



An Essential Guide to Field Workforce Management for Utilities

Practical strategies for delivering reliable, affordable service in an era of shrinking resources and rising expectations.





The State of Utility Field Operations Today

From the major blackout across Spain and Portugal, described as ‘the “most severe” in Europe in the last 20 years’ to the powerful 2026 Nor’easter that disrupted transport and left hundreds of thousands without power across the U.S. Northeast, disruption in utilities is becoming a regular operational reality.

At the same time, utilities face a balancing act: meeting growing demand and modernizing the grid while maintaining affordability.

With increasing work volume and operational complexity, persistent workforce shortages and skill gaps are limiting utilities’ ability to respond. Combined with aging infrastructure, sustainability pressures, and rising scrutiny from regulators, customers, and the media, this creates a challenge to optimize field operations.

The impact is measurable: longer response times, missed reliability targets, rising costs, overwhelmed crews, and increasing penalties tied to restoration and reliability metrics.

Traditional operating models built on manual coordination, static planning, and fragmented systems cannot scale to meet these pressures.

This guide helps utility leaders assess current aspects of field operations, identify capability gaps, and take practical steps to strengthen workforce performance.

The challenges reshaping field workforce operations in modern utilities

Challenge 1:

The Workforce Paradox: Doing More with Less

52% of organizations expect up to 25% of their frontline workforce to retire within five years, taking critical knowledge with them. At the same time, competition for technical talent intensifies resource constraints, with **62% of leaders** reporting hiring as challenging or extremely challenging.

But the workforce challenge is not simply a headcount issue. It is also how effectively existing capacity is planned, deployed, and supported. Significant technician time is lost due to operational friction: static planning that breaks under disruption, manual coordination, travel inefficiency, knowledge silos, repeat visits, and administrative burden. Reducing this friction is one of the fastest ways utilities can improve reliability while controlling operational costs.

Reframing the Workforce Challenge

Many utilities respond to capacity pressure by trying to hire more people, increase overtime, or hire contractors. While understandable, these responses address

symptoms rather than root causes. The real opportunity is understanding where workforce capacity goes and how modern field management systems can optimize it.

Key questions to guide your assessment:

Question

What It Unlocks

Where is technician time actually going? How much capacity are we losing to travel, waiting, rework, admin and avoidable truck rolls?

Quantifies the opportunity, for example, optimization can reduce travel time by 20–35%.

Which jobs require repeat visits and why?

Identifies root causes: inadequate guidance (knowledge or context missing), missing parts, skill mismatches

How can we preserve and distribute retiring expertise across the workforce?

Shifts focus from retention to knowledge capture and transfer

Can we automate routine decisions, so planners focus on exceptions?

Enables lean teams to coordinate higher volumes effectively

What coordination breakdowns drive our highest costs or longest delays?

Surfaces gaps between dispatch, inventory, scheduling, and field execution that technology can close.

Challenge 1:

Addressing these questions requires unified visibility and coordinated workflows that legacy systems and manual processes cannot provide. Until those fundamentals are met, symptom-focused responses will continue to deliver diminishing returns.

This requires combining planning, dispatch, mobility, execution, and optimization on one end-to-end platform where intelligence is embedded directly into workflows, not bolted on as a separate tool.

What the Right Field Workforce Platform Must Do:



Dynamic planning & scheduling: Ability to continuously re-balance work based on skills, location, priorities, and disruption in real time.



Intelligent dispatch & coordination: Exception-based dispatching that highlights risk and automates routine decisions, allowing lean teams to manage higher volumes.



Routing & travel optimization: Smart routing and work bundling that protect productive time, reduce duplicate site visits, minimize unnecessary truck rolls, and lower fleet fuel consumption and emissions.



Field execution & real-time support: Complete job context and fast expert remote assistance at the point of work to enable first-time resolution, even for junior technicians.



Admin, reporting & smart workflows: Same-day work closure with automated capture and guided workflows that reduce paperwork, and prevent errors and feedback delays.



