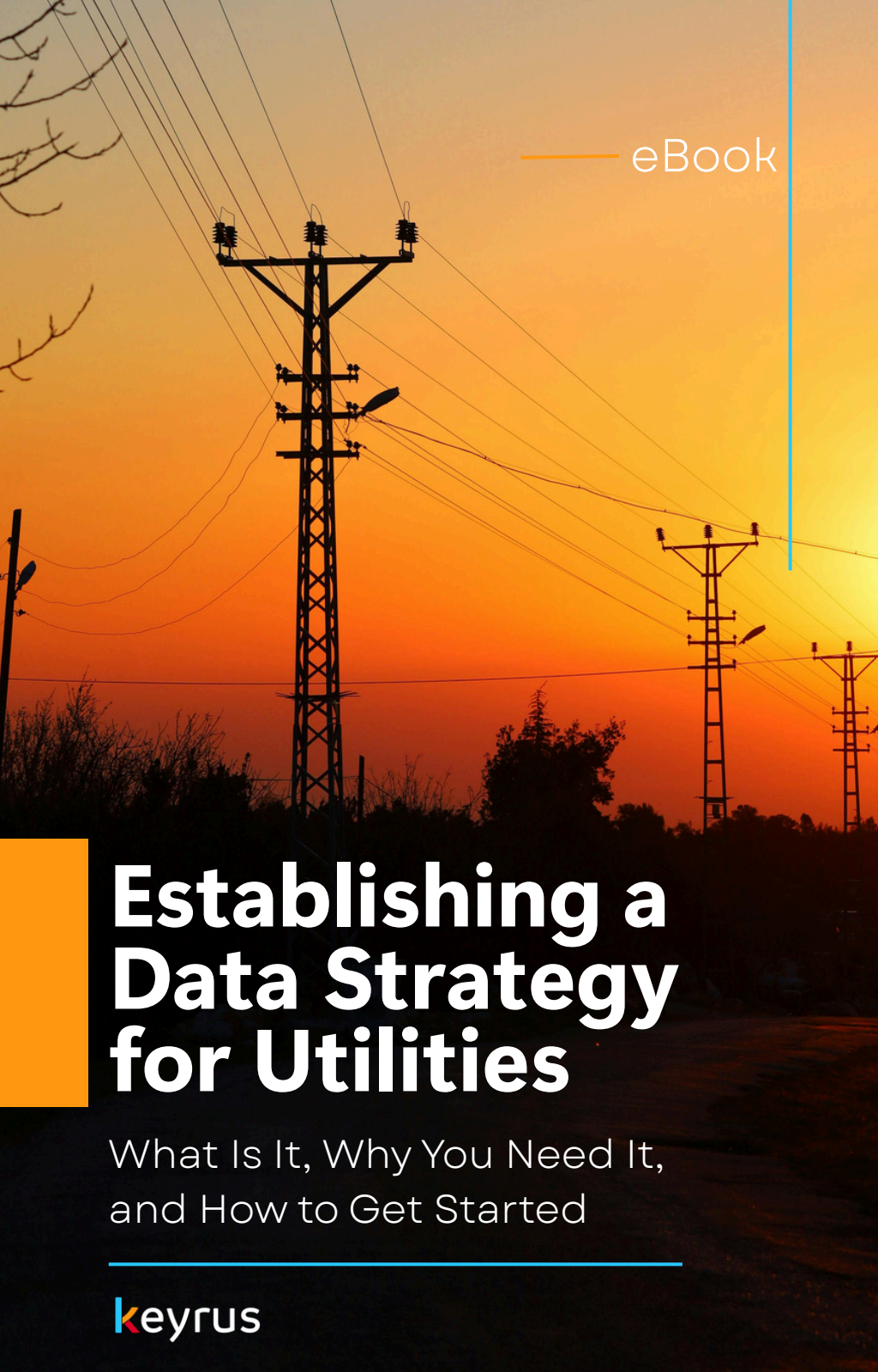


eBook

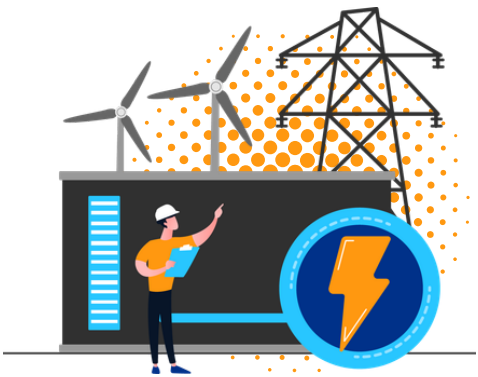
Establishing a Data Strategy for Utilities

