process of providing, recording, and analyzing inspections of substations (or, in other cases, other defined equipment maintained by a group). iMarq allows a very quick migration from written forms to mobile devices. Technicians are able to use the tablet or smartphone to update visual inspection, test results, record sound, take pictures, and provide other information. Any inspection “fails” can be configured to automatically trigger a Work / Service Order for fix and further tracking.

Construction Inspection

In this use case, iMarq replaces paper and provides better control than was previously available to manage the work done by contractors in a construction project. By having the contractors use iMarq, the utility contracting the construction makes sure that the contractors go through the tailboard/safety meeting, and provide reports (including photographs and signatures from the contractors). Work and progress are available to the utility headquarters, including time and geospatially stamped pictures. Follow up inspections by utility inspectors are facilitated. Job on/ job off provides a record of time spent against specific jobs. End-of-day mandatory reports can also be submitted.



➤ Utilities Industry Use Cases

Power Plant Inspection

In this case, iMarq again provides for a move from paper forms to digital integrated activities. The field worker provides information and readings on scheduled rounds via the handheld device. When the device connects to the internet, the results are automatically recorded in iMarq's cloud. Analytics are used against results to look for trends and warnings, to provide preventative actions. Learning from the analytics, triggers are created in iMarq that create work orders to take action. These orders are managed and tracked through iMarq.

Vault Inspections

iMarq is used to control the inspection cycle for vaults. While the device is usually in offline mode while in any individual vault, communication is quickly received once above ground. iMarq is used to track all variant conditions until completed.

Transformer Oil Sample Controls

iMarq allows the utility to automate and strengthen oil sample management. iMarq creates a very tight chain of custody. Starting with barcode generation in the field, iMarq tracks control (knowing who has it at any time, showing who collects samples and what happens to them, allowing split, receive and relinquish) all the way to testing and archiving. This keeps the sample under control and provides an ongoing track of the results.



Public Safety / Appraisal or Status Notification

Utility – Public Safety Notification

iMarq is provided to the first responders in the Utility's area. With this available, first responders identifying an electrical incident now have a convenient and fast way to coordinate with the electric utility. Avoiding the historical missed phone calls, working through dispatchers or other third parties, with inherent problems in relaying timely messages and identifying the exact location, the information from the first responder is now immediately available to the utility's incident center – the first responder, with almost no training, can take a picture, briefly describe the scene, and advise if they will wait for the utility to respond – along with a geotag of the incident location. Information between the utility and first responder is kept current, and direct communication is facilitated by iMarq.

➤ Utilities Industry Use Cases



Damage Appraisal

Field users authorized by the utility can fill out a mobile device form (on iMarq) showing damage. Pictures and descriptions will be recorded. The reports are shown on a map at the utility home office, allowing a geospatial review of where damage reports are. By clicking the review on the map, the home office can see the description and pictures of the damaged assets.

Public Utility Trouble System

iMarq is made available for the public to identify line down, broken street lights, dangerous conditions, power off or flickering conditions, and other issues on their own device. This allows immediate feedback to the public, as the utility responds via iMarq with the status (including truck location) and confirms completion. To ease implementation, the utility guides consumers looking on their website to find how to report issues by downloading and using iMarq. As a side benefit, calls to and from the call center are reduced.

Contractor Management

Utility Mutual Assistance

Taking advantage of iMarq's self-provisioning capability, iMarq is the system of management and record for crews providing assistance. iMarq manages the work. The mutual assistance crew can create (and fulfill) ad hoc jobs when necessary. The utility can dispatch work orders (from its outage management system or dispatch center), provides safety information and confirms tailboards, and provides near real time situational awareness to the Incident Command Center of the utility. Additionally, it serves as a record of time and people working. With the self-provisioning inherent in iMarq allowing the mutual assistance crew to be quickly integrated into the recovery efforts, iMarq is the crucial component of integration and communication between the contract crews and the utility.

Vegetation Management

As third-party employees are used, iMarq provides superior information to verify time and work performed. Work progress and completion are tracked, and pictures of completed areas are maintained.

Automate Non-Core Processes

Home Efficiency Inspections

The call center enters work orders for inspection into iMarq. The utility then assigns these to contractors. The contractors record the inspection using iMarq, and collect the customer signature. The utility tracks additional work through the process via iMarq, and uses reports from iMarq for payment.

