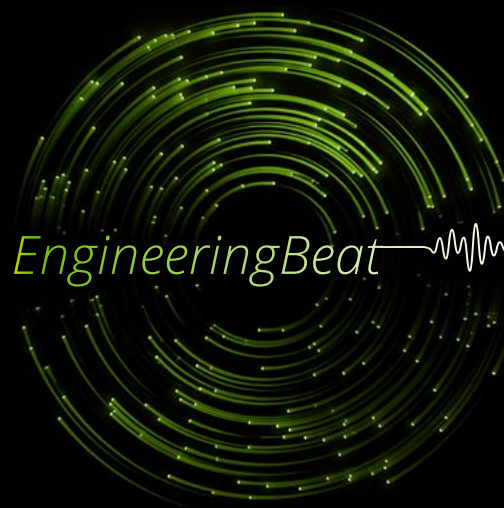# Deloitte.

EngineeringBeat: Powering success with mainframe modernization

Leveraging cloud-based digital transformation for power, utilities and renewables organizations

EngineeringBeat

At many power, utilities and renewables (PU&R) organizations, legacy mainframes continue to host mission-critical applications that support financial transactions, billing, customer support and outage management activities, among many others. However, due to the limitations of mainframe technology, such as inflexibility, limited scalability and growing maintenance costs—as well as an increasing scarcity of developers with mainframe skill sets—many PU&R organizations are constrained in effectively serving their customers, managing their grids/assets, analyzing their data, and maintaining regulatory compliance.

Migrating mission-critical applications to more modern technological ecosystems like cloud can help. Cloud platforms can help PU&R enterprises access cutting-edge technologies like AI/machine learning, advanced analytics, and cloud-based enterprise resource planning (ERP) solutions to gain the real-time data access, flexibility and scalability they need to grow their business and compete more effectively in a dynamic market.

Challenges mainframe modernization can help solve

Power, utilities and renewables organizations are facing increasing challenges with their mainframe systems that are compelling them to modernize. By migrating off mainframe systems, PU&R companies can meet current demands while future-proofing their infrastructures and operations.

1 Mainframes can impede real-time customer service. Enable it with cloud-based ERP systems.

At PU&R companies that still have legacy platforms hosting their customer support and billing applications, customers can often experience delays and frustration when trying to access their accounts, make payments or make changes to their services. These rigid, batch-oriented systems often struggle with responsiveness. At the same time, customers are increasingly demanding transparency and ease of use, especially regarding the ability to quickly access billing, service option and payment history information.

Migrating these operations to advanced technology platforms like cloud-based ERP systems can help. These platforms offer real-time processing and intuitive digital customer interfaces that enable faster response times, reduce errors and provide the agility to adapt quickly to evolving customer demands. As an added bonus, they can also help streamline operations and deliver efficiency gains and reduced operational costs.

2 Billing can be cumbersome on mainframes. Streamline it with new, smarter technologies.

To generate accurate, timely customer billing reports, PU&R companies often need to coalesce data from disparate systems. However, mainframe systems can have integration issues—especially with newer platforms and data sources—and that can lead to fragmented or unavailable data and inconsistent workflows. This lack of unified information flow can result in billing errors, delayed statements and reduced customer trust. Thus, as the volume, variety and complexity of data grows, legacy systems become bottlenecks rather than enablers of efficient billing processes. This can also limit the flexibility to accommodate new regulatory requirements and bring assistance programs to those most in need, such as customers with limited incomes.

Migrating to cloud-based platforms can make it easier to consolidate data and generate accurate, timely billing reports. These newer platforms also more effectively support new technologies such as smart meters that enable smoother operations, quicker data processing, enhanced accuracy, and better integration with modern systems. Modern tools also offer automation of manual tasks, which reduces errors and enables processing large volumes of data with more precision and accuracy. It can also free up valuable resources for more customer-focused and strategic initiatives.

