UtilityReinvent.AI
DIGITAL TRANSFORMATION. AMPLIFIED.

Building AI Readiness

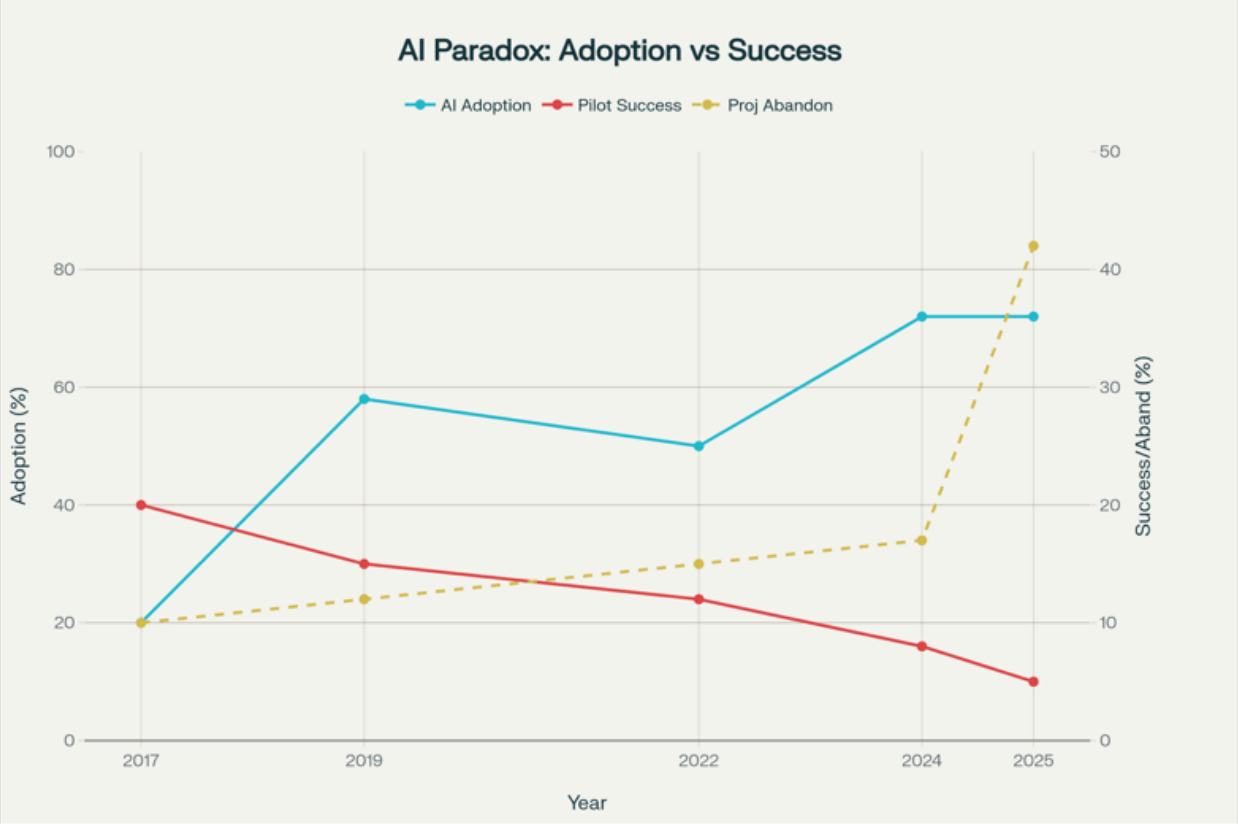
7 Factors that can make or break early AI investments

By: Bob Champagne, President UtilityReinvent.AI

The AI Pilot Paradox

Artificial intelligence is gaining momentum across the utility sector with a speed and intensity that would have seemed unlikely just a few years ago. AI workflows are quickly become visible across utility value chain, from customer experience and account management to grid planning, asset management and operations. Led by early wins in efficiency and automation, utilities are accelerating POC's (proof of concept) and moving straight into "full throttle" implementation. Exuberance and confidence in the organizations ability to operationalize, scale and harness the value from AI is visible at every level. The AI flywheel is clearly in motion and accelerating by the minute.