Parts and inventory coordination: Ensure technicians arrive with the correct parts by aligning work orders, van stock, warehouse inventory, and supply chain availability.



Industrial AI makes these capabilities work at scale: Contextual AI guides dispatchers and technicians through complex decisions, multi-algorithm optimization balances competing workforce constraints in real time, and automated reporting eliminates administrative burden. Turning reactive responses into proactive, continuous optimization helps protect workforce capacity end to end.

IFS Field Workforce Management delivers these capabilities by combining **Field Service Management**, **Planning and Scheduling Optimization**, and **Industrial AI** – purpose-built for asset-intensive utility operations – in a unified platform. For example, leading organizations using these capabilities have achieved outcomes such as **up to 33% better technician utilization or 20-35% travel reduction**.

Challenge 2:

Increased Demand: Scaling Service Without Breaking Operations

The demand challenge is not simply volume but volatility and competing priorities. Emergency response, planned maintenance, new capital investment programs, interconnection requests, the rise of data centers, and customer commitments all put pressure on the same constrained workforce.

Legacy planning approaches and manual workflows cannot balance competing demands dynamically, forcing utilities to choose between response speed, service quality, and cost control.

Reframing the Demand Challenge

When demand increases, many utilities add workforce or defer work. Both buy short-term relief but don't address the fundamental challenge: whether the operating model can scale efficiently as complexity grows.

In addition to the workforce capacity challenge, growing demand introduces additional considerations that leaders should examine.

Key questions to guide your assessment:

Question

What It Unlocks

If work volume increased 10–20%, where would the model break and how much additional manual coordination would be required?

Quantifies capacity limits and reveals whether the current operating model scales efficiently or creates exponential coordination overhead as demand increases.

Can we model the impact of electrification programs on workforce and network capacity 12-18 months out?

Enables proactive capacity planning vs. reactive firefighting. Shifts from surprise to preparedness.

What percentage of our current backlog becomes emergency work within 6 months?

Reveals the hidden cost of deferred maintenance: backlogs don't wait, they compound.

How do we balance cost, carbon, and reliability commitments as competing priorities intensify?

Forces explicit trade-off frameworks vs. implicit, inconsistent decisions.

Challenge 2:

Increased demand cannot be met by stretching the workforce thinner. It requires coordinating work more intelligently, prioritizing dynamically, and reducing waste across the end-to-end service lifecycle to protect reliability while supporting affordability and sustainability commitments.

This calls for a solution that can balance operational demands, tactical commitments, and strategic planning horizons simultaneously, not force-fit decisions into rigid systems.

What the Right Field Workforce Platform Must Do:



Dynamic planning & scheduling: Balance capital, maintenance, and emergency work in real time as conditions change.



Multi-horizon planning: Align operational, tactical, and strategic planning horizons so utilities can coordinate day-to-day work while preparing for demand growth, capital programs, and major events.



Scenario modeling & what-if analysis: Stress-test capacity and service levels against demand growth, electrification, and major events before they happen.



Demand-aware dispatch & prioritization: Optimize work across competing objectives including reliability, operational cost and carbon impact while enabling exception-based coordination.



Unified operational visibility: Provide planners and dispatchers with a real-time view of assets, crews, work orders, and risks across the network to coordinate work more effectively.



Customer-aware appointment management: Align service commitments and regulatory targets with real operational capacity.



Industrial AI helps utilities coordinate complex decisions across the full-service lifecycle: Multi-horizon optimization balances competing objectives in real time, scenario modelling tests capacity limits before committing resources, and continuous learning improves demand forecasting and resource allocation as conditions evolve.

Platforms such as IFS Field Workforce Management combine AI-powered optimization, scenario modeling, and workforce execution capabilities on a single platform to enable this type of adaptive planning in complex utility environments.