> The seamless connection modern platforms offer tends to make it easier to consolidate data and generate accurate, timely billing reports.

3 Mainframe architectures can complicate compliance efforts. Make them more agile with modular systems.

Keeping up with constantly changing compliance standards requires continuous monitoring and prompt adaptation. However, mainframe systems often lack the flexibility to respond quickly to new mandates or industry regulations. Failure to comply can result in financial penalties, negative audit results and reputational damage. To add to the challenge, upgrading mainframe systems to address new requirements can be especially difficult as these systems may have matured over decades with scarce or outdated documentation, which increases the risk of disrupting critical operations during the upgrade process.

Modernized platforms like cloud can help improve regulatory compliance through the use of more agile modular systems that support real-time updates and enhanced visibility into system data and performance. Cloud-based, modern applications can be well positioned to enhance regulatory compliance because they offer built-in monitoring, automated audit trails and flexible, scalable frameworks that help organizations adapt quickly to changing regulations. Modern platforms can also reduce IT teams' efforts to maintain compliance because they can improve governance, risk management and data integrity—which can help utilities satisfy both regulatory agencies and stakeholders.

4 Mainframes can make effective grid management difficult. Optimize it with cloud-based solutions.

Organizations in the PU&R sector that still run their grid management systems on mainframes face significant challenges. Inflexibility, high maintenance costs, and struggles with data volumes and complexity make it difficult to maintain their current grids effectively, much less integrate them with newer, more sustainable and distributed energy resources. These issues can hinder effective grid planning and management, causing efficiency and reliability issues, and limiting organizations' ability to scale to meet increasing demands.

Modernizing to cloud can help address these challenges and enable PU&R organizations to build and manage their grids to be future-ready—adaptable to changing energy sources, markets and more. Cloud platforms offer the scalability to perform real-time data management and analysis, which is critical for optimizing grid management, performance and planning. Cloud also facilitates seamless integration with next-gen tech—such as predictive analytics, the Internet of Things, and AI—that can improve demand forecasting, resource management, and implementation.

> Modernizing to cloud helps PU&R organizations build a more sustainable, resilient and scalable grid system—one that builds lasting business advantage.

The modernization payoff

The potential benefits of modernization are clear. Updating away from legacy technology can give PU&R organizations the ability to improve operational, service and compliance activities—all of which position them to scale effectively and sustain long-term growth. Benefits include:

Real-time customer service and improved user experience: Cloud-based ERP platforms can enable real-time processing and intuitive digital interfaces— which can help PU&R organizations enhance response times, improve transparency, and make customer interfaces more intuitive and accurate in real time.

Operational efficiency and cost reduction: Streamlined operations and automation can help reduce errors associated with manual tasks, decrease possible redundancies and lower operational costs— which together can free up teams to focus on more strategic efforts.

Accurate, timely and integrated billing: Cloud-based systems enable improved data integration, and they support new digital technologies like smart meters—which can improve operations, billing processing and accuracy, and demand forecasting.

Enhanced compliance and risk management: Agile cloud systems allow for real-time updates, automated audit trails and automated monitoring— which can make it easier to meet evolving regulatory standards to avoid the risks that come with noncompliance.

Scalability and adaptability: Cloud platforms offer the flexibility and scalability PU&R organizations need to manage grids effectively—especially in emergency situations where conditions are changing rapidly, such as during storms and outages. Cloud can also help PU&R companies quickly adapt to changing market, customer and regulatory needs. All of this positions them to sustain growth and competitive advantage.

The path forward

To meet the challenges of an increasingly dynamic market and regulatory environment, and to position themselves for sustained growth, it's essential PU&R organizations prioritize modernizing their mainframe systems. Migrating critical applications to cloud-based platforms can enable them to streamline their operations, enhance regulatory compliance, and improve their customers' experience—all while building a technology ecosystem that will power growth and position them to thrive now, and in the future. The time to act is now.

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