Yet, beneath this momentum lies a striking paradox. While AI usage in utilities has surged more than 250 percent since 2017—reaching 81 percent of organizations by 2025—the number of pilots that successfully scale has collapsed. Only about five percent of AI pilots ever reach full deployment. The vast majority stall before they transition from proof-of-concept to production, leaving meaningful value unrealized despite substantial investment and internal enthusiasm.



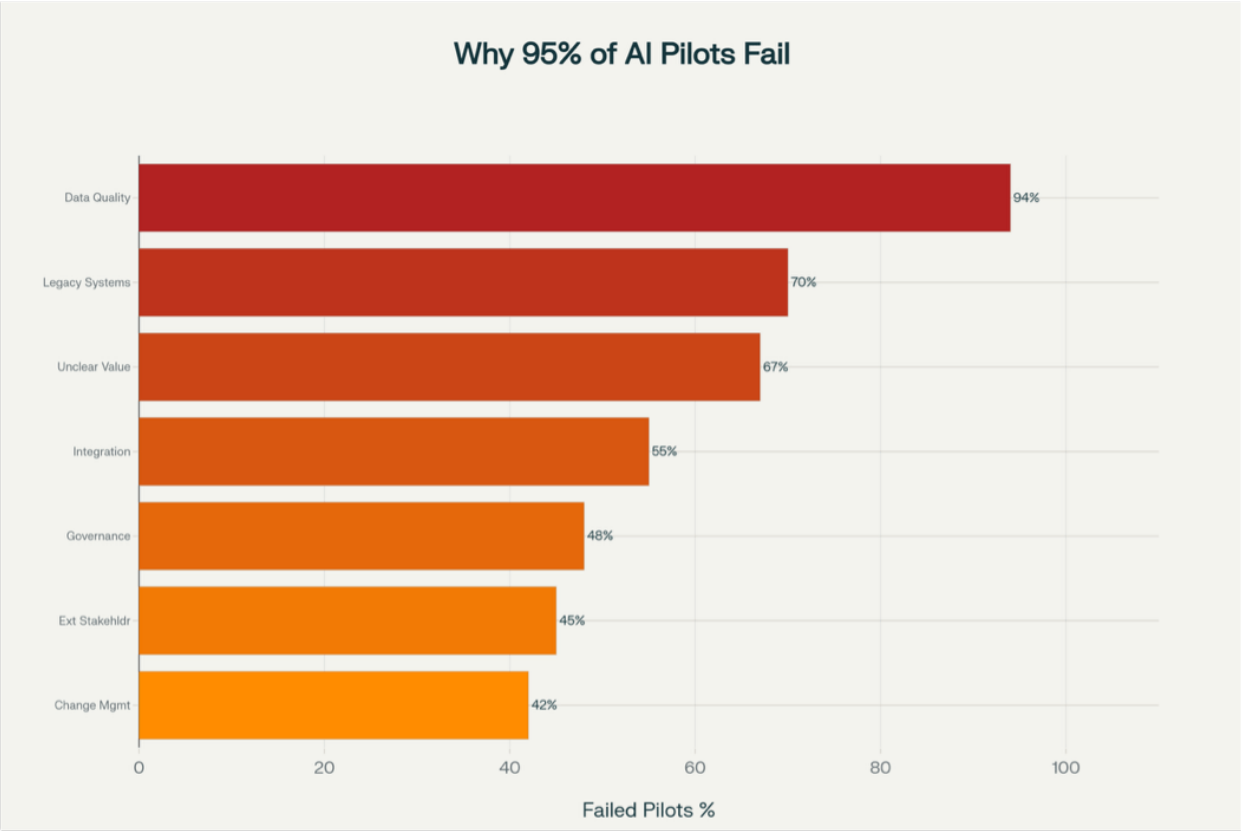
Between 60 and 70 percent stall at the proof-of-concept stage, and as industry investment continues to rise, roughly 42 percent of projects are eventually scrapped altogether. When measured against business outcomes, the picture becomes even clearer: an estimated 95 percent of AI pilots fail to deliver measurable ROI.

