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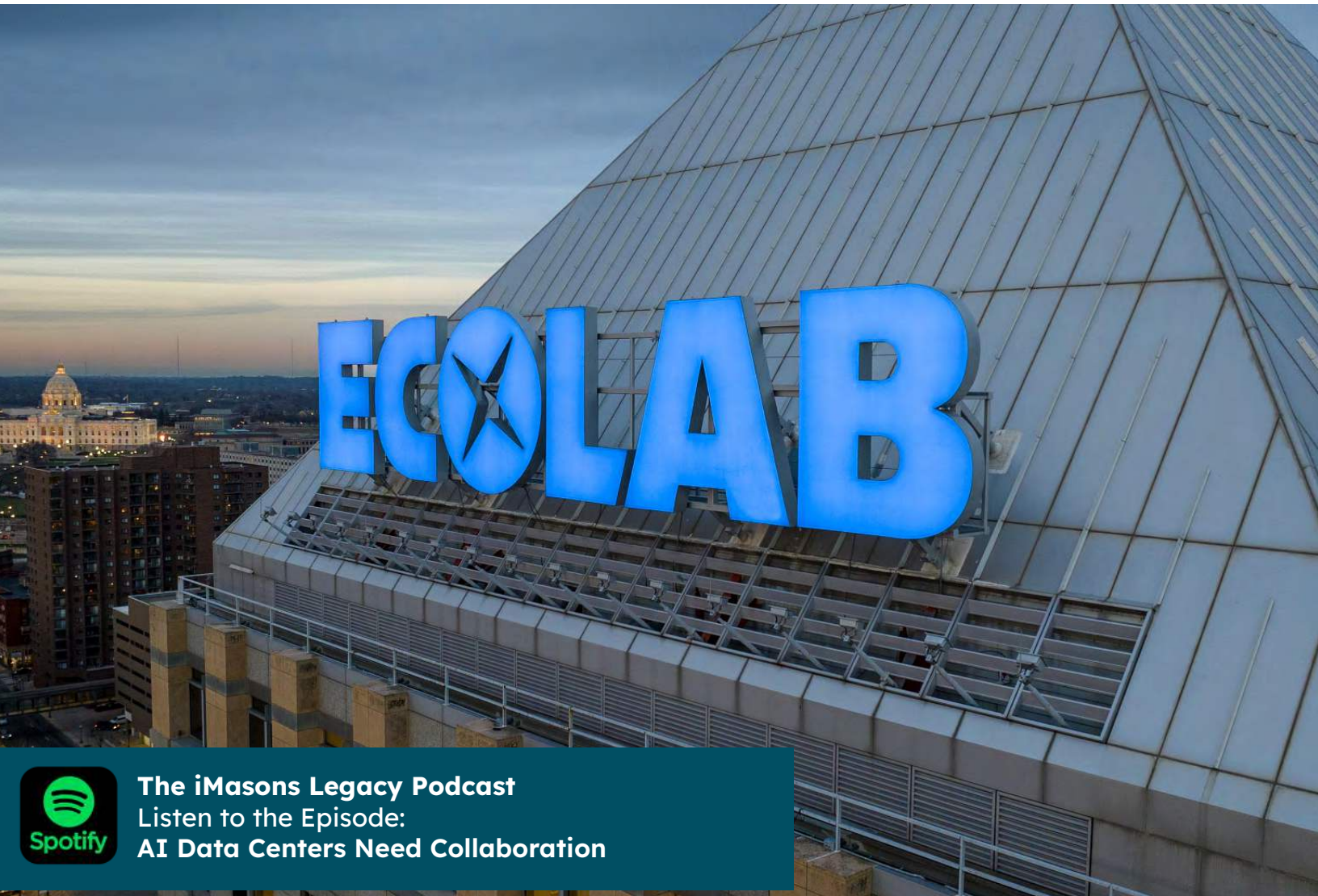
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Collaboration Needed to Meet AI Data Center Demand, Executives Say

The iMasons Legacy Podcast
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AI Data Centers Need Collaboration

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As the digital infrastructure industry races to build high-capacity data centers to support AI workloads, industry executives warn that missteps and miscalculations are putting operational efficiency, reliability, and long-term durability at risk.

That's because the pace of development exceeds the capacity of any one developer to think through each project decision from design to operation and maintenance.

The solution? Increased collaboration with outside specialists who bring expertise to individual pieces of the project puzzle.

For example, collaboration among developers, community members, and power and water service providers during the data center site selection and design stages can facilitate a comprehensive understanding of the local community, power grid and watershed that inform design decisions to maximize resource efficiency and sustainability.

"We should be having the conversation about what's the geography, what's the climate, what's the source of power generation, what are the available sources of water," said Michael Obradovitch, Global Area Vice President for Data Centers at Ecolab.

Obradovitch helps data centers manage water and cooling performance through programs and technologies developed by Nalco Water, an Ecolab company. Nalco Water is Ecolab's water management business, providing solutions for more than 40 industries.

"By taking a holistic approach," Obradovitch added, "you'll be able to land on the most sustainable solution for your data center."

Tapping External Experts

Digital Realty, a global developer and provider of carrier neutral data center solutions for hyperscale cloud providers and enterprise clients, leans on partnerships with specialists in everything from water and power to community relations as it races to keep up with the demand for AI.

"As much as we have experts in house, there's a lot of expertise that we need to tap into that's external to our organization," said Aaron Binkley, Vice President of Sustainability at Digital Realty. "These collaborations are really how we drive the most value as efficiently as possible."

Collaboration is also good for business, noted Santiago Suinaga, Chief Executive Officer of Infrastructure Masons (iMasons). Expert service providers such as Ecolab bring innovations and insights that maximize resource efficiency, avoid development roadblocks and prevent emergency shutdowns.

