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WHITE PAPER

Challenges in managing unstructured information for long-life utility assets

Overcoming data silos, lifecycle disconnects, and compliance complexity to unlock the full value of unstructured information in utility asset management

Contents

“The main use case for OpenText Content Management for SAP for us is to link SAP work and asset management data with our unstructured data. By leveraging OpenText, we can ensure a single source of truth, reduce the manual handling of all content, and move forward with our mobility strategy to better enable individuals in the field to access the information they need.”

Nilesh Kevat, Enterprise Architect, Jemena

We are moving faster than ever before—but slower than we ever will again

The utility sector relies heavily on vast physical infrastructure, including long-life assets such as electrical substations and natural gas infrastructure (e.g., distribution lines). Managing these assets effectively over their extensive lifecycles, which can span decades, is critical for ensuring grid reliability, safety, compliance, and financial performance. These assets generate and rely upon a significant volume and variety of information and unifying it across systems throughout their stages, from initial planning and design through construction, handover, operation, maintenance, upgrades, and eventual retirement. Much of this information exists in diverse formats across various systems and even physical locations, presenting significant challenges for utilities seeking to gain a holistic and usable view of their assets.

Long-life utility assets and associated information

Long-life assets like substations are fundamental components of the power grid, transforming voltage levels, switching power flows, protecting equipment, and monitoring conditions. Their lifecycle is defined by distinct stages: Plan, design, build, handover, operate, maintain, upgrade, and retire. Similarly, natural gas infrastructure and water systems are crucial infrastructure with long lifespans.

Throughout these stages, a wealth of information is generated and required for decision-making, operations, and compliance. This includes:

- **Technical documentation:** Design specifications, engineering drawings, operating manuals, maintenance procedures, as-built drawings.
- **Operational data:** Performance metrics, sensor readings, SCADA data, incident reports, maintenance records.
- **Regulatory information:** Permits, filings, compliance requirements, inspection reports, audit trails, environmental documentation.
- **Financial data:** Cost estimates, budgets, asset value, total cost of ownership.
- **Supplier and material data:** Information on parts, components, equipment, their specifications, sourcing, and traceability.
- **Geospatial information:** Asset location data, often managed in GIS systems.
- **Historical data:** Records of past events, repairs, upgrades, and decisions.

Effectively managing this diverse and often unstructured information and unifying it across systems is essential for successful asset management.

"Our records, documents and files must be maintained in accordance with stringent data protection, retention and management guidelines set by our regulators. To protect the company from regulatory and reputational risks, it's crucial for us to meet these requirements at all times. OpenText Content Management gives us a great sense of confidence when it comes to knowing what records we have, where they are stored, for how long they will be kept, and who can access them."

Lisa Aragon, Ethics & Compliance Director

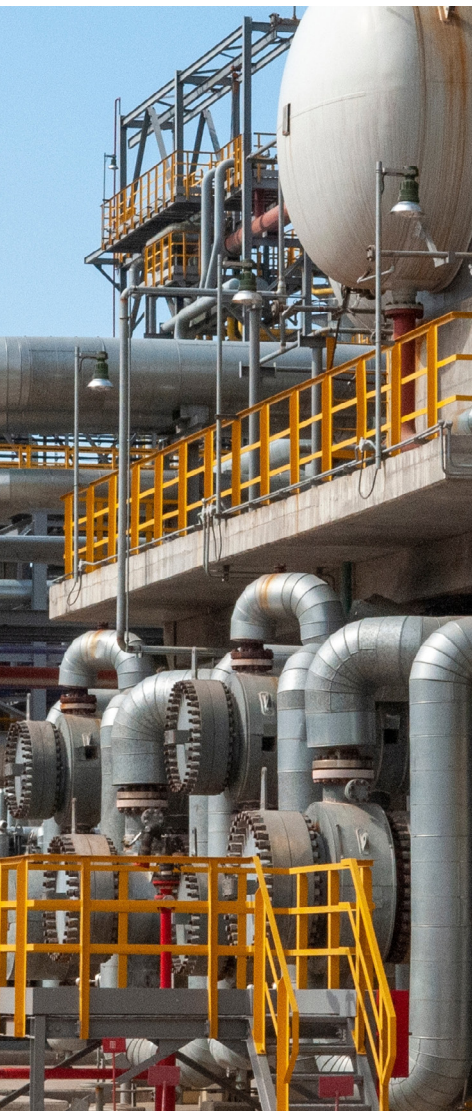
"We can now effectively manage information from the three most important platforms for our business: OpenText Content Management, SAP ERP, and ArcGIS. All important information concerning our day-to-day network operations and maintenance is available 24/7. Our engineers can look up anything they need quickly, wherever they are. Since decommissioning our paper archives we are saving a total of $300,000 a year."