What makes this pattern so revealing is that most failed pilots do not collapse because of poor model performance. In fact, the majority show respectable technical accuracy, efficiency gains, or positive employee feedback. The breakdown occurs at the scaling threshold—not because AI is incapable, but because the organization is unprepared to absorb it.

Stalling in Test Flight

Across the sector, the most frequently cited barrier is data. Roughly 94 percent of stalled pilots trace their failure, in part, to data quality issues—fragmentation, inconsistent definitions, limited lineage visibility, unclear ownership, or governance gaps. Distinct technical barriers come next: legacy system architecture prevents connectivity in nearly 70 percent of stalled efforts, while 55 percent fail because systems can technically connect but workflows, APIs, or real-time requirements are too brittle to support operational use.

Organizational readiness challenges compound the problem. External stakeholder misalignment affects roughly 45 percent of failed pilots, while internal employee uncertainty or resistance contributes to another 42 percent. Meanwhile, value hypotheses are often vague or unmeasured, governance frameworks are incomplete, and many pilots limit their ambition to automation rather than exploring reinvention.



Taken together, these patterns explain why technically "successful" pilots so rarely become durable enterprise capabilities. The models work—but the organization around them does not. The pathway to real impact requires not more pilots, but a different kind of preparation: deliberate readiness.

The remaining sections explore **seven dimensions of readiness** that consistently determine whether AI becomes a scalable capability rather than another abandoned experiment.

Data Readiness

Utilities possess one of the most intricate data landscapes in any industry. Decades of CIS transactions, AMI interval readings, outage management histories, telemetry streams, customer interaction logs, and equipment metadata accumulate into a rich but unwieldy ecosystem. Many

organizations interpret the sheer volume of data as a strength, assuming abundance equals readiness. In practice, abundance often conceals fragmentation.

Fewer than one-third of utilities report mature data governance. Even when individual datasets are accurate, the lack of standardized definitions, inconsistent data structures, unclear ownership, and missing lineage can undermine confidence the moment data is combined. AI models amplify these inconsistencies. Machine learning does not harmonize misaligned data—it operationalizes it.

Data readiness begins with establishing trust in existing data rather than rushing to acquire more of it. That trust requires identifying authoritative sources, establishing stewardship, enforcing quality thresholds, standardizing structures, clarifying permissions, and resolving contradictions that accumulate when systems evolve independently over decades. When data becomes coherent, AI becomes dependable. When it remains fragmented, AI magnifies the fragmentation.

AI cannot compensate for unclear data. Models trained on conflicting inputs produce conflicting insights. But once data is aligned, AI becomes capable of creating clarity rather than confusion. Data readiness transforms AI from an experiment into a reliable source of operational intelligence.

Integration Complexity

While much attention is placed on models and algorithms, the greatest barrier to scaling AI lies in integration. Analysts estimate that up to 80 percent of AI scaling effort is not the model itself, but the work required to embed AI into operational workflows. Utilities face this challenge acutely because core systems—many architected decades ago—were never designed for real-time AI interaction.

Integration readiness encompasses both system capabilities and workflow integrity. It assesses whether data can move to and from AI systems continuously, whether platforms can ingest AI outputs programmatically, and whether vendor constraints allow for the level of access required. In many cases, the right APIs exist, but they are either too slow to support real-time decision-making or too costly due to licensing models. Some systems provide data only as historical exports rather than streaming feeds. Others cannot accept AI-generated recommendations in structured formats.