Collaboration can also yield benefits for the planet and communities, he added.

"If we get more efficiency on all fronts, including the water side and the power side, we ultimately make progress and balance on this rapid industry growth along with reducing carbon footprint and earn a positive perception for the industry," Suinaga said.
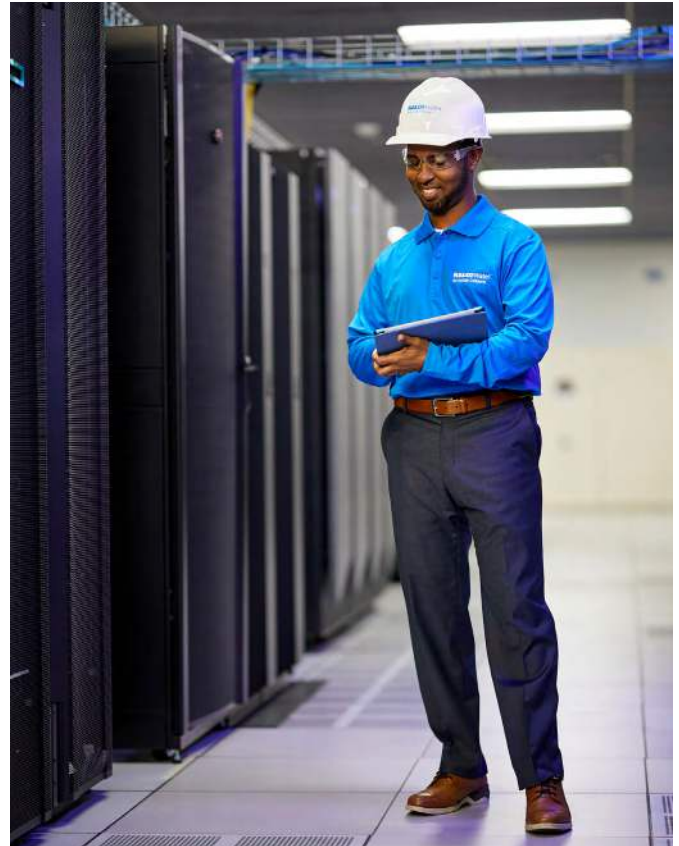
Photo courtesy of Ecolab

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'A Shared Resource'

The call for collaboration stems from a desire among stakeholders throughout the digital infrastructure ecosystem to keep up with the demand for AI data centers. Today, this means building data center campuses that consume as much power and water as a city large enough to support a professional football team. Such projects require teamwork across multiple stakeholders to achieve long-term success.

Ecolab, for example, takes a watershed view to project development to guide data center developers through the site selection and design phases. That's because most modern AI data centers rely on power sources that need water for electricity generation as well as for data center cooling, explained Emilio Tenuta, Chief Sustainability Officer at Ecolab.

"Water's a shared resource that needs to be thought about in terms of quantity and quality," he said, explaining his team consults with clients "on management of water within the power plant to deliver reliable power with less water, more efficiently, more reliably and with optimized cost. That then translates downstream to the data center that needs that power and is also relying on the same watershed for cooling."

Digital Realty has collaborated with Nalco Water and its parent company Ecolab for more than a decade on water chemistry, water use efficiency and water conservation to ensure reliable operation at its data centers around the world, noted Binkley.

The relationship started when Digital Realty turned to Ecolab for support on water chemistry to prevent scaling, corrosion and biofouling in the data center cooling systems. This grew to collaboration on water conservation, recycling and reuse, which helped create a culture of water stewardship within Digital Realty, Binkley said.

"A byproduct of this focus has been increased understanding that water is something we should be paying attention to," he explained. "Even small improvements, catching a small leak before it gets worse, can be powerful."

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AI-Driven Conservation

Today, Digital Realty is piloting an AI-driven water conservation solution from Ecolab in 35 of its U.S. data centers. The solution identifies real-time operational inefficiencies in cooling systems and recommends actions for improvement. Once fully implemented, it is expected to achieve a 15% reduction in water use.

The AI system shines at real-time detection of anomalies that are otherwise difficult to find, noted Binkley.

"It's not like, 'Oh, hey, we left the pump running all night,'" he said. "It's more like, 'Hey, there's a valve somewhere in the system that's not opening and closing properly, we're seeing incrementally more water use than we should be on a trending basis and we need to go find that.'"

The system also augments water solutions already implemented at data centers including water chemistry treatment programs, helping managers optimize chemical inputs to achieve desired outcomes with the minimum amount of chemicals necessary.

"Ecolab provides data centers with a comprehensive suite of solutions that supports the reliability and efficiency of these data centers," said Tenuta. "At the heart of it is smart water management through innovative technologies that we develop that not only optimize water use, reduce waste, but also enhance operational efficiency and reliability."

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Relationship Building

Photo courtesy of Ecolab

"We don't compete for the planet. On sustainability and efficiency, we are all on the same page."

— Santiago Suinaga, CEO of iMasons

The key to successful collaboration lies in teams working together to find real solutions to real problems, Binkley said.

Digital Realty's relationship with Ecolab started with real solutions to water scaling and equipment corrosion, which had a material impact on data center operations, he noted. As the companies got to know and trust each other, the relationship grew to the point where they now partner on cutting edge technology development.

"It's the next level of innovation and transformation and it allows us to continue on that best practice journey through the collaboration," Binkley said. "They know our buildings. We know them. They understand our operational practices. We understand their recommendations. And to bring in a new tool allows us to do that more, to continue that journey."

The collaboration between Ecolab and Digital Realty also yields innovations and solutions that benefit the entire digital infrastructure industry and aligns with the values of the iMasons community, noted Suinaga.

"We don't compete for the planet," he said. "On sustainability and efficiency, we are all on the same page."

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