



Building the future today with One Digital Grid Platform

Executive summary

The utility sector is undergoing a significant transformation driven by the need for more efficient, reliable, affordable, and sustainable energy management. As the energy landscape worldwide shifts towards a more complex operational environment and a potential tripling of electricity demands by the year 2050 [1], utilities are forced to prepare for grid complexity due to distributed generation [2], changing weather patterns [3], and aging grid infrastructure [4], all while balancing cost-effectiveness and customer needs.

The convergence of these challenges necessitates a complete rethinking of how utilities plan, build, operate, and maintain their grids, while continuing to elevate end-customer experience. Much of this rethinking will require a new approach to the convergence of the customer's IT environment with its operational solutions (OT) within a utility's lines of business. Fortunately, there is precedent for this. In learning from IT modernization patterns of other industries, such as banking, healthcare, and software, utilities can confidently adapt with more interoperable solutions based on common data models, and be able to respond to evolving requirements of their grid's needs.

As a result of these evolving needs the Energy industry – and the utilities managing their grids within it – is now at an inflection point where both real-time data insights driven from on-premises workloads and the scalability of the cloud are critical to ensure reliability, flexibility and simplicity in their operating environments. Schneider Electric recognizes this moment in history and has developed the One Digital Grid Platform to ensure the continued success of its customers and partners.

This paper aims to provide context on how a transformation to a more modern IT/OT environment can enhance resilience, accelerate innovation, and enable realization of investments made in other technologies. Through leveraging learnings from the IT modernization of other industries, the document will also review how design principles of the One Digital Grid Platform have been tailored to align with both the new landscape of Utility requirements, and how those design principles are influencing architecture decisions that will help utilities to achieve greater flexibility, resilience, and simplicity.

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Utility needs as evolution drivers

Historically, utilities have managed the electric grid in separate segments (generation, transmission, distribution and retail), leading to disparate islands of investment planning and operational execution. These inconsistencies lead to scenarios of mismanagement, where focusing too much on local issues prevents more ambitious, integrated planning and operations. As the grid evolves further with increased load and higher adoption rates of distributed energy resources (DERs), traditional operational models and solutions will become less efficient due to the complexity of applications and data. In most recent report by Total Grid Orchestration Alliance [5], a utility-led collaborative forum, four key needs that are foundational for holistic grid management have been identified:

System-wide Coordination implies ensuring that all segments of the electric grid (generation, transmission, and distribution) work together seamlessly. The goal is to balance supply and demand in real-time, which is crucial for maintaining grid stability and efficiency. By coordinating system-wide operations, utilities can respond more effectively to fluctuations in energy demand and supply, integrating renewable energy sources and distributed energy resources (DER) more efficiently.

Holistic Situational Awareness refers to the ability to monitor and understand the current state of the grid. This involves using advanced monitoring tools and data analytics to gather real-time information about grid conditions. Utilities can predict future conditions and potential issues by analyzing this data, allowing them to make informed decisions and take proactive measures to maintain grid stability and reliability.

Elevated Risk Management is about identifying and mitigating potential issues before they impact the grid. This includes assessing risks related to equipment failures, cyber threats, natural disasters, and other factors that could disrupt grid operations. By implementing robust risk management strategies, utilities can enhance the resilience of the grid and ensure a reliable supply of electricity to customers.

Integrated Planning and Operations bridge the gap between long-term planning and day-to-day operations. This capability ensures that investment decisions and operational strategies are aligned and optimized. By integrating planning and operations, utilities can make more strategic investments in infrastructure, technology, and resources, leading to a more efficient and reliable grid.

These new capabilities are essential for modernizing the electric grid and addressing the challenges posed by increased load, severity and frequency of major events, and the adoption of DERs. By implementing these strategies, utilities can create a more holistic and efficient approach to grid management, ultimately benefiting both the utility and its customers.