Dimension	Legacy System Incompatibility	Integration Barriers
Nature of Problem	Architectural/infrastructure barrier	Process/orchestration barrier
When It Surfaces	Pre-pilot or early pilot phase	Mid-pilot to scaling phase
Technical Question	"Can this system connect to anything modern?"	"Can we reliably connect these systems?"
Root Cause	System was never designed for external integration	Integration exists but is brittle, costly, or incomplete
Example Symptoms	No APIs, proprietary formats, closed vendor ecosystem	APIs exist but poorly documented; data sync failures; security blocks
Fix Complexity	High: Replace system or build custom middleware ($2-50M)	Medium: Build orchestration layer, fix workflows ($200K-2M)
Fix Timeline	1-5 years (often multi-year capital project)	3-12 months (engineering project)
Utility Statistic	70% cite legacy incompatibility as barrier to AI adoption	70% of pilots fail due to integration breakdown
Readiness Gap	Missing: Modern system architecture; data accessibility	Missing: Integration governance; workflow design; orchestration layer

These limitations are not discovered in the slide deck or the demo; they reveal themselves only when pilots approach scale. Even when pilots succeed within a narrow sandbox, the operational environment imposes constraints that small-scale experiments do not expose. For example, a chatbot may function well in a controlled environment but fail once required to exchange data in real time with CIS, billing, and outage systems. A predictive model may accurately identify at-risk transformers but stall once workflows must update scheduling, notify field technicians, and align with asset management logs.

Integration readiness is not about connecting everything everywhere. It is about identifying which systems are mission-critical to the use case and ensuring that those systems support the interactions required for operational AI. In many cases, scaling hinges on the readiness of just one or two platforms. When these systems are unprepared—due to architecture, API design, vendor restrictions, or latency constraints—the entire pilot stalls.

Integration readiness becomes the bridge between experimentation and enterprise value. It ensures AI can operate within the real systems that run the business, not just in isolated environments designed for testing.

Defined Paths to Value

The rise of AI has created an explosion of creativity in utilities. Pilots emerge across dozens of use cases—from customer messaging to field diagnostics to load forecasting to vegetation management. Many of these pilots are technically elegant and deliver promising early results. Yet too often, they stall because the organization cannot quantify the value.

Value readiness requires a shift from curiosity-driven experimentation to hypothesis-driven design. Rather than entering a pilot with the hope of discovering value, utilities must articulate the expected outcomes before the first model is trained. This does not require speculative business cases but clear, measurable hypotheses about what the pilot is intended to improve and by how much. When expected impact is pre-defined, even modest early gains become meaningful because they can be calibrated against the baseline.

Without value readiness, promising pilots fall into a familiar trap: stakeholders see improvement, but no one knows whether the improvement is sufficient, sustainable, or strategic. Decision-makers cannot justify investment when metrics are ambiguous. Enthusiasm becomes insufficient. The pilot becomes difficult to champion. And once it becomes difficult to champion, it becomes easy to deprioritize.

With value clarity in place, pilots become easier to evaluate and easier to scale. Decision-makers gain confidence not only in the technology but in the business case behind it. The organization begins to see AI not as an experiment but as an asset.

Staff Awareness (Readiness to Embrace)

Utilities operate in environments where human judgment, empathy, and expertise are indispensable. Outage communications during storms, customer conversations about billing hardship, field diagnostics requiring contextual awareness—all these scenarios highlight the irreplaceable nature of human interaction. AI enhances these experiences, but it does not replicate them.

People readiness reflects how prepared the workforce is to adopt, use, and shape AI tools. Employees rarely resist technology out of sentiment; they resist when they lack clarity about how technology will affect their roles. AI introduces uncertainty, and uncertainty without communication becomes resistance.

The utilities that succeed with AI treat employees not as recipients of technology but as participants in shaping it. They communicate early, explain the purpose behind the tools, demonstrate how roles will evolve, reveal how the technology reduces administrative burden, and invest in training that allows employees to feel confident rather than replaced.

When employees understand that AI will augment rather than diminish their roles, they become advocates rather than skeptics. People readiness is ultimately about trust—trust in the technology, trust in leadership, and trust in the future of one's role.

