The grass is always greener

The modernization journey for Utilities.

Depending on what you are dealing with each day, you may be thinking that the grass is greener somewhere else. It’s part of the human condition to believe someone else has it better.

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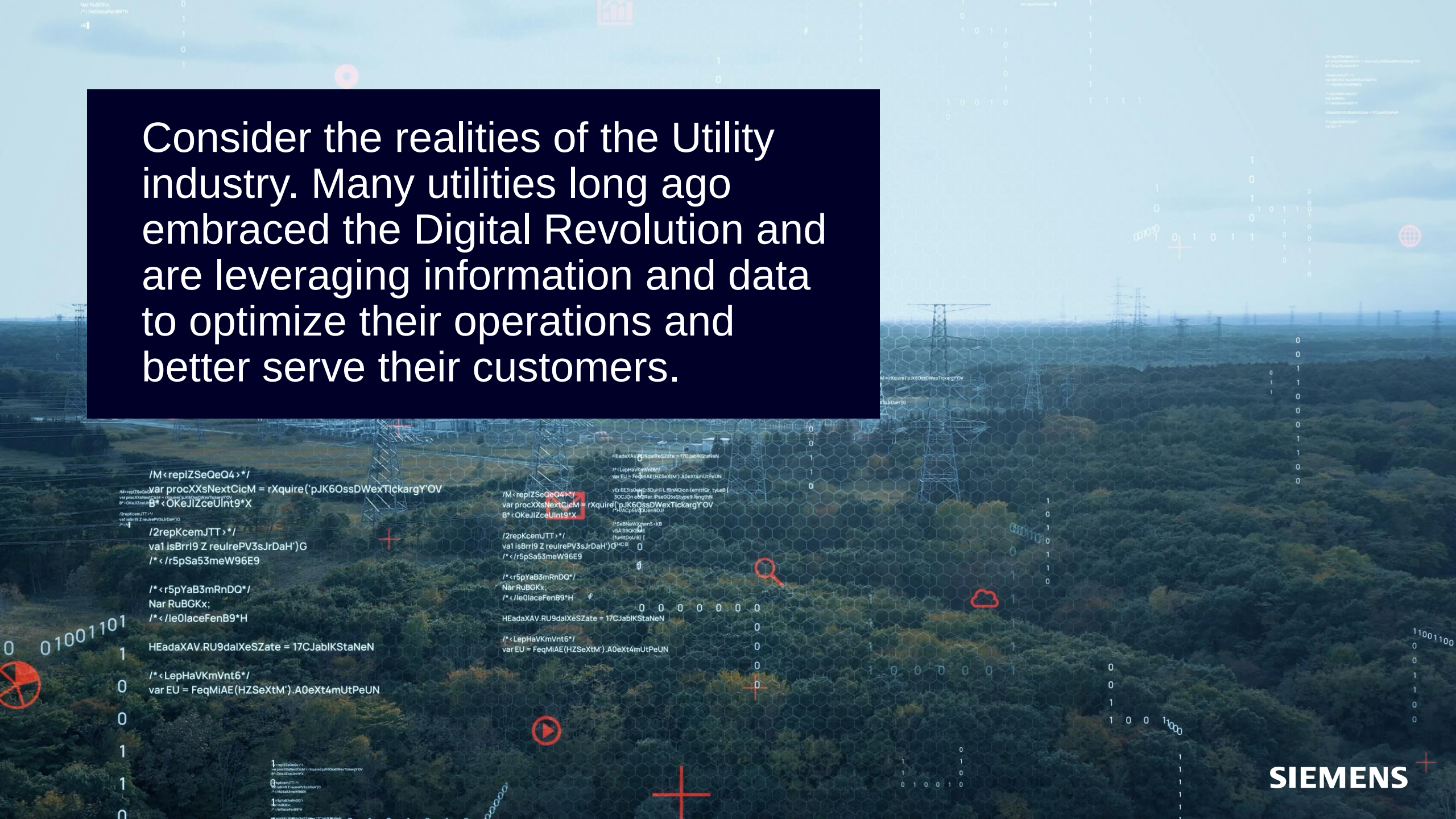
Consider the realities of the Utility industry. Many utilities long ago embraced the Digital Revolution and are leveraging information and data to optimize their operations and better serve their customers.