To implement these new strategies, utilities will need to take a slightly different approach from their standard operating models. Luckily, utilities can look to precedents in other industries to effectively navigate the comprehensive IT modernization transition. The banking sector is an informative precedent [6]; market dynamics for banks and utilities are remarkably similar: both industries tend to be conservative and face heavy, geographically unique regulation. Yet, in recent years, the banking industry has embraced a huge shift toward new technologies. Healthcare is another example of accelerated technology adoption in protected industries; cloud computing for healthcare was adopted early, allowing for safe and efficient sharing of medical records and enabling a rapid transition to telehealth and other new models of coverage.



Perhaps the best example of IT modernization is the first one, in Software Development itself. It's helpful to look at this evolution in stages, to benchmark where many utilities are today, and to understand the direction in which their modernization is likely headed given the evolution of other industries. This modernization can be roughly broken down into three stages: Machine Level Programming in the 1960's and 1970's, Operating Systems in the 1980's through 2000's, and Ecosystems in the 2010's through today.



Machine Level Programming — Initially, Machine-Level Programming involved literal 1's and 0's instructing single machines, purpose built to accomplish a specific task, with no system integration or scalability. This scenario is similar to the current grid environment: systems are siloed, built on legacy technology stacks, and require significant effort for simple integrations. Current grid software solutions have also been tailored to address specific, crucial elements of operation, but generally as standalone environments that require significant manual effort to integrate more broadly.



Operating Systems — The next stage in software development, the advent of Operating Systems, gained popularity as they began to address the need for scalable integration. Allowing users to operate in a single, standardized environment also introduced more structural security capabilities and common user-friendly interfaces. However, procurement remained complex; software had to fit hardware requirements and was difficult to acquire and deploy. So, while Operating Systems offered a foundation for a more robust IT environment, they did not fully realize the potential for seamless integration and scalability. An analog for Grid Management includes integrated systems such as ADMS, GIS, and Demand Response solutions, and potentially broader “system of systems” that manually integrate these technologies.



Ecosystems — To date, the most advanced stage in this example is the Ecosystem applicable to the software industry. This is best exemplified by the software capabilities enabling smartphones, where third-party applications enhance user experience within a secure, collaborative environment. These third-party applications allow each user to customize their device with applications that suit their unique needs, with applications utilizing shared data, accessed the data uniformly, and benefiting from a security guarantee governed by the Ecosystem provider. This environment thrives on partnership and collaboration; this Ecosystem approach is the best means of embracing the many different software solutions within the Utility's IT footprint.



One Digital Grid Platform

When it comes to the utility industry, a similar Ecosystem approach is necessary to achieve the modernization of grid management. The One Digital Grid platform is the enabler of such an Ecosystem. The platform includes a set of best practice principles, rules, tools, and common services, supported by an underlying hybrid infrastructure that enables easy deployment, access, management, and extension of grid management applications.

Key intents

To fully understand how this platform enables this holistic approach to grid management, it is essential to delve into the core objectives that drive its design and functionality. All aspects of the design and development of the platform are subjected to these five key intents:



Standardized interoperability — The platform is open for integration with any device (e.g. DER, field automation systems, IoT sensors, etc.) and any solution within a utility’s enterprise environment through standards-based APIs built on top of a well-governed utility meta-model.



Advanced cybersecurity — With cybersecurity being one of the main challenges for utilities, the platform is being built according to Zero-Trust principles and in compliance with industry standards for secure development lifecycle (IEC 62443).



Plug-and-play for Schneider Electric grid management applications — All applications from the Digital Grid portfolio, when delivered according to SE guidelines, are compatible with the platform and require minimum configuration adjustments.



