Northern Ireland Electricity Networks Takes Its ADMS to the Next Level

An advanced distribution management system (ADMS) upgrade is an important technology investment that requires a clear business and operational vision, plus a partner who is dedicated to ensuring successful delivery on several fronts:

- **Impact.** Clear improvement in user experience, functions and features that users will notice and appreciate;
- **Solution Flexibility and Scalability.** Adaptable to unique customer needs and systems of all sizes, with modular optionality to address adjacent use cases and unlock additional value streams;
- **Reliable Implementation.** Timely delivery even when legacy system integration is required; and
- **World Class Delivery and Support.** Attention and fast response from delivery and product teams.

Northern Ireland Electricity Networks (NIE Networks) recently upgraded to version 2.3 of Oracle Utilities Network Management System (NMS) as its complete ADMS for both outage management and grid operations. As the owner of Northern Ireland's transmission and distribution system, NIE Networks provides electricity services to nearly 900,000 customers who purchase service through one of several competitive retailers.

A CHANGING GRID: NIE NETWORK'S UPGRADE JOURNEY

Over the past 10 years, NIE Networks has experienced a tremendous amount of change, driven primarily by the high growth of independently-owned renewable power generation at both the transmission and distribution levels. The high degree of wholesale renewable and distributed energy resource (DER) penetration has created operational challenges that were never foreseen back when NIE Networks last implemented an NMS upgrade. Equally important were the imperatives to ensure NIE Networks minimized customer outages and restoration times in an era of increasing customer expectations.

With one eye on the present and the other on the future, NIE Networks made the decision to upgrade its version of Oracle's Network Management System (NMS) solution as part of a larger grid technology investment program highlighted in a recent video posted to its corporate website. In the video, Aaron Watson, near time systems engineer at NIE Networks, explained that the company's recent NMS upgrade will ensure that the most up-to-date information on power cuts will be passed straight from site to customers either via the website or the contact center. The upgrade will also enable real-time power flow functionality, so that the network can be managed effectively and safely.

Value Realized in the Control Room and the Field

The NMS upgrade has allowed NIE Networks to maintain an overall trend of increased network reliability and improved restoration times, putting it on its way towards meeting its more stringent outage restoration targets: 90% of its customers within 180 minutes and 99% of its customers within 18 hours.

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"Our ADMS is a critical business system, during normal operations and bad weather," said Aaron Watson during an interview with Oracle Utilities. "One of the most important benefits of the upgrade was the creation of a solid foundation for implementing power flow functionality, especially as we are moving towards DER management." Moving to NMS 2.3 also provided NIE Networks with a "standard [network] model to get us into a place where we could start building on our data in the correct format to layer on new DMS applications," he added.

When asked how control room operators and field crews viewed the system upgrade, Watson replied, "some compliments actually, but most importantly, no complaints." When pressed further, he explained that grid operators, engineers and field crews are tough customers: "'No complaints' means that people are very happy."

NIE NETWORKS' UPGRADE JOURNEY

Overall, NIE Networks has been very pleased with its NMS 2.3 upgrade experience. The utility put in considerable work up front to clarify configuration specifications and functional requirements, and that hard work paid off. Technical workshops preceded the contracting phase, which saved time when it came to implementation. By virtue of its long-standing relationship with NIE Networks, the Oracle product and delivery teams had a good understanding of NIE's unique needs and past design decisions, which helped to plug gaps in NIE Networks' own institutional memory. "The experience and professionalism of the Oracle team has been excellent," Watson said. "Any time I have questions, I just ping them an email, and they are very quick at coming back." Watson also said that having Oracle delivery and support personnel based in the region was valuable and a "real plus for doing workshops" as needed.

Realizing the benefits of any major grid technology upgrade requires adaptation and process improvement, but with Oracle NMS 2.3, the results make those efforts worthwhile. "The challenge is to choose the correct, best data source to take, and ensure that there is a process in place to maintain that data, so that if someone goes out [and makes a change] to the line, say a 25 mm to 50 mm conductor [swap], then that change is logged," Watson said. The upgrade is complete, but the work of streamlining and realigning processes will continue for at least another year.

LOOKING AHEAD: MOBILE APP AND DER MANAGEMENT

NIE Networks also plans to deploy the Oracle Utilities Operations Mobile Application (OMA) to empower its field crews "to work directly with our network management IT system through the use of their mobile devices," Watson explained in the company video. The OMA mobile app, which integrates with NMS 2.3, will allow field crews to access the network model and the outage details in real time, so field crews can send outage progress information while they are on-site.

In addition, NIE Networks is working closely with the Oracle NMS team to scope out its DER management requirements to inform the utility's next phase of technology investment. Over the past 10 years, NIE Networks has seen massive growth of DERs as well as growth in renewable generation at the wholesale level. As a result, "[renewable] generation exceeds minimum summer demands," Watson said.

Staying Connected

As an NMS customer for over 20 years, NIE Networks sees considerable value from remaining close with Oracle and other NMS users through user conferences and conference calls, including a recent call on control room operations safety. "It's really helpful to learn from the experience of others," said Watson, who acknowledged that NIE was actually on the leading edge in the utility industry in areas like DER management.

NIE Networks also sees the importance of staying connected with its customers even in a deregulated market. The company wants its customers to understand that their distribution utility is using the latest technology to deliver "what matters most to our customers – safe and reliable service and the fastest possible restoration times," Watson said.

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