CYIENT | Nothing Less

Are you a low performer

or a high performer in field services?

How utility companies can transform FSM with contextual intelligence



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Abstract

This paper examines the challenges utilities face in improving field service KPIs that define high performance. It explores how digitalization, contextual data, and AI/ML-driven insights help overcome operational complexity. Building on Service Council research and Cyient's enterprise data driven approach, the paper outlines best practices for integrating data from GIS, EAM, HRMS and FSM systems to enable context-aware scheduling, , compliance, and execution.

The shifting landscape of field services

The field services function in the utilities industry is facing unprecedented challenges. Distribution and business models are shifting due to rapid technological evolutions like EV adoption, data centers, intelligent grids and Prosumerism-driven solar generation. In fact, the global FSM market is forecast to more than double in the next decade, rising from approximately US$4.4 billion in 2022 to nearly US$12 billion by 2030. Planning, scheduling and forecasting are becoming AI / ML- enabled, yet the underlying data remains poorly structured and spread across siloed systems. At the same time, the industry is facing a demographic tipping point: in some markets over a quarter of utility field staff are above age 55, with large-scale retirements imminent and resurfaced skills gaps emerging, further intensifying operational pressure.

Utilities must navigate these challenges while meeting stringent regulatory expectations. Many are investing in digital and predictive technologies to optimize FSM, but only a few are translating those investments into consistently high performance. What separates them is their ability to blend human intelligence and AI to make decisions that reflect operational reality.



Barriers to high-performing field operations

1. What defines a high performer in field services?

Several companies measure their field service performance through metrics linked to workforce utilization and customer satisfaction.

A comprehensive study by Service Council examined the characteristics of organizations across performance tiers and the impact of technology on those outcomes. The table below summarizes typical KPI ranges across these tiers:

Key Performance Indicator (KPI) / Metric	Low Performers (Bottom 20%)	Average Performers (Middle 50%)	High Performers (Top 20%)
First-Time Fix Rate (FTFR – Scale of 0-100%)	52%	82%	92%
Mean-Time-To-Repair (MTTR - Break/Fix – Qty of Hours)	20 hours	8.25 hours	2.75 hours
Workforce Utilization (Jobs/Day/Tech)	1.6 jobs/day/tech	3.1 jobs/day/tech	6.3 jobs/day/tech
Service Profit Margin (as a % of Company Revenue)	9%	31%	43%
Contract Attach Rate (Scale of 0-100%)	11%	39%	76%
Service Part Fill Rate (Scale of 0-100%)	27%	76%	93%
Service Level Agreement (Scale of 0-100%)	67%	82%	96%
Customer Satisfaction (CSAT – Scale of 0-100%)	64%	84%	96%
Customer Effort Score (CES – Scale of 1-7)	4	5	6
Employee Net-Promoter Score (eNPS – Scale of 1-10)	5	8	9
Employee Retention (Scale of 0-100%)	69%	85%	92%

Summary Findings: KPIs & Metrics servicecouncil™

Reference:
https://servicecouncil.com/wp-content/uploads/2022/02/2022-SC_Summary-Findings_KPI-Metrics_February-2022_FINAL.pdf

This survey highlights some of the best practices adopted by the high performing organizations:



Use digital technology across all aspects of field service management.



Monitor KPIs in real time through dashboards.



Align organizational stakeholders, from field engineers to executives—around service effectiveness

2. How to use technology to reach high performance levels?

To achieve high performance, utilities must move beyond basic digitization and embrace predictive, context-aware technologies, that blend human expertise with AI-driven intelligence. Demand forecasting should evolve from static, historical trend analysis to AI-driven models that incorporate real-time SCADA inputs, weather patterns, and asset health. Similarly, performance analytics must progress from simple KPI dashboards to prescriptive insights and AI-based coaching, enabling continuous improvement and proactive decision-making.