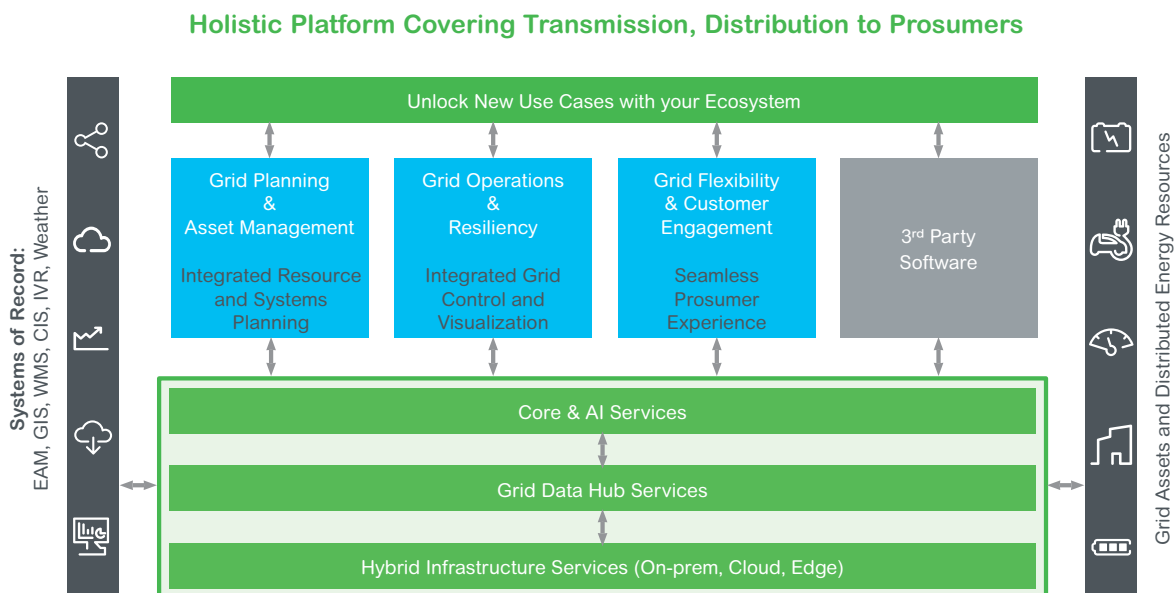
Simplified deployment — Infrastructure as Code (IaC) tools enable immutability and repeatability (i.e. automation) in the deployment process, making it much more efficient, faster and less error prone.



ISV and partner inclusion — The platform exposes a common meta-model of the underlying utility data and well-defined set of APIs, identity and access management controls, and cybersecurity policies that are enabling independent software vendors and partners to bring additional values to utilities in a standardized and secure way.

High level architecture

The One Digital Grid Platform architecture leverages the latest architecture principles to meet the stringent regulatory and security requirements of modern utilities. Designed to seamlessly integrate from edge devices to control rooms, and spanning enterprise business applications to the cloud, this architecture creates a unified environment where true interoperability across the entire utility landscape is realized.



The One Digital Grid Platform employs a layered architecture, purposely built to solve specific utility challenges. On top of the layered architecture, the One Digital Grid Platform implements a data-centric approach, placing data at the heart of system design. This methodology prioritizes the structure, flow, and management of data, ensuring that security, creation, storage, processing, and utilization are the primary considerations. By focusing on data relationships and dependencies, the architecture drives seamless integration and robust performance across the entire utility landscape.

Hybrid Infrastructure Services enforce fundamental principles and policies across edge, enterprise, and cloud environments. They scale seamlessly with business application needs, supporting platform growth with application expansion. While ensuring a level of standardization, it remains flexible to integrate with existing utility ecosystems, including on-premises datacenters. This hybrid infrastructure layer standardizes the full stack – from networking, compute, and storage to infrastructure services such as authentication, authorization, monitoring, administration tools, isolation, and segregation.

Grid Data Hub Services layer provides backbone for application interoperability across all three environments, enabling connectors for native data federation across all applications within the ecosystem. Additionally, the Grid Data Hub integrates data models and master data to ensure high fidelity, scalability, and interoperability for SE digital grid applications, third-party applications, and improved integrations with other utility systems. This approach streamlines new utility software as platform subscription apps, enabling quick delivery of new use cases to customers.

The third layer of the architecture encompasses **Core and AI Services**. This layer includes essential capabilities such as Asset Data Management, DER/Asset Registry, Network Modeling, Model Management, Grid Topology, Alarming & Eventing, Power Flow, Forecasting, Simulation, and common AI Services. Through these core & AI services, critical functionalities within the ecosystem become accessible to any application via standardized APIs. This approach ensures that applications can seamlessly integrate and leverage these capabilities, fostering interoperability and enhancing the overall efficiency and intelligence of the utility's operations.