➤ Utilities Industry Use Cases

Tools location / check-in-check-out and staging

iMarq is used as the system of record for the check-in / check-out of high valued tools. Additionally, iMarq also controls the re-certification process and record keeping; raising work orders to recertify when conditions (elapsed time, number of uses) are met, and confirming that final testing is completed.

Storm Staging

The use case allows for staging of inventory in anticipation of a weather event. Recognizing that many inventory control systems do not lend themselves to secondary warehouses nor to non-company (mutual assistance) check-in /check-out of inventory, iMarq is used to gain control over this process.

Executive Complaints Management

When complaints are elevated to the level they are “executive complaints”, they are entered into iMarq. iMarq serves as the complete tracking system for the complaint. It records inspections, work orders, customer contact, and final disposition/resolution.

Safety

iMarq allows for the dissemination of information, updating the field with safety information. It records and documents that safety meetings and ‘tailboards’ are held. Additionally, it is available to every company member. They are encouraged to report ANY safety concerns, with the analysis and disposition of the concern tracked via iMarq.

Daily Review

Daily truck inspection is recorded. Triggers are applied when certain criteria are met. Work orders are created and tracked for truck safety or maintenance issues.

Security Light Management

Where the standard system does not capture enough information, when iMarq is used to track safety light installation and trouble calls, the status is tracked and updated. Customer signatures are captured for installation and repair.

Industrial Meter Reading

iMarq provides for the reading of non-connected industrial meters.

SUMMARY

iMarq’s capabilities allow: Very, very quick implementation and change Effective and inexpensive use of modern smart devices (smartphones and tablets) and associated software. A cloud component that provides key basic processes (time keeping, order creation and management, time keeping, dispatching, field visibility, sample control, and others.) The capability to allow views and triggers personalized for the utility, on top of the standard capabilities built into iMarq. Provision of data for analytics. These capabilities offer a utility the opportunity to eliminate field paperwork, and quickly improve existing processes or work sequences with the assistance of iMarq.

Digital Transformation for Utilities



Connixt's cloud-based mobile suite is the fastest means for utilities to automate their field management processes with their field crew, contractors, and temp workers for day-to-day operations as well as during disasters.

When would I use iMarq?

Field inspection, asset maintenance, incident reporting, damage assessment and restoration – field inspection (forms, checklists), status updates, job-tracking, and time keeping from the field, with geo-tagging and time/date stamp, fleet inspection, maintenance and reporting.

Impacts of digitizing:

- Predominantly paper-driven processes – paper documents passed around, filled on field, data entered in office → overtime, inefficient, over-worked, inaccuracies etc.
- Multiple backend systems – not integrated with one another and with the field
- Not compliant since information is not accurate, outdated
- During times of disaster, paper or two-way radio processes are particularly inefficient and can even be life-threatening for crew and for customers

Questions to ask yourself:

- Are all your processes paper-driven?
- Do you use mobile devices like smartphones or tablets to make it easier for your workforce?
- How do you handle inspections of assets (e.g. substations, booster stations in case of water utilities)
 - If you are filling in forms on the field, and then entering data, Connixt can help you
- How do you handle damage assessment or prepare for natural disasters like hurricanes?
 - Can you quickly deploy for first responders?
- In the case of water utilities:
 - Chain of custody for water samples
 - Booster station inspections

➤ Digital Transformation for Utilities

How Connixt can help:

- Cloud-based pre-built mobile solution suite that instantly connects your field workers, contractors, even temp workers and assets
- Your forms and processes - set up in 48 hours or less
- No software or hardware to buy
- Supports offline mode (where there is no connectivity on the field)
- Works with any mobile device (iOS or Android/smartphone or tablet)
- Tried and tested with some of the largest utilities in the country
- Integrates with your existing back-end systems
- If you have no back-end systems, you can manage your crew and assets in the Connixt cloud

What can we do with iMarq?

