Customer Profile

Saline Water Conversion Corporation (SWCC)

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>
> ADEL M. ALSUBHI, EAM PROJECT MANAGER, SALINE WATER CONVERSION CORPORATION (SWCC)

About the organization.

If water became scarcer than oil, few nations could bear the consequences. But in Saudi Arabia, where oil abounds but water is scarce, life itself depends on the nation's ability to reliably create its own fresh water supply. Large scale seawater desalination is indispensable to the Kingdom. As a result, the nation's government-owned Saline Water Conversion Corporation (SWCC) is the world's top producer of desalinated water, producing 27% of the world's desalinated water from an assortment of 30 plants, 14 transmission systems, and 4,170 kilometers of pipeline. Every day SWCC supplies 3.5 million cubic meters of fresh water to residents of the Kingdom, along with 5,000 megawatts of electricity.

Oil has many substitutes, but fresh water is an irreplaceable commodity. The extensive desalination experience that SWCC has accumulated, along with the research it conducts through its Saline Water Desalination Research Institute (SWDRI), has driven continuous improvements in the science and worldwide practice of desalination, including methods for desalinating seawater more economically, rapidly, and at greater levels of purity. Experts from SWCC frequently present their findings on best practices in desalination at conferences around the world to help people in other nations address crucial water supply issues.

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Setting the strategy.

Desalination spans a variety of techniques, ranging from traditional Multi Effect Distillation (MED) plants, to complex multistage flash systems (MFS), to even more sophisticated reverse osmosis (RO) systems. SWCC employs all of these technologies, while simultaneously generating electricity for maximum energy efficiency.

The innovations that SWCC has pioneered since the Saudi government funded its first desalination projects in 1928 have powerful worldwide implications. Only 1% of worldwide water supplies are suitable for human consumption—97% of the world's water is in the oceans. The United Nations estimates that by 2025, more than 2.8 billion people worldwide will be living in areas threatened by extreme water shortages.

The cost and efficiency of large-scale desalination depends heavily on well-maintained equipment. Research conducted by SWCC shows that even after several decades of operation, well maintained desalination machinery can operate just as efficiently as newer equipment, or even more so. But the absence of a well managed maintenance program can lower desalination performance due to declining rates of heat transfer and from mineral deposits that scale and foul the system. An effective EAM program can lower costs and contribute directly to improved desalination performance by optimizing and reinforcing consistent, effective maintenance practices.

To improve the management of its extensive plant and equipment, SWCC developed an in-house asset management system in 1990. As time went on, and as the scope and size of the organization increased, SWCC found that a home-made solution would no longer suffice. Beyond the obvious functional and technical drawbacks of using a system that was 20 years out of date, the cost of supporting the old system was simply too high. The lack of any effective equipment history for SWCC's assets meant that estimating accuracy was poor. In addition, there was no way to integrate budget management into the system, no way to carry out predictive maintenance, and the system demanded huge amounts of paper work.

facts at a glance:

> organization	Saline Water Conversion Corporation
> solution	Infor EAM
> industry	Public Sector
> country	Saudi Arabia

Getting business specific.

Under the dynamic leadership and support of SWCC's governor Fehaid Al-Sharief, the organization launched an initiative to adopt the best global practices for maintenance and operation at SWCC plants, and to emphasize the importance of the e-TP (Electronic Transformation Program). Director Engineer Abdullah Alkheder launched the e-TP program by forming teams to apply business process reengineering (BPR) methodology in preparation for implementing the ERP Program. He suggested that SWCC make EAM an integral component of its comprehensive operational and financial management system. The earlier in-house solution lacked the capacity to interoperate with state of the art business systems and support optimal overall performance. "So we sat down with our maintenance managers from the various plants (at Khobar, Jeddah, and Shuqaiq) to work out what they wanted from the new system," says Adel M. Alsubhi, the EAM project manager for SWCC. "We also knew we needed automated procedures, real-time evaluation, management decision support, and self-improvement—in effect a new maintenance system that allowed access from anywhere at any time, at a low total cost of ownership."

After conducting business requirement sessions and a thorough solution survey analysis, the EAM project team identified the most highly regarded EAM solutions available and selected Infor EAM as the most effective application for the task. "Infor was simply the best choice for us; it was the right fit in terms of size and experience in

the utilities sector, the cost of implementation was low, and crucially, the availability of local support was on hand as well," says Alsubhi.

Integrating more than 135,000 pieces of equipment and training 300 users required an ambitious implementation schedule. The SWCC staff worked long hours and completed the task in only 3 months in the initial rollout at its Khobar plant, marking the fastest and largest implementation of Infor EAM in the Middle East. They immediately went on to complete similar implementations at the Jeddah and Shuqaiq plants.

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Seeing results.

Software migration often presents challenges, particularly when converting data from proprietary, in-house systems. Converting data into usable form for the target system is a critical, but time-consuming phase of the task. The six-member EAM project management staff at SWCC overcame the challenge successfully with the assistance of experts from Infor. "One implementation problem was the data; if the data is not ready to migrate to the new system, then the system won't work," says Alsubhi. "In this case, we spent a lot of time revising and uploading the data, and then Infor provided us with reports that helped us correct any errors that might have been made."

"Another issue we had was convincing some of our engineers and foremen—who might find it difficult to accept change—of the benefits of using such a technical system. Nowadays, however, if the system is interrupted for any reason, you will find that they are the first to complain."

The successful implementation at the first three SWCC locations led Mr. Alsubhi and his team to roll out Infor EAM throughout the other 27 plants that they manage. They also plan to apply Infor EAM to their network of pipelines as well. "With EAM, we can now manage the long-term maintenance of all of our assets—including turbines, our huge boilers, and other large pieces of equipment," says Alsubhi. "In the future, we plan to integrate EAM with our other solutions—such as the Oracle finance product—which will provide the end-user with powerful and relevant information at the touch of a button."

By leveraging Infor EAM to support more effective maintenance, integrate with other management systems, and analyze desalination performance history, SWCC positions itself for a future of continuous process improvement. Those improvements will undoubtedly yield countless future benefits to people in water-scarce regions around the world.

There is a better way.

At Infor, we work with a core belief. We believe in the customer. We believe that the customer is seeking a better, more collaborative relationship with its business software provider. And a new breed of business software: created for evolution, not revolution. Software that's simple to buy, easy to deploy and convenient to manage. Our 70,000 customers in more than 100 countries stand with us. We look forward to your sharing in the results of our belief. There is a better way. For additional information, visit www.infor.com.

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