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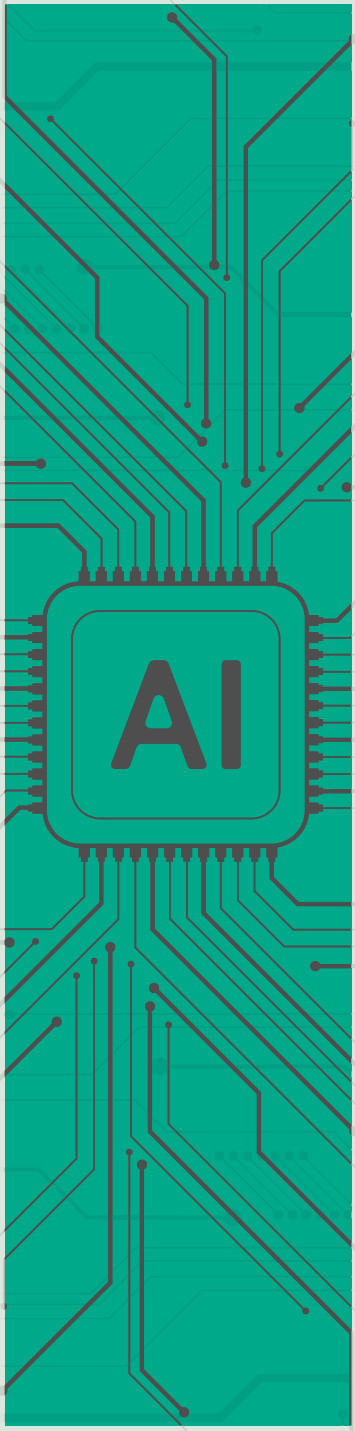

THE AI SHIFT: REINVENTING UTILITIES FIELD SERVICE FOR THE FUTURE

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The Winds of Change in Canadian Utilities

Canada's Utilities sector must modernize while maintaining service across diverse environments—from remote northern communities to urban grids. Facing decarbonization targets and aging infrastructure, the future of field service must be smarter, faster, and AI-driven. Field service and maintenance crews have long been the backbone of reliable Utilities operations in Canada. But today, the landscape is shifting at an unprecedented scale and speed, forcing Canadian Utilities to navigate, energy transition, surging customer expectations, aging infrastructure, and the growing complexities brought on by renewable energy sources and electric vehicles. This unfolds within a highly regulated environment.

The mandate is clear: do more with less. The concept of "sweating the asset"—extracting maximum value from existing resources—must now urgently extend beyond physical equipment to involve the entire organizational ecosystem, including workforce, processes, and operational models. AI emerges as the solution, revolutionizing prediction, planning, and execution of field operations to usher in new levels of efficiency, service reliability and quality.

This paper explores how the strategic partnership between Infosys and Microsoft enables Canadian Utilities to leverage cutting-edge AI solutions designed for field service optimization. We examine how this collaboration is poised to transform maintenance operations, workforce management, and customer experiences, providing enterprises in the Utilities sector with the technological foundation to navigate the changes successfully and build resilience for the challenges ahead. We begin with clarity on the challenges they must overcome.

The Core Problem: Data Disparity and the Myth of the "Golden Record"

At the heart of the Utilities sector's transformation challenge lies a foundational issue: **data disparity**. While most Utilities organizations have mastered the art of asset-level optimization or "sweating" physical assets —extending the lifespan of physical infrastructure like valves, boilers, and meters through condition-based monitoring and predictive maintenance of individual pieces of equipment—they continue to struggle with fragmented and inconsistent nature of their data that creates blind spots and inefficiencies that ripple throughout the organization.