Challenge 3:

Increased Outages: Restoring Faster in a Less Forgiving World

Extreme weather events, aging infrastructure, and increasing grid complexity are increasing outage frequency and severity. Outage resilience depends on two operational capabilities:

- **Prevention:** Converting predictive asset signals into executed preventive work before failures occur

- **Restoration:** Rapidly assessing damage, mobilizing crews, and coordinating systematic restoration across regions when major events happen.

Without these capabilities, preventable failures often become emergencies, restoration efforts turn chaotic, and SAIDI and CAIDI performance gaps widen.

Reframing the Outages Challenge

Outage resilience is often discussed in terms of infrastructure investment, but performance during major events is largely determined by operational capability.

Preventing avoidable failures and restoring service quickly requires utilities to connect asset intelligence, field coordination, and command-center visibility in real time.

Key questions to guide your assessment:

Question

What It Unlocks

What percentage of outages could be avoided through better planned and preventive maintenance execution?

Quantifies the opportunity to reduce unplanned outages through proactive maintenance execution.

How quickly can we mobilize and coordinate crews across regions during major events?

Reveals whether additional resources accelerate restoration or create bottlenecks, quantifying mobilization capability before crises hit.

Do we have real-time visibility into crew location, status, and restoration progress during major events, or are we relying on manual updates?

Enables command centers to make faster decisions based on actual field conditions, not outdated information.

How quickly can we return to normal operations after major restoration events without losing momentum or creating new backlogs?

Prevents maintenance backlogs that become future outages by enabling smooth crew transitions from emergency response to planned work.

Challenge 3:

Infrastructure investment alone won't prevent failures or accelerate restoration. Converting asset signals into preventive action and coordinating rapid response requires the right operational capability.

What the Right Field Workforce Platform Must Do:



Predictive maintenance execution: Convert asset health alerts and failure signals into scheduled work orders and execute them before disruptions occur



Emergency mobilization & crew coordination: Rapidly call out and deploy crews, adjust schedules, and coordinate restoration work across regions as outage conditions evolve



Real-time field visibility: Maintain live awareness of crew location, work progress, and resource availability during major events to enable faster command decisions.



Damage assessment & work prioritization: Capture field inspection data quickly, including drone or image-based inspections, and convert findings into prioritized work orders.



Post-event transition & recovery: Transition crews and resources smoothly from emergency response back to normal operations to avoid creating new maintenance backlogs



Industrial AI helps utilities move from reactive firefighting to proactive resilience: AI identifies which assets will fail before they disrupt service, optimizes crew deployment and work priorities during outage response, and converts field inspection photos into repair work orders automatically.

Outage resilience depends on integrating asset health intelligence with field execution - capabilities many utilities manage in separate systems. Platforms such as IFS Cloud combine enterprise asset management with field workforce management to enable this preventive-to-restoration workflow in utility environments.

Turning Insight into Action: Steps Utility Leaders Can Take Now

Workforce constraints, surging demand, and increasing outages compound each other, creating a cycle where capacity shortages delay response, deferred work becomes emergencies, and reactive firefighting consumes resources.

Breaking this cycle requires honest assessment of where capacity is being lost, clear evaluation of whether current systems can scale, and commitment to measurable improvement.

The following steps can help utility leaders turn these insights into action:

Step 1: Assess Current Workforce Capacity and Efficiency

- ✓ **Document where technician time actually goes:** If you have time tracking data, quantify productive work vs. travel, waiting, and admin. If not, track for 2-4 weeks to establish a baseline.
- ✓ **Identify critical knowledge at risk:** Interview senior technicians and supervisors to document frequently referenced knowledge, common troubleshooting patterns, and specialized skills tied to pending retirements over the next 36 months.
- ✓ **Evaluate coordination efficiency:** Track how many manual handoffs are required to assign and close a typical work order, and whether coordination overhead scales linearly or exponentially as work volume increases.