What Is It, Why You Need It, and How to Get Started

keyrus

UTILITY & ENERGY SECTOR

Data Reality



The utility and energy sector has always run on data: meter reads, grid load measurements, asset inspection logs, and customer accounts. But for most organizations, that data lives in silos: disconnected systems, manual spreadsheets, and isolated databases that were never designed to talk to one another. The result is that even data-rich utilities often find themselves data-poor when it comes to making fast, informed decisions.

The conversation around modernizing utility data has shifted in recent years. It's no longer a question of whether to invest in data infrastructure; it's a question of how to do it in a way that actually sticks. And the answer, increasingly, starts in the same place: with a deliberate Data Strategy. For utilities beginning their data journey, the question we see most often is: where do I begin while maintaining compliance?

keyrus

THE CORE PROBLEM

Data Without a Strategy is Just Noise

Many utilities have already invested heavily in operational technology such as smart meters, grid sensors, GIS platforms, and SCADA systems. The data being generated across these environments is enormous. The challenge isn't a shortage of data. It's that the data isn't connected, governed, or activated in a way that drives real business value.

The vision worth working toward is what Kenny Edwards, Keyrus' Data Insights Portfolio Lead, describes as a "single pane of glass", or an integrated view where data from generation, transmission, distribution, and customer accounts can be accessed and acted upon in near real-time.

Most organizations are still far from that vision. They're stitching together spreadsheets and chasing down data owners, just to answer basic operational questions.

This isn't fundamentally a technology problem. It's a strategy problem. Without clarity on where you're going, investments in cloud platforms, analytics tools, and AI tend to underdeliver. Or worse, it creates new silos on top of old ones.

keyrus

THE CASE FOR ACTING NOW

Reduction in unplanned outages with Predictive Analytics

Improved forecast accuracy saves utilities $5M per 1% gain

Increase in uptime with predictive maintenance

The energy sector is facing a convergence of pressures that makes data strategy more urgent than it has ever been. Rapid EV adoption is reshaping load patterns in ways that strain legacy planning models. Distributed solar and storage are introducing bidirectional power flows that traditional grid architectures weren't built for. Aging infrastructure is driving up maintenance costs and the frequency of unplanned outages. Regulators and customers alike are raising expectations around reliability and sustainability.

Meeting these challenges requires better data; data that is integrated, governed, trusted, and actionable. That happens through deliberate, strategic investment in the underlying data foundation.

The organizations that navigate this period of transition most effectively will not necessarily be the ones with the largest technology budgets. They'll be the ones that start with a clear-eyed understanding of where they are, a realistic vision of where they want to go, and the discipline to build toward it incrementally, learning and adjusting as they go.

Sources: Credence Research, Mordor Intelligence

keyrus

CENTRALIZED DATA FRAMEWORK

Case Study

Public Utility | 240K+ Customers | United States

In this case study, we examine the establishment of a centralized data framework for one of the largest municipal utilities in Florida, USA. They had data stored in disparate systems, requiring teams to perform manual analysis. Those manual analyses are resource-intensive, time-consuming, and error-prone. Our client also needed Improved tools, processes, and data literacy to enable users to be more data-driven in their daily work. This case study resulted in faster, data-driven decision-making, impacting the business.