This architecture offers two models for application integration:

1. Platform-Built Applications: Applications (1 st and 3 rd party) are developed directly on the platform, becoming part of a broader ecosystem. They adhere to the platform's best practices, policies, and rules, ensuring built-in security, native interoperability, standardized deployment models, and robust monitoring capabilities.	2. Connected Applications: Applications connect to the platform via standard connectors, providing full flexibility in development and deployment. This model allows for easy integration with the platform, enabling limited interoperability with other applications while maintaining the freedom to innovate independently.
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The One Digital Grid Platform is designed with flexibility in mind, allowing both first-party and third-party applications to choose the architecture that best suits their needs. Whether opting for microservices or modular monolith architectures, the decision is driven by the specific needs of the utility.

Historically, the evolution from monolithic to distributed software architectures has revolutionized many industries. By leveraging event-driven communication, asynchronous processing, and microservices, software systems have successfully been decentralized, addressing many of the core challenges of modernization. However, this shift has introduced certain complications such as increased topological complexity, tangled dependencies, and slower development velocity. The mission of the One Digital Grid Platform is to abstract these complexities, streamlining development, deployment, and maintenance processes. This approach inherently drives down costs when building new applications and fully integrating them into a production environment, similar to how car manufacturers lower expenses by using a common platform for multiple car models.

Microservices offer loose coupling, higher scalability, and faster development velocity, making them ideal for applications that require frequent updates and independent scaling. Conversely, a modular monolith approach can simplify management and deployment, providing a more straightforward solution for less complex applications. By combining microservices and modular monolith approaches, utilities can achieve higher development velocity, simplicity of management, and scalability. This hybrid architecture takes the best of both approaches, while avoiding their downsides ensuring performance and flexibility.

The presentation layer of One Digital Grid Platform provides a harmonized and intuitive user interface across group of applications, ensuring that all utility personas, such as mappers, designers, operators, customer teams and administrators can navigate effortlessly between various features.

Key design principles

For Schneider Electric, platforming journey is not something new. The One Digital Grid Platform represents the culmination of over five years of dedicated investment, development, and customer collaboration. Throughout this period, we have gathered invaluable insights from our customers and partners, allowing us to tailor the platform to meet the unique challenges and needs of the utility sector. Our extensive experience and commitment to excellence have driven the evolution of this platform, ensuring it delivers unparalleled efficiency, reliability, and scalability. This platform embodies our deep understanding of the industry and our unwavering dedication to building the future of grid management together with our customers and partners.

The One Digital Grid Platform is an inclusive, AI-powered, modular platform providing secure, end-to-end connectivity and digitization from grid to prosumer. The platform has been built with a data-centric architecture approach where data, rather than processes or services, is at the core of the system design. By focusing on how data is structured, secured, created, stored, processed, and used, the natural barriers of traditionally siloed systems begin to erode, and utilities can more efficiently deploy and operate multiple applications within their ecosystem.

Zero trust from design to operations

Schneider Electric's cybersecurity strategy employs a multifaceted approach that includes securing internal activities, protecting strategic IT systems and assets, leading the digital transformation of energy management and automation within a cybersecure framework, and designing new products with end-to-end cybersecurity measures. The company's commitment to cybersecurity is evident in its top-level adherence to industry standards such as IEC 62443 and ISO 2700x, and its proactive measures to protect high value offers and services.

The One Digital Grid Platform by Schneider Electric is meticulously crafted to tackle the pressing challenges faced by contemporary utilities. To guarantee robust security and resilience, the platform integrates a Zero Trust Architecture (ZTA), fundamentally transforming cybersecurity by enforcing continuous verification and stringent access controls. ZTA operates on the principle of "never trust, always verify," ensuring that access requests, whether internal or external, are continuously authenticated and authorized based on a comprehensive set of criteria tailored to the grid context.

Zero Trust principles are particularly crucial in electric operations technology (OT), where the focus is on maintaining safety and reliability. Unlike IT environments, OT prioritizes safety and reliability over confidentiality, making the implementation of ZTA more complex. Schneider Electric addresses these challenges by integrating ZTA with OT-specific standards like ISA/IEC 62443, which provides a holistic approach to cybersecurity, bridging the gap between operations and information technology.