Step 2: Evaluate Technology Foundation and Future Requirements

- ✓ **Map your system architecture:** List all systems involved in the workflow from work assignment through execution to closure. Identify where “swivel chair” integration (manual data transfer) is required between disconnected systems.
- ✓ **Assess platform composability:** Evaluate whether your technology foundation supports adding new capabilities such as mapping (GIS) integration, advanced analytics, sustainability tracking, new data sources, mobile enhancements without major system overhauls or expensive custom development. Utilities face rapidly changing requirements; inflexible systems become expensive constraints.
- ✓ **Evaluate AI and intelligence integration:** Assess whether AI is embedded directly in operational workflows or exists as separate analysis tools requiring manual implementation. Generic AI tools often lack the reliability, industry context, and operational safeguards that asset-intensive utility field operations require. What’s needed is **Industrial AI** that provides trusted, explainable, and mission-critical insights, effectively guiding service crews in real time without introducing risk.
- ✓ **Assess sustainability performance:** Determine whether **sustainability performance** current systems can measure and optimize sustainability outcomes such as carbon impact alongside cost and reliability, or whether sustainability remains a disconnected reporting exercise outside day-to-day operations.

Step 3: Build a Business Case for Modernization

- **Establish baseline metrics:**

Document key service performance metrics, such as workforce utilization rates, reliability and restoration performance, average response times, operational cost per job, and other measures relevant to operational efficiency and network reliability, so improvements can be tracked credibly.



You can benchmark your first-time fix rates, resolution time, and average time between visits using this [infographic](#).

- **Identify improvement opportunities:**

Work with vendors or use tools like the [Field Service Optimization Tool](#) to estimate where measurable gains could come from, whether through better scheduling, reduced travel, faster response, improved first-time fix, stronger coordination, automation of routine tasks, or digitizing and scaling field knowledge with AI.

- **Evaluate solution trade-offs:** Assess whether potential platforms can optimize across cost, carbon, and reliability objectives simultaneously, or if they require you to make explicit trade-offs between these priorities through manual coordination.

- **Define success milestones:** Identify pilot scope (one region, one work type) to prove value before full deployment. Establish clear success criteria and plan staged rollout to demonstrate ROI incrementally. Factor in workforce training and organizational change management - technology alone doesn't drive adoption.



Learn from FortisBC's approach to technology adoption and change management in this [Future of Field Service podcast](#).

From Assessment to Action:

Effective field workforce management plays a critical role in whether utilities can deliver on reliability, affordability, and sustainability commitments. While many of the pressures facing the sector are familiar, the gap between legacy operating models and the demands of modern grid operations is widening.

This guide provides utility leaders with a practical starting point: assessment questions to identify where workforce capacity is lost, criteria for evaluating whether current systems can support future requirements, and a framework for building modernization business cases tied to measurable operational outcomes.

Utilities that act now can establish operational foundations capable of managing increasing grid complexity, demand volatility, and workforce constraints. Those that delay risk facing growing complexity with operating models and systems that were never designed to scale.

The work begins with honest assessment.
The results depend on decisive action.





IFS are the only vendor to be recognized as a 2025 Customers' Choice for Field Service Management on **Gartner® Peer Insights™ Report**.

“Working in partnership with IFS over several years has produced significant gains in utilization, efficiency and end user experience”

IT Director – Energy & Utilities

Find out more

IFS is the world's leading provider of Industrial AI for hardcore businesses that service, power and protect our planet. Our technology enables businesses which manufacture goods, maintain complex assets, and manage service-focused operations to unlock the transformative power of Industrial AI™ to enhance productivity, efficiency, and sustainability.

IFS's AI-powered platform is fully composable, designed for ultimate flexibility and adaptability to a customer's specific requirements and business evolution. IFS technology leverages AI, machine learning, real-time data and analytics to empower our customers to make informed strategic decisions and excel at their Moment of Service™.

IFS was founded in 1983 by five university friends who pitched a tent outside our first customer's site to ensure they would be available 24/7 and the needs of the customer would come first. Since then, IFS has grown into a global leader with over 7,000 employees in 80 countries. Driven by those foundational values of agility, customer-centricity, and trust, IFS is recognized worldwide for delivering value and supporting strategic transformations. We are the most recommended supplier in our sector.

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