The table below describes various FSM capabilities and recommendations regarding reaching high performance levels in these aspects:

FSM capability	Manual, historical trend-based	Digitized	Predictive & proactive
Demand forecasting	Manual, historical trend-based	Real-time inputs from SCADA, meters, asset data	AI/ML-driven event-aware, weather & condition sensitive
Capacity planning	Annual static plans	Dynamic planning with scenario modelling	Autonomous rebalancing based on demand shifts & outage risks
Workforce rostering	Fixed rosters, spreadsheet-driven	Centralized tools with business rules	AI-generated, adaptive, aligned with fatigue, skills & preferences
Field service scheduling	Phone/manual dispatch	Rule-based scheduling engines	AI/ML-optimized, real-time, context-aware
Enterprise mobility	Paper job cards, no real-time updates	Mobile apps with offline sync	AR/voice-guided workflows, dynamic data capture & remote assist
Performance analytics	Lagging KPIs, manual reporting	Real-time dashboards, SLA tracking	Prescriptive insights, AI-based performance coaching
Customer	Reactive, call centre-based	Appointment systems, SMS/email alerts	Real-time self-service, predictive notifications, digital twins

3. What are the challenges faced by Utilities companies in their performance journey?

Utilities face both operational and data-related challenges when attempting to improve field service performance.

Operational integration issues:

- **Failure to embed AI into workflows:** AI outputs are not integrated into technician tools or dispatch systems.
- **Lack of real-time feedback loops:** Models are not updated based on field outcomes, reducing adaptability.
- **Over-reliance on static models:** FSM environments are dynamic; static models quickly become obsolete.

Data related challenges:

- **Lack of contextual data:** AI models often fail when data lacks operational context (e.g., weather, asset condition, technician availability).
- **Poor data quality:** Incomplete, outdated, or inconsistent data leads to unreliable predictions and recommendations.
- **Siloed data systems:** Utilities often store data across disconnected platforms, making it hard to build unified models.
- **Limited historical data:** FSM tasks require long-term asset performance data, which may be missing or inaccessible.
- **Inadequate labeling:** Without proper tagging of service events, failure modes, and technician actions, supervised learning becomes ineffective.

Field operations rely heavily on situational awareness such as location, weather, asset condition, technician skill, and job urgency all influence the right action. AI systems perform best when paired with human intelligence and enriched with contextual data, allowing decisions to reflect both real-world nuance and predictive insight.



A unified approach to modern field services

To maximize from the value of digital tools and AI algorithms, utilities must identify and integrate data sources that provide contextual intelligence. Systems such as GIS, EAM, CRM, SCADA and FSM contain critical field information, that, when unified, enables smarter, real-time decisions. Modern data platforms make it possible to map and harmonize these inputs to support predictive and prescriptive models.

Cyient's human + AI lens: Bringing context to life through practical field scenarios

1. Asset condition data (EAM) vs. work order history (FSM)

Usually, asset condition data is stored in enterprise asset management systems like IBM Maximo, SAP PM etc, whereas work order details are stored in field management systems like Salesforce FSM or ServiceNOW FSM. While using the data stored in field service systems for predicting asset failure, the models use historical work order details but miss inputs from actual repair history. This lack of feedback loops from real-world interventions reduces the accuracy of the failure prediction models.

Hence, it becomes important to consider the asset condition data as an addition input while predicting failures through AI models by contextually incorporating this data in the models.

2. Geospatial risk data (GIS) vs. dispatch rules (FSM)

When vegetation risk or flood zones is not factored into job prioritization, ML models may optimize for distance rather than safety . Integrating GIS-based risk zones into FSM workflows enables more accurate and responsible dispatching..

3. Sensor/SCADA alerts (OT systems) vs. work order creation (FSM)

Sensor alerts from OT systems often detect malfunctions in the systems. These alerts are passed on to service teams to perform maintenance activities. This makes the system reactive rather than proactive. By analysing the trend in the sensor values, if the maintenance needs are triggered before the actual breakdown happens, it is possible to address the issue before a costly shut down event. This required data from OT systems running through an algorithm to detect patterns of possible failure and an integration with FSM systems to automatically generate maintenance tickets and to provide enough details on the ticket to address the issue.