The scale of the data challenge is immense. Utilities must manage and synthesize information from an overwhelming number of disparate sources:

- Legacy assets and unconnected devices and equipment with no digital monitoring capabilities
- Multiple ERP and CRM systems
- Physical records—paper forms, clipboards, handwritten notes
- Institutional or tribal knowledge held by long-tenured field workers, usually in their memories
- Constantly evolving manufacturer manuals and technical bulletins
- Online forums and community-driven service insights
- Real-world field observations—what technicians see, hear, smell, or feel during on-site maintenance

This "data deluge" makes it nearly impossible to form a cohesive operational picture, let alone derive predictive insights. For decades, Utilities have aspired for a "golden record"—a singular, pristine source of truth that could drive intelligent decision-making. But the reality is that this record will always remain unattainable. The sheer diversity, velocity, and format variation mean no centralized repository can realistically capture it all.

Pursuing this elusive golden record has diverted resources from more practical approaches to data utilization. Rather than continuing this futile chase, Utilities must acknowledge the inherent complexity of their data landscape and rely on AI to extract value from information without requiring clean, uniform inputs.

Today, 6.1% of Canadian businesses, including Utilities, have turned to AI for producing goods and delivering services[1]. However, when considering AI, Utilities typically gravitate toward two areas: IoT sensor deployment for monitoring equipment and corporate efficiency applications, such as automated billing or customer service chatbots. While valuable, these initial forays into AI often overlook the transformative potential of applying intelligent technologies to field service operations, which arguably presents the greatest opportunity for enhancing operational efficiencies.

1. Analysis on artificial intelligence use by businesses in Canada, second quarter of 2024

AI-Driven Transformation

This section explores how AI, when applied thoughtfully, not only makes sense of this chaos but also creates new value by transforming how field service is planned, executed, and optimized. Where can AI add value in field service management?

Taming Data Complexity

AI is the only technological tool that can process the full spectrum of enterprise, experiential, and external data to identify meaningful patterns and insights, particularly in its generative form.

The Insight Engine

AI's power lies in its ability to mine complex and distributed datasets, both structured and unstructured information, prevalent in Utilities. It connects the dots between seemingly unrelated data points to inform smarter planning, scheduling, and problem-solving in real time.

Beyond Basic Reporting

AI enables proactive and predictive capabilities unlike traditional analytics. It can support prescriptive maintenance plans, optimize field service resource allocation, and identify emerging risks before they manifest in asset failures or customer complaints.

Plugging the Knowledge Gap

As experienced technicians retire, the Utilities sector faces a significant risk of losing decades of tribal knowledge—tacit expertise that has never been formally documented. AI can help capture, codify, and retain this institutional memory, turning it into a shared asset rather than a disappearing advantage.

Even more transformational is how generative AI empowers the next generation of field service professionals. With natural language interfaces, younger technicians can now ask complex questions in plain English and receive intelligent, context-specific responses drawn from years of historical data, expert notes, and technical manuals.

In this way, AI becomes a mentor, a strategist, and a knowledge base, all in one. Simply put, it is a game-changing data mining tool —and for Utilities, it is the key to heralding a new era of agility, efficiency, and resilience.

Reshaping Field Operations

Optimization Across the Service Lifecycle

AI transforms field operations by automating tasks, optimizing workflows, and enabling predictive and prescriptive maintenance to anticipate equipment failures, minimize downtime, and extend asset lifespan.

Automating Routine Tasks and Streamlining Workflows

AI streamlines field operations by automating routine tasks, such as process inspections, defect identification, work order generation, and part pre-ordering, freeing technicians' time and improving efficiency.

Predictive and Prescriptive Maintenance

Advanced AI algorithms analyze operational data, environmental conditions, and historical performance to identify issues early. They provide actionable recommendations that balance the risk of failure, severity, resource availability, and operational priorities to optimize maintenance and minimize downtime.

Intelligent Scheduling and Resource Optimization

AI optimizes complex field workforce scheduling by matching technicians to jobs based on their skills, location, and priorities—adapting in real-time to disruptions and boosting productivity.