Stakeholder Alignment

Utilities do not operate in a vacuum. They communicate with regulators, collaborate with vendors, negotiate with unions, rely on community trust, and interact with customers whose willingness to adopt new offerings directly affects success. Each of these groups holds different expectations about transparency, fairness, privacy, and alignment.

Stakeholder readiness ensures that AI is not implemented in isolation from the environment it affects. Regulators may require clarity about how decisions are made or how customer data is used. Community leaders may want reassurance that AI-driven communication is not depersonalizing important service interactions. Vendors need time to modernize interfaces or expose APIs. Customer advocates may prioritize explainability and data protections.

Bringing stakeholders into the process early—before pilots expand—prevents misalignment that can stall progress before scaling even becomes possible. Stakeholder readiness should not be reactive; it is most effective when it becomes a deliberate component of AI strategy.

Governance & Guardrails

Governance ensures AI is deployed responsibly, predictably, and safely. Without governance, utilities risk inconsistent decision-making, ethical concerns, regulatory challenges, and operational drift. Yet governance need not be slow or bureaucratic. Mature AI organizations implement governance frameworks that operate less like rigid rules and more like pragmatic pre-flight checklists.

These frameworks clarify who is accountable for AI decisions, how models are validated, how drift is monitored, and how privacy, fairness, and explainability are ensured. Governance ensures that AI behavior aligns with regulatory expectations and public trust. It provides the structure needed for innovation to scale without sacrificing reliability or safety.

The utilities that implement lightweight, but robust governance frameworks find that governance accelerates deployment rather than slows it. When risk is managed thoughtfully and consistently, decision-makers gain confidence. That confidence enables faster, not slower, deployment.

Readiness to Innovate

The final domain—innovation readiness—is often the most overlooked. AI pilots frequently begin with narrow goals focused on automating existing processes. These goals are valuable, but they rarely unlock AI's strategic potential. Automation can reduce effort and increase consistency, but it does not fundamentally transform outcomes.

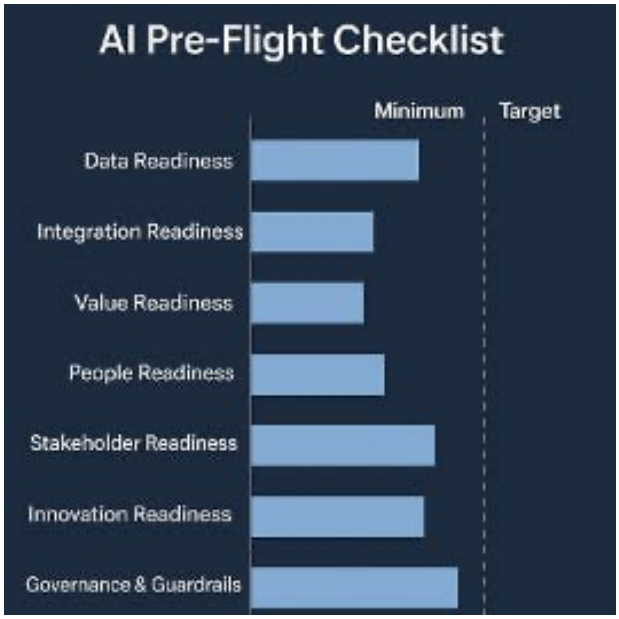
Innovation readiness represents the mindset shift needed to move from incremental change to reinvention. Instead of asking how an existing process can be improved, innovation readiness encourages utilities to ask what the process would look like if it were designed today with AI at its center. This shift unlocks possibilities that are not accessible within the constraints of today's workflows.

Innovation readiness guides organizations toward "path-to-zero" experiences—zero friction in customer interactions, zero unnecessary delay in field operations, zero redundant steps in internal workflows, and zero mismatch between customer intent and system response. These redesigns require creativity and cross-functional collaboration. They also require confidence that AI will be integrated into the future of the business, not appended to its past.

When innovation readiness is embraced, AI ceases to be a collection of pilots and becomes part of a broader transformation strategy.