The Schneider Electric Secure Development Lifecycle (SE SDL) process complements ZTA by embedding Zero Trust principles throughout the software development process, ensuring security is integrated from inception to deployment. Additionally, the platform adheres to Trust Services Principles and Criteria, involving rigorous third-party audits to verify the effectiveness of security controls over time. This compliance ensures the protection of sensitive data and operational integrity, showcasing Schneider Electric's commitment to high-security standards and robust data protection.

Secure operations are maintained through continuous monitoring, incident response, and adherence to best practices in cybersecurity, creating a robust defense strategy that safeguards sensitive data and supports mission-critical operations.

By integrating ZTA with the SE SDL process, the One Digital Grid Platform cybersecurity architecture supports safe and reliable operation of electric utilities. This comprehensive approach, paired with ongoing security operations attested by SOC 2 Type 2, enhances situational awareness, supports mission-critical operations, and enables utilities to achieve greater efficiency, resilience, and innovation.









True hybrid deployment

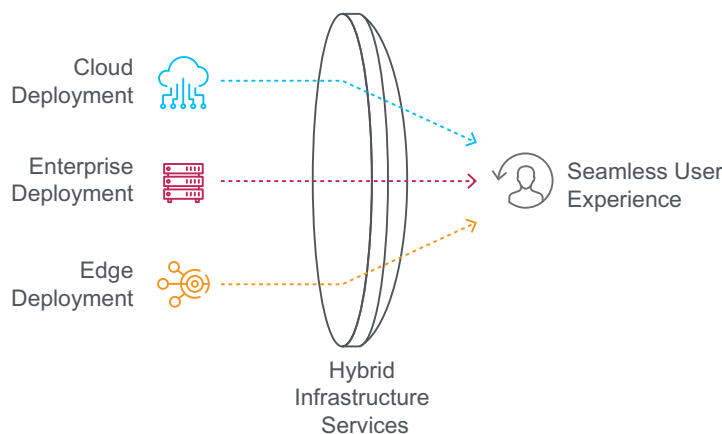
Historically, utilities have lagged behind other asset-intensive industries in adopting new technologies, including cloud solutions. However, the barriers that have traditionally hindered cloud adoption – such as security concerns, regulatory compliance requirements, and lack of internal technical expertise – are now being outweighed by the significant benefits cloud technology brings to the utility sector [8]. Utilities are increasingly adopting cloud technologies [9] and offloading workloads to the cloud in a phased approach. A hybrid deployment model allows utilities to gradually migrate non-mission critical workloads to the cloud while retaining mission-critical workloads on-premises.

This true hybrid model supports optimal workload management, enabling applications to be deployed in the most suitable environments – cloud (as a service model), enterprise (in the utility’s data center), or ultimately edge (on edge devices for local automation) – based on specific customer requirements. This flexibility allows utilities to adopt a phased approach, utilizing enterprise solutions, edge solutions and/or solutions delivered on cloud as a service, while unlocking the full potential of hybrid deployment in the future. Hybrid infrastructure services layer enables this cohesion by providing standardized and secure connectivity and policy enforcement across these environments. This ensures a unified experience for end users as they will not be aware of the actual deployment location of individual applications. For them, workloads and applications will work seamlessly together without affecting users experience. This is achieved through the application development governance that provides set of rules and principles that each application (both 1st and 3rd party) follows.

One of the key pieces in this true hybrid deployment story is the common Identity and Access Management (IAM) service. Regardless of where the individual applications are deployed, they all share the same IAM service. Moreover, One Digital Grid platform IAM service can be federated with the utility’s own Identity Provider (IDP), simplifying the user management for utilities even further.