Results

$300K
Software costs saved

Increased visibility
into sales conversions

~25
Users enabled & trained

Approach

- **Strategic Roadmap:** Identified organizational pain points to build a customized roadmap for technology and data governance.
- **Build on Scalable Cloud Solutions:** To meet client needs for security, analytics, and cost-efficiency, this implementation prioritizes modern, scalable cloud solutions.
- **Enable Self-Service Analytics Capabilities:** Implemented a self-service model, empowering users to perform independent analysis. This accelerated data-driven decision-making while reducing IT dependency.
- **Focus on Data Governance:** Established a formal data governance framework, defining policies and processes to ensure secure and effective data management.

Source: Keyrus Playbook

keyrus

A PRACTICAL FRAMEWORK FOR GETTING STARTED

For utilities beginning their data journey, a structured three-phase approach tends to yield the most durable results:

Phase 1: Rapid Assessment

Before getting started, it's worth understanding your current state honestly and openly. The goal of a good assessment isn't to produce a comprehensive audit; it's to surface the highest-priority gaps and identify "quick wins", a.k.a. areas where relatively focused effort can deliver immediate, visible value. Those early wins are what build internal momentum for a longer transformation.

Phase 2: Roadmap Definition

Once the current state is understood, the work shifts to sequencing. This means prioritizing use cases, defining a target architecture, and building a roadmap that balances near-term value delivery with long-term scalability. A common pitfall at this stage is trying to solve everything. The more effective approach is to prioritize: start with use cases that solve critical pain points for real stakeholders and let momentum compound from there.

Phase 3: Scalable Implementation

Implementation should be designed for scale from the start. That means choosing architectural patterns that can accommodate future use cases, not just today's requirements. As your business evolves, new energy sources come online, regulations change, and customer expectations shift, a well-designed data foundation can evolve with it. If you don't set yourself up to scale, you're setting yourself up to fail.

keyrus

CAUTION

The Technical Realities You Can't Ignore

Any data architecture for a utility must be grounded in the sector's practical realities. A few requirements are non-negotiable to maintain trust, compliance, and security.

- **Interoperability** is foundational. Utilities typically operate a complex mix of legacy on-premises systems and newer cloud-based platforms. A modern data architecture needs to work across this hybrid environment, integrating intelligently rather than replacing everything at once.
- **Security and compliance** cannot be treated as afterthoughts. The utility sector operates under some of the most stringent regulatory frameworks in any industry, including NERC and FERC requirements. Role-based access controls, data masking, and audit capabilities need to be built into the architecture from day one, not retrofitted later.
- **Data integration and orchestration** bring disparate systems into a coherent whole. Tools like Qlik (Talend) for workflow orchestration and Snowflake for advanced analytics -including geospatial analytics, increasingly critical for grid asset management - can serve as the connective tissue between systems. Together, they create a unified data environment where information flows reliably and consistently.

keyrus

DON'T FORGET THE PEOPLE!

One of the most consistent themes in conversations with utility data leaders is that transformation is as much about people and culture as it is about technology.

Data governance tends to generate organizational anxiety. The prospect of defining ownership, enforcing standards, and managing change across a complex institution can feel like an obstacle before anything has even begun.

Here's an important reminder: Rome wasn't built in a day, so you shouldn't try to solve governance on day one. A use-case-driven approach typically works better. Identify a specific business problem, build something that delivers genuine value to the team dealing with it, and let the results do the advocacy work. When operational leaders experience how integrated, trusted data makes their jobs easier, when they stop spending hours chasing down information and start spending that time acting on it, they become the most effective internal champions a data program can have.

That kind of grassroots buy-in is harder to manufacture through top-down mandates, and more durable when it develops organically through demonstrated value. Building and maintaining relationships with the people involved is crucial for growth, success, and new system adoption.

Choosing the Right Partner

Doing this on your own, without experience or expertise to set up a data strategy, is daunting and overwhelming. More often than not, it's best to bring in an external partner with a proven track record of establishing data strategies for utility and energy companies - someone who understands regulatory and compliance requirements and the specific challenges facing the utility space.

Keyrus is a global data, AI, and digital consultancy with deep experience in the utility and energy sector. To learn more about how we work with utilities on data strategy, contact us or read some of our utility case studies here.

Let's Talk.

keyrus Utility & Energy Team
contact.us@keyrus.com
Keyrus North America