Ron Schell, Director of Enterprise Applications

Key challenges in managing information for long-life assets

Utility companies face several significant challenges in managing information associated with long-life assets:

- **Data silos and fragmentation:** Critical information about an asset is frequently trapped within specific departments or systems, such as billing, maintenance management, or GIS. This fragmentation hinders collaboration and prevents a holistic view of the asset.
- **Inefficient information discovery and retrieval:** Finding the specific information needed, such as equipment specifications or customer interaction history, can be time-consuming and difficult, requiring searches across multiple disconnected systems.
- **Lack of data governance and quality:** Without a solid foundation, it is difficult to establish and enforce policies for data quality, security, privacy, and compliance. Issues like poor or missing information quality are noted. Defining data ownership and stewardship is challenging.
- **System integration complexities:** Integrating new technologies and data sources with existing, often aging, legacy IT and operational technology (OT) systems is complex and costly due to diverse data formats, structures, and protocols.
- **Maintaining data lineage, context, and history:** Tracing data back to its origin, understanding its context throughout the asset's life cycle, and maintaining its lineage is difficult. Context adds value to data. Learning from early planning and design decisions gets disconnected from later operational phases, making it hard to understand the original assumptions or rationale for decisions made decades prior.
- **Managing data volume (extraneous data, archiving/disposal):** Utilities collect vast amounts of data, much of which may not have a specific purpose for decisions around operation or maintenance. Storing and maintaining this extraneous data incurs costs. Furthermore, knowing when and how to archive or dispose of data is a significant challenge, complicated by legal and liability concerns and a lack of defined retention policies. Utilities face the task of sifting through many systems to figure out what data can be disposed of to avoid litigation liability.

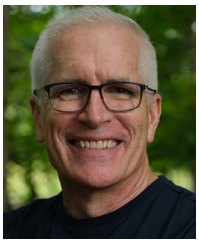


- **Navigating regulatory information demands:** The entire asset lifecycle is subject to complex regulatory oversight from bodies like FERC, NERC, EPA, OSHA, and state PUCs. Each requires specific types of information at different stages (planning justification, design compliance, maintenance records, environmental reporting, safety logs). Managing the volume and specifics of these requirements across diverse asset types and jurisdictions is demanding.
- **Information disconnection across the lifecycle:** The information needed to justify a project or make decisions at the planning stage is often disconnected from the information generated during construction, operation, or retirement. This makes it difficult to learn from past experiences or link decisions across the asset's full lifespan.
- **Challenges with external information exchange:** Utilities interact with many external parties, including manufacturers; engineering, procurement, and construction (EPC) firms; and permitting authorities. Exchanging information with these entities can be problematic, as their systems, processes, and timelines may not align with the utility's, leading to delays and difficulty in integrating external data. Information from manufacturers about equipment, including product lifecycle management data, needs to be effectively captured and managed by the utility upon receipt.

Conclusion

Utilities should choose OpenText to unify information across asset lifecycles, eliminating silos and enabling seamless access to critical data—from planning to retirement. OpenText is a top 25 software company serving hundreds of utilities worldwide with leading information managements solutions that ensure compliance, improve decision-making, and enhance operational efficiency. With OpenText™ Aviator™, utilities can take the next step: Having intelligent, secure conversations with their data using AI. Aviator empowers teams to ask natural-language questions and receive contextual insights instantly, transforming how utilities manage long-life assets and respond to regulatory, safety, and operational demands.

Contact



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