By embracing the true hybrid approach, utilities can experience numerous benefits such as:

-  **Flexibility and Adaptability** — True Hybrid model combines on-premises and cloud resources, providing a more flexible and efficient solution for customers’ IT needs.
-  **Control and Compliance** — This model allows customers to retain control over the critical aspects of the application and helps in meeting their regional, regulatory, and corporate compliance requirements.
-  **Efficient Innovation Adoption** — Customers can benefit from new features sooner due to independent software updates of individual components within the hybrid ecosystem.
-  **Datacenter Cost Optimization** — Significant cost savings can be achieved as customers pay for only what they need, instead of paying the price of oversized on-premises data centers.
-  **Operational Costs and Complexity Optimization** — It reduces the operational cost and complexity by shifting some of the maintenance and management tasks to Schneider Electric. It frees customers’ IT time to focus on strategic initiatives rather than routine maintenance.
-  **Enhanced Productivity** — It brings added value faster by enabling faster spin up or shut down of additional non-critical environments in the cloud, and by reducing the dependency and interference between the different environments.



Open standard data model

The key principle of One Digital Grid Platform is to maintain API and model consistency. By implementing a governance model that ensures backward compatibility and interoperability, native connectivity between first-party and third-party applications remains consistent over time. That is the primary reason why all models and APIs are developed under robust governance to ensure they are utilized and exposed in a way that guarantees interoperability.

One Digital Grid Platform's open standard data model is a standards-based data schema that provides structural and semantic consistency across applications and deployments. It simplifies data consumption and application development by unifying data into a known form. It's important to note that a common data model should not be confused with a common database/data lake. While a common data model standardizes the structure and relationships of data, a common database refers to a single, centralized repository for storing data. Understanding this distinction is crucial for effective data management and interoperability. The One Digital Grid Platform's open standard data model is implemented as a crucial part of Grid Data Hub Services layer. It is compiled from several interconnected data domains, including Grid Hierarchy, Wires, Measurements, Weather, DER, Operations, Crew, Work, Alarms, Events, Customers, AMI, and more. By leveraging the IEC Common Information Model (CIM) standard to define the categories, properties, and relationships between these data domains, utilities can experience numerous benefits across transmission, distribution, generation, retail, and market operations:



Enhance data interoperability — Ensure seamless data exchange between first-party and third-party systems.



Improve decision-making — Provide a unified view of data, enabling more accurate and timely decisions based on comprehensive insights.



Support regulatory compliance — Maintain consistent data standards that align with regulatory requirements, simplifying compliance reporting.



Enable advanced analytics and AI applications — Facilitate the use of AI and machine learning by providing a structured and standardized data foundation, leading to better predictive maintenance, load forecasting, and grid optimization.






By implementing a model ontology like CIM, utilities can transform their data into a strategic asset, driving efficiency, reliability, and innovation across their operations.

In addition to the open standard data model, the One Digital Grid Platform adopts a messaging mechanism as key backbone for data sharing, enabling an event-driven architecture for all applications. The message bus is used for data ingestion from external sources, such as integration connectors, as well as for internal data exchange between different core services and applications. The platform provides standard CIM and IEC-based message formats on the message bus where applicable, extending these formats with proprietary models to enable a vast number of use cases. The governance model enforced on top of the message bus ensures consistency over time, enabling platform-level interoperability. This message bus can be used directly by any application within the ecosystem, offering a new model for utilities to connect external applications to the platform without the need for expensive integrations.



Big data cloud architecture

Generation and Transmission operators have had monitoring and control capabilities for decades, while the Distribution system has only become digital in the last decade and continues to grow. The volume, velocity, and complexity of data relationships in the grid space are rapidly increasing. Based on Schneider Electric's extensive experience in delivering Digital Grid technologies worldwide, we have encountered situations where large utilities receive over 800 million AMI reading records, 250 million SCADA measurement records, 30 million event and log records, and 100 million relational records daily. Additionally, edge intelligence data from automation and behind-the-meter (BTM) resources is contributing to this influx. As a result, the complexity of grid topology, with device data and BTM resources, is expanding at an exponential rate annually for utilities. This growth is generating a new level of challenges for utilities:

-  **Lack of Usable, Contextualized Data** — Grid operators need "true" grid data that is consistently mapped to a common data model(s) across all siloed systems and data sources, updated in real-time, and accurate in terms of asset connectivity and location.
-  **Data Model Management** — Utilities need the ability to customize, maintain, and govern their data models in accordance with their business context and regulation.
-  **Huge Data Volumes** — Utilities must handle, aggregate and query data streams from millions of devices that take frequent measurements.
-  **Complex Integrations** — Existing solutions, such as manual point-to-point integrations, are expensive to build and maintain, prone to errors, and lack flexibility.
-  **Self-Serviced Experience** — Utility personnel lack the intuitive tools to perform end-to-end data workflows independently, with user-friendly UIs and low-code tools.