AI-Driven Knowledge Management

AI enhances knowledge management by improving first-time fix rates and enabling real-time support through AR, equipping technicians with the right information, reducing return visits, and accelerating service restoration.

Contributing to Sustainability Goals

AI-enhanced field service operations optimize travel, reduce site visits, and lower emissions, while extending equipment life and preventing environmental issues such as leaks, thereby advancing sustainability goals.

Enhancing Customer Experience

AI redefines customer experience by streamlining field service, reducing costs, and enabling proactive issue resolution. This ensures consistent, timely service for external customers and enhances internal support, boosting productivity and satisfaction. The result is a unified, connected, intelligent customer experience across all touchpoints.

While AI offers immense potential to transform field service management, realizing real impact requires the right technology and expert guidance to implement it effectively. That's where the Infosys–Microsoft partnership can make a difference.

The Practical Path Forward: Infosys and Microsoft in Strategic Collaboration

The Infosys-Microsoft alliance delivers secure AI solutions for Utilities that meet stringent standards like NERC CIP while preventing data exposure through unsecured AI tools. This partnership combines Microsoft's advanced AI technologies and security with Infosys' Utilities expertise, creating a comprehensive security framework for critical infrastructure.

Infosys Topaz, with over 12,000 AI assets, and Infosys Cobalt, with 35,000 assets, enhance this by providing AI-driven solutions for growth and cloud transformation, thereby improving efficiency and innovation.

This strategic collaboration eliminates vulnerabilities of multi-vendor approaches, ensuring clear protocols for data usage and AI validation in regulated environments. It offers Canadian Utilities a secure path to AI-enhanced field operations while maintaining critical infrastructure protection. The partnership is advancing toward autonomous operations, Agentic frameworks, robotics, seamless data integration, and cognitive augmentation—transforming reactive service models into proactive, sustainable operations.

Overall, Infosys and Microsoft aim to empower Utilities with smarter tools, reduce operational costs, and accelerate the shift from reactive service models to proactive, sustainable, AI-driven operations.

Concrete Solutions from Infosys on the Microsoft Platform

Infosys REF-OR-M Solution for Connected Field Service Management is a pre-configured, end-to-end solution co-developed with Microsoft, using Microsoft Dynamics 365. It combines proven best practices, predictive maintenance, and intelligent automation to enhance field force productivity, reduce downtime, and elevate customer experience.

Infosys REF-OR-M Solution - Modern CX for Utilities is a pre-configured, end-to-end customer service and sales solution built on Microsoft Dynamics 365. It streamlines contact and premise management, smart meter monitoring, case handling, and installation scheduling. IoT integration, omnichannel engagement, and real-time automation enhance productivity, ensure a unified customer experience, and drive proactive service delivery.

Navigating the Future of Field Service with AI

The transformation of Canadian Utilities field service operations represents a strategic imperative in today's complex energy landscape. AI-driven solutions enable Utilities to overcome data disparity challenges, optimize field operations, and elevate customer experiences sans the elusive "golden record."

The Infosys-Microsoft partnership provides a secure and practical path to AI implementation that respects the unique regulatory requirements of the sector. By embracing these solutions, Utilities can address both energy transition and operational efficiency challenges while maintaining the reliability that Canadians depend on.

The future belongs to Utilities organizations that transform data chaos into operational intelligence. Those who integrate AI into field service operations now will gain the resilience and efficiency needed to thrive amid unprecedented change, fundamentally reimagining what's possible in Utility service delivery.

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Erin Garritty is a highly accomplished software professional with extensive experience in supporting companies undergoing transformative journeys. In the last 20 years, Erin's guidance on aligning leading cloud technology to enterprise priorities has enabled several of Canada's most iconic organizations to redirect $2B in costs to priority initiatives. In her current role as the National Director, Enterprise Business Applications, for Microsoft Canada, she is the Energy Industry leader supporting Canada's premier Utility, Oil & Gas and Mining organizations as they navigate optimizing their operational processes to drive business growth through core technology investments.

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