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Some utilities have not invested for a variety of reasons. This includes required big investments in time, expertise, and capital investments to modernize critical infrastructure.

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For utility operators stuck in the analog past, it is only a matter of time before they get on board – voluntarily or not. They are like fish swimming upstream facing a myriad of challenges including:

- Operational inefficiencies
- Glaring cyber risks
- High costs associated with managing traditional non-digital substations

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Recent well-publicized events have underscored the widespread impacts resulting from outdated networks making them significantly more vulnerable. The potential damages are big but pale in comparison to the regulatory risk and reputational fall-out.

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For digitized utilities, the benefits delivered through technology are enormous. This is especially true for critical substations where 24 X 7, fail proof communication is essential.

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Let’s take a look at some benefits of digitizing, modernizing and hardening utility infrastructure.

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Benefit #1: Increased Transparency

Digital substations provide a wealth of operational data that gives full line of sight into the status and performance of all resources across the grid.

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Benefit #2: Better OPEX

This information can be used to extend hardware and software lifecycles, thanks to data that supports predictive servicing and maintenance, which also prevents and minimizes outages.

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Benefit #3: Enhanced Security

More transparency translates into enhanced security. This includes stronger protections against natural disasters and physical attacks on the grid.

Additionally, digital substations provide real time status (and warnings) on cybersecurity threats, as well as human and technical failures.

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Benefit #4: Satisfied Customers (and Regulators)

Digital substations lead to more reliable and efficient supply of electricity, stable power quality parameters and bidirectional energy flow, resulting in happier customers.

Regulators take comfort knowing that if something goes wrong, there is data to mitigate impacts and prevent incidents from reoccurring.

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For decades, Siemens and its RUGGEDCOM family of products and solutions have been helping utilities smartly navigate issues, big and small, as they digitize their operations and future proof their businesses.

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Siemens helps utilities by providing a proven roadmap with logical (and actionable) steps to make the transition. Here are six such steps.

Step 1: Assemble an in-house team of diverse experts.

- Bring together multi-disciplinary experts from diverse areas such as telecommunications, IT, protection and control, substation technologies, SCADA and cybersecurity.

- Partner with external experts to help get teams comfortable with the technology in a test lab setting.

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Step 2: Start small with a pilot project.

- Test new technology by running pilot projects in select sites in parallel with existing/legacy systems to validate the technology, gain confidence, and provide valuable learning and experience along the way.
- Make cybersecurity a top priority and develop “cyber test cases” for your proof of concept.

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Step 3: Perform costs vs. benefits analysis.

- Conduct detailed analysis of all costs (CAPEX & OPEX) associated with the digital substation technology. Compare that with the costs of your existing solutions.
- Do a thorough analysis of benefits. There should be many including:
  - lower maintenance expense
  - reduced labor costs
  - higher technical performance
  - improved uptime
  - better workplace safety
  - enhanced system visibility
  - improved remote monitoring capabilities

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Step 4: Develop specs for your “Digital Substation of the Future”.

- Define clear objectives and goals with a set of technical requirements for devices, systems and solutions.
- Include a separate set of cybersecurity requirements for the new systems that cover devices, network, applications, systems, processes.

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Step 5: Launch the tender process.

- Keep a close eye on technical compliance, standards-based solutions, reliability, cost effectiveness and the total cost of ownership.

- Select the best technology and partners that meet your requirements/criteria and can help ensure flawless project execution from beginning to end.

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Step 6: Don’t forget training. It matters.

- The best technology doesn´t help if your teams don´t know how to use it!
- Identify key stakeholders who will have to deal with the new technology every day.
- Scope out the required new skillsets for each group and enroll large groups of staff into ongoing related training programs.

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To learn more about how to make the transition into the digital age where the grass is indeed greener, contact us today at **siemensci.us@siemens.com.**

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