To address this, the One Digital Grid Platform is built on big data cloud architecture principles, enabling it to ingest, process, and analyze data beyond the limits of traditional database systems. The platform aims to enable cross-referencing of data from systems running on or integrated with the platform into a common data layer.

For that purpose, the One Digital Grid Platform offers a dedicated Grid Data Hub Services layer to accommodate all those needs. Through Grid Data Hub, data from any application within the ecosystem can be connected, creating a single metamodel that describes connectivity between all data sets within the utility's landscape. This unified access to data breaks down siloes and enables new business capabilities, reducing the need for complex integrations. The interoperability extends beyond the digital grid platform and its applications, allowing utilities to use the platform to enhance data interoperability across all applications within the utility and enable AI-powered use cases.



AI where it makes sense

The foundational concepts of AI and ML were established in the 1950s and 1960s. Over the past few decades, these technologies have made significant inroads into the utility industry. Early applications focused on predictive maintenance, optimizing asset management, and enhancing grid reliability, demonstrating AI/ML's transformative potential. These initial successes paved the way for more advanced and widespread adoption in areas such as load forecasting, fault detection, and customer behavior analysis. Recently, generative AI (GenAI) has begun to make its mark. With increased compute power, advancements in hybrid cloud, and enhanced cybersecurity technologies, utilities are now prepared to leverage GenAI to further improve their operations and drive innovation.

The One Digital Grid Platform is designed to solve specific customer problems more efficiently than traditional heuristic approaches, rather than leveraging Generative AI (GenAI) technology solely for its popularity. Utilizing big data cloud architecture and open standard data models, the platform lays the foundation for advanced AI capabilities. It focuses on applying AI to real-life utility challenges, such as faster control room operator onboarding, blue sky day and major event day navigation, forecasting functions, customer load and generation curve creation, estimated time of restoration calculations, and many more.

In each scenario, AI/ML is deployed where it is most effective, using selected models tailored to the specific problem or machine learning (ML) algorithms for appropriate use cases. This includes the strategic use of Small Language Models (SLM) over the Large Language Models (LLM). Small Language Models (SLM) are designed for specific tasks with limited scope and data requirements. They are less hardware intensive and easily managed, deployed and trained comparing to LLMs. SLMs are ideal when precision and speed are critical, and the data set is specific and manageable. Large Language Models (LLM), on the other hand, are capable of handling vast amounts of data and complex language tasks. They are suitable for broader applications that require extensive contextual understanding and nuanced decision-making. By employing the appropriate AI model, the One Digital Grid Platform achieves best-in-class results that drive decision-making within the utility.

Additional benefit of the platforming approach is reflected in seamless AI-powered use cases adoption across entire utility ecosystem. Such adoption is enabled by Evaluation Platform as a Service capability. This strategy involves providing a comprehensive evaluation environment across the entire One Digital Grid Platform. It allows utilities to add various data sources and evaluate the best setup from data preparation to the selection and deployment of machine learning models. By offering this as a service, utilities can systematically assess different configurations and methodologies to determine the most effective approach for their specific needs. This approach supports the entire lifecycle of data management and AI model development, ensuring that utilities can optimize their data workflows, enhance model accuracy, and streamline deployment processes. The evaluation environment also facilitates continuous improvement by enabling utilities to test and refine their setups in a controlled environment, ultimately driving better decision-making and operational efficiency. When it comes to actual deployment in production environment platform offers a flexible deployment approach either in the cloud or in enterprise environment driven by the security constraints. Each deployment scenario is secured, controlled, and monitored to ensure zero trust security, while providing flexible solutions for various utility needs. In addition, GenAI is used only in aiding the users, helping them navigate through the system and be more efficient, and will not be issuing any commands automatically.