- Inspections of assets, facilities, and equipment e.g. substations, booster stations inspections, etc.
- Manage Work Orders, asset/maintenance history
- Condition assessment, nameplate information capture, and verification
- Create service requests from the field
- Health monitoring of assets through direct integration with assets
- Generate mandatory / compliance reports instantly
- Geo-fencing, geo-tagging, auto-time stamp
- Workflow for approvals and scheduling from the field
- Condition Based Maintenance – integrating with sensors on equipment
- Damage assessment – the fastest means to onboard temp workers, contractors, volunteers, and mutual assistance staff in times of emergencies
- Analytics and intelligence in the field

SUMMARY

We can connect directly with your ERP or EAM system if required. Alternately we can manage your entire business process and keep track of assets, work completed, etc. in the cloud.

FOR LARGE UTILITIES:

iMarq integrates with your back-end systems

FOR SMALL/MID-SIZE UTILITIES:

iMarq can integrate with your existing systems (if available) or you don't need any – you can manage everything from the cloud



Utilities Customer Testimonials

Black River and MultiSpeak are customers.

Black River Electric Cooperative Automates Field Work

Black River maintains 4,000 miles of land for non-pay disconnects, and they were looking for a way to better manage that process. Employees in the field would visit the site, and then call in over the radio with status reports. After Black River implemented iMarq from Connixt, employees were able to enter the information into the mobile app, where it was then directed to the dispatcher for system updates. The process was significantly reduced, and the employees adopted it quickly, knowing it would increase their productivity in the field. Black River plans to use iMarq for its next project: changing out 32,000 meters – all paperless – in the next 18 months.



James Moyer
Engineering Manager

Connixt Supports MultiSpeak® Interoperability Standard

Municipal and co-op utilities looking to digitize and mobile enable their field crew are the biggest beneficiaries of Connixt's support for MultiSpeak interoperability standards. Connixt applications are used during emergencies, extreme weather and daily operations. MultiSpeak allows a low cost and a quick implementation of automated connection to existing systems. As such, busy utilities can have the benefits of Connixt with minimal effort, time, and costs. Connixt is an integral partner in MultiSpeak's new Ecosystem of Connectivity Solutions serving over 800 electric utilities in over 21 countries worldwide.



In Summary

Seamless connectivity between the back-office and the crew – irrespective of the type of back-office systems in place – can be achieved more easily than ever before using cloud-mobile technology. Connixt digitizes and automates maintenance, inspection, inventorying, and condition assessment processes for large and small transportation agencies and utility companies.

Connixt serves asset operators, manufacturers, and service servicing firms across industries like transportation, energy & utilities, construction, and manufacturing. Combining advanced analytics and real-time reporting with powerful data capture tools designed specifically for use in the field, Connixt helps customers to map, manage and optimize the impact of assets, fieldwork, and crews across every inch of the last mile.

With Connixt, everything is digitized: from inspections, service campaigns, and maintenance, to inventory management and planning. We cut straight through old-world systems and digitize processes to help you to run a slicker, more seamless operation where the field and the office come together as one.

Replacing analog workflow tools with an easy-to-use, app-based solution that works across smartphone devices and tablets, the platform is simple by design. It needs no new hardware or software to implement and can be accessed standalone from the cloud, or integrated with pre-existing EAM platforms. Better yet, you can have it up and running in weeks, with near-100% adoption.



Connixt's cloud-native, mobile-native suite is specifically focused on digital transformation for the last mile.



Connixt iMarq can digitize your forms as they are currently used at your agency or you can choose a set from our forms library. Your users – whether employees or contractors – just download the app to capture asset information, i.e. name-plate information, location (assets are automatically geo-tagged), barcode creation, condition, and more. You can add photographs, comments, and audio recordings (for that equipment hum that seems out of line). It's all updated automatically into your back-end system(s).



Doing it right the first time can get it done fast, efficiently, and reap ongoing benefits.

You can set up random asset selection for inspections at any frequency. You can even assign specific users that need to be given automatic, recurring work orders for ongoing maintenance.

With all data now available electronically, formatted reports can be generated, data can be analyzed for patterns and intelligence, and, most importantly, this doesn't have to be a one-off compliance exercise. You can actually derive value from it by streamlining operations, maintenance, and reporting across the agency.



Find out more about how Connixt customers show 20% labor-hour gains while waiting on their EAM upgrades/migration and contact us today.

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Smarter **Simpler** Faster