4. Customer complaints (CRM) vs. field visit logs (FSM)

A customer may report recurring issues, but FSM logs do not reflect the complete service history. Getting additional context through CRM systems on the recurring issues will help prioritize jobs based on customer impact or sentiment. This helps in better CX outcomes.

5. Training & certification records (HRMS) vs. job assignment (FSM)

When training, certification, skill data is provided contextually while assigning service tickets, FSM systems can ensure that the right technician is addressing the jobs. In the absence of this data, AI based models may recommend non-compliant or unsafe assignments.

Hence, it is important to bring data that is residing in various systems to build better AI/ML models with appropriate context so that field service outcomes are continuously improved through learning.

The measurable gains of context-driven FSM

- **Improved SLA compliance:** Real-time scheduling and contextual prioritization reduce delays and missed appointments.
- **Enhanced safety and reliability:** Risk-aware dispatching enables earlier detection and proactive resolution of critical issues.
- **Better resource utilization:** AI-driven rostering matches technician skills with job requirements more effectively.
- **Higher customer satisfaction:** Integrated CRM-FSM data allows for personalized service and quicker resolution.
- **Audit readiness and compliance:** Clean data structures and standardized metadata simplify regulatory reporting.



FSM decisions are situational:

Context matters—location, weather, technician skill, and urgency all influence the right action.



AI needs feedback loops:

Without real-time field data, models become static and obsolete.



Data integration is non-negotiable:

Siloed systems hinder predictive capabilities and operational efficiency.



The Cyient thought board

1 **What defines a high performer in field services?**

Organizations that use contextual data, predictive analytics and integrated systems to drive KPIs usually perform better than those that don't use these techniques.

2 **What are the common barriers to improving field service performance?**

Poor data quality, siloed systems, lack of real-time feedback and static AI models that don't use contextual data.

3 **How does Cyient help in improving field service outcomes?**

By identifying the need for contextual data, and by integrating systems like GIS, EAM, FSM, SCADA and HRMS to enable smart field operations.

4 **Why is contextual data important?**

By supporting adoptive learning, it enables prioritization and improves model accuracy.

5 **What are the business outcomes?**

Better SLA compliance, safer operations, improved customer experience and optimized resource use.



Closing the performance gap for good

Achieving high performance in field services requires more than digitalization – it demands contextual intelligence. Utilities must break down data silos, embed AI into workflows and continuously adapt to real-world field conditions. By blending human expertise with artificial intelligence and integrating data across GIS, EAM, SCADA, HRMS, and FSM systems, Cyient enables utilities to elevate field performance and deliver safer, smarter, and more reliable service outcomes.

About the authors



Jonathan Vlahos
Director for FSM

Jonathan Vlahos is a Director for FSM at Cyient and is a Field Service Management expert with 20 years' experience in helping utilities and mid-market service organizations modernize their field operations through Field Service solutions and mobile workforce transformation. He advises mid-market and enterprise clients on selecting the right FSM platform, maturing asset and field processes, and implementing solutions that deliver measurable operational outcomes. These data-driven field operations improve asset reliability, reduce downtime, and deliver superior customer outcomes for his clients.



Pradeepa Shivaswamy
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Pradeepa Shivaswamy is a functional consultant with Cyient, bringing close to 30 years of experience across the entire product lifecycle - from engineering R&D and product development to manufacturing engineering and field services transformation. He specializes in enabling organizations to leverage digital technologies and AI-driven solutions for operational excellence. Pradeepa's strategic insights and hands-on approach have helped businesses streamline processes, improve service performance, and adapt to evolving industry demands.

About Cyient

Cyient is a global lifecycle engineering services company powering mission-critical industries from design to aftermarket across products, plants, and networks. With 300+ customers and 15,000+ associates across 30+ countries, we combine human expertise, deep domain knowledge, and AI to deliver intelligent engineering for every lifecycle across Aerospace and Rail, Automotive and Mobility, Connectivity, Energy, Healthcare, Mining, Utilities, and beyond.

To learn how we deliver outcomes that matter, and nothing less, visit www.cyient.com

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