Conclusion

The One Digital Grid Platform by Schneider Electric represents a groundbreaking approach to modernizing the utility sector. As a logical evolution of the existing Digital Grid portfolio, it addresses some of the most critical needs of utilities. By enabling system-wide coordination, holistic situational awareness, enhanced risk management, and integrated planning with operations, the platform empowers utilities to achieve greater efficiency, resilience, simplicity, and innovation. Through strategically set intents, the goal of the One Digital Grid Platform is to establish utility's ecosystem and foster its growth.



Powered by true hybrid deployment model, the One Digital Grid Platform allows utilities to reduce costs and optimize resources, resulting in a lower total cost of ownership. The implementation of a data-centric architecture and strategic application of AI further enhances the platform's capabilities, enabling utilities to leverage big data and advanced analytics for improved decision-making and operational efficiency. The platform's flexibility in deployment (whether on-premises, in the cloud, or at the edge) provides the adaptability needed to meet evolving regulatory, security, and operational requirements. Continuous access to the latest innovations through an evergreen support model accelerates software adoption and opens doors to numerous opportunities.

As utilities navigate their IT modernization journey, the One Digital Grid Platform offers a comprehensive solution that simplifies migration, integration, management, access, and deployment which will be further explored in the next paper in this series.

The One Digital Grid Platform is not just a technological advancement but a strategic enabler for utilities to drive flexibility, reliability, simplicity, and innovations. By fostering an open utility ecosystem and enabling secure, end-to-end connectivity, the platform supports utilities in building and maintaining a modern, intelligent grid that meets the demands of the future energy landscape while benefiting both the utility and its customers.



Resources

-  [1] [Deloitte - 2025 Power and Utilities Industry Outlook](#)
-  [2] [IRENA - Renewable energy highlights](#)
-  [3] [Climate Central - Surging Power Outages and Climate Change](#)
-  [4] [Systems with intelligence - Transforming an Aging Grid – Where Should Utilities Focus Investments?](#)
-  [5] [TGO Alliance - Advancing Total Grid Orchestration for a Resilient Energy Future](#)
-  [6] [Forbes - What Utilities Can Learn From Banking](#)
-  [7] [BuiltIn - Cloud Computing in Healthcare](#)
-  [8] [IDC - The Benefits That Cloud-Enabled Platforms Can Bring to Utility Organizations](#)
-  [9] [IDC - The Growing Adoption of Cloud Technologies in the Utility Industry](#)

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Siniša Cvijanović As a Chief System Architect for Grid Operations Management league, Siniša is responsible for defining and implementing technical vision for entire Grid Operations product portfolio, and driving software innovations across organization. With 16 years of experience on ADMS products, he serves as a basis for progressive products centered on the SE core mission and vision.

Nebojša Kurjakov is Product Marketing Manager in the Schneider Electric's Digital Grid business. During his 15 years in Schneider Electric, he's been through various roles, across Software Engineering, Product Management and Project Implementation, before joining the Product Marketing team. He holds a BSc and MSc degrees in Computer Science, from University of Novi Sad.

Nenad Tojagić is the Global Head of Portfolio Marketing and the Lead Product Manager behind One Digital Grid Platform. Nenad owns both the portfolio marketing strategy including product launch, sales enablement, messaging, and market positioning for Digital Grid business, along with the vision, strategy, and execution of the One Digital Grid Platform, the next-generation software platform for grid management. Nenad has more than 15 years of experience in Digital Grid software business across software engineering, architecture, product management, and project delivery of enterprise software solutions such as ADMS, DERMS, GIS and others.

Velibor Stevanović has over a decade of combined experience in software and security engineering, and is certified in CSSLP and CISSP. He began his career as a software engineer before transitioning to product security, where he was one of the first members of the Product Security Office (PSO). From the PSO inception to today, Velibor has been collaborating tightly with colleagues, industry experts and customers as well to address pressing security challenges and keep up with emerging trends in the cyber domain.

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