Are YOUR AI Pilots Ready for Success?

The utilities that win the next era of AI will not be those running the most pilots—they'll be the ones preparing the strongest foundations. The most important step any organization can take *right now* is to conduct an honest readiness assessment. Understand your baseline. Identify gaps. Build shared awareness. And begin establishing the habits that will support every AI initiative that follows.



A readiness assessment is not theoretical. It asks direct questions—questions that reveal whether the organization is truly prepared to turn promising pilots into real business value.

Here are some areas we challenge our clients on as they prepare to undertake early investments in AI:

- Have you validated the data sources, definitions, governance structures, permissions, and quality standards required for this use case to function reliably at scale?
- Have you had the necessary conversations with system owners and vendors to confirm that required APIs, real-time access, and workflow interactions are possible—not simply assumed?

- Have you defined the ROI and translated it into clear, compelling, and measurable metrics that leadership can use to make a go/no-go scale decision?

- Have you engaged the employees who will use or be affected by this AI tool, clarified role impacts, and addressed uncertainty before it becomes resistance?

- Have you aligned regulators, partners, customers, community stakeholders, and unions around expectations for transparency, privacy, fairness, and responsible use?

- Have you evaluated whether your current governance model—including accountability, testing, monitoring, privacy, and ethical standards—is sufficiently robust to support the risks and responsibilities of scaling this use case?

- Have you looked beyond simply automating today's process and considered whether this pilot could be the first step toward redesigning the process entirely?

Once you answer these questions for one pilot, you will have the beginnings of a **repeatable readiness discipline**—a structured approach you can apply to every future initiative. That discipline becomes the difference between organizations that experiment endlessly and those that convert AI into durable, measurable enterprise value.

Get Started Now

The next decade will be defined not by which utilities conduct the most AI pilots, but by which utilities set their pilots up for a good test flight and prepare them to soar. The emerging pattern is unmistakable: AI capability alone is no longer the differentiator. Readiness—the deliberate, structural, organizational, technical, and cultural foundation required for AI to operate at scale—is now the determining factor in long-term success.

To build that foundation, data must become trustworthy and coherent, not merely abundant. Integration must be sustainable, with systems and APIs capable of supporting real-time interaction rather than brittle, one-off connections. Value must be measurable, with clearly defined metrics and hypotheses that allow leaders to make confident investment decisions. People must be empowered through clarity, communication, and role evolution, not left to navigate uncertainty on their own. Stakeholders—internal and external—must be aligned so that

regulatory expectations, customer trust, and vendor commitments support rather than constrain progress. Governance must be disciplined enough to ensure responsible use but agile enough to keep pace with innovation. And above all, innovation must be embraced with imagination and boldness, moving beyond the incrementalism of automation toward the reinvention of processes, journeys, and operating models.

AI experimentation will certainly continue to grow at a feverish place. But experimentation without readiness leads to stalled pilots, unrealized value, and opportunities left on the table. The utilities that invest in readiness today will not only scale their AI pilots—they will redefine what it means to serve customers, manage infrastructure, and operate in an intelligent, automated, and data-driven energy future.

* * * * *

Bob Champagne is President and Managing Partner of UtilityReinvent.ai, a network of industry professionals, advisors and thought leaders committed to helping utilities harness the power of data to accelerate transformation of the energy and utilities industry.

Bob has served in the energy and utilities sector for over 35 years, working with senior leaders to navigate challenges associated with industry transition and market reform. Throughout his career, he has worked with over 120 organizations globally in both regulated and competitive energy markets, focusing on customer strategy, business transformation, and digital innovation. He has also been at the center of several successful technology start-ups focused on harnessing the value of data and digital insights across the energy and utilities value chain through the application of advanced analytics, machine learning and AI.

He currently serves as Vice-Chair of the Green Button Alliance Board of Directors- a non-profit organization facilitating industry-wide adoption of the DOE-supported Green Button ™ standard for governing the safe and secure data sharing between utilities, customers and 3rd party market participants.