

CLOSING THE GAP ON WATER SCARCITY

Water shortages could affect half the world's population by 2050 due to climate change, according to a UN report on the state of the world's water. Joseph Fay, Executive Global Supply Chain Leader, and Kristin Mortensen, Global Quality Leader at Suez, tell Dina Patel how they're using quality to protect resources and ecosystems

With industries becoming increasingly concerned about reducing the environmental impact of their activity, French-based utility company Suez is helping to recover sludge into renewable energy, reduce CO2 emissions, transform seawater into drinking water, decontaminate soils and promote biodiversity.

The quality team is heavily involved in product development and implementation through the maintenance of management systems and the application of business-process management methods such as Design for Six Sigma (DFSS) to ensure the organisation can provide a reliable product and service offering.

The history of the company dates back to the construction of the Suez Canal and the beginning of industrialisation in Europe. When the Suez Canal opened in 1869, it revolutionised world trade and became one of the world's most heavily used shipping lanes. It also sparked Suez's desire to participate in the beginning of industrialisation and influenced the organisation's name. The company has since brought together experienced professionals and advanced technologies to solve the world's most complex challenges related to water scarcity, quality, productivity, the environment and energy.

As experts in water and waste for 160 years, Suez is adopting innovative approaches and taking advantage of digital technologies to offer solutions such as real-time management of water and sanitation services, smart collection systems, and optimisation of energy consumption in factories.

The Suez boiler product application team, for example, optimised one water treatment programme so that industrial water users, such as refineries and power plants, could manage their process and yields more effectively without jeopardising their assets or risking reliability issues. Suez's 'TrueSense for Cooling' water treatment is another technology, used by industrial customers, that continuously measures and applies the right amount of chemistry for corrosion, deposit and microbiological control to improve cooling operations.

Resource revolution

Suez is committed to tackling the challenges associated with population growth. For example, it is providing drinkable water solutions, aiding the industrialisation of developing regions around the world and optimising existing technical solutions in the developed world. One of its core visions is to also lead the resource revolution, which includes providing access to clean water and sanitation to everyone on the planet. As a business to business (B2B) technology service and product provider, Suez strives to support its customers in the power generation industry, and the oil and gas, manufacturing, and food and beverage sectors, helping customers to make the change from a linear model that over-consumes resources, to a circular model that recycles and recovers them. ►

SUSTAINABILITY

In 2017, Suez acquired GE Water and Process Technologies, establishing its own industrial water activities in a new business unit – Suez Water Technologies and Solutions (WTS). The unit has the expertise to solve tough water and process challenges for its customers. It covers the entire water, wastewater and process value chain, including design and build projects, specialty chemical services, equipment and system offerings, outsourced services, and digital water management.

Joseph Fay, Executive Global Supply Chain Leader at Suez, one of 7,500 employees who moved from GE following the acquisition, says: “Jean-Louis Chaussade, the Suez CEO, made it abundantly clear on day one of the acquisition that it has been Suez’s wish to acquire GE Water and Process Technologies for a number of years, simply because we have many best-in-class technical solutions for tough-to-treat water and process challenges. We also lead the market in many areas, both in terms of advanced equipment and chemical-based treatment solutions. We very much feel like we’ve found a good home and our new parent company values everything that we do.”

The acquisition has also provided Suez with a bigger market presence in North America, where the WTS business unit is headquartered. “Approximately half of the WTS footprint is focused in North America so that was a huge appeal for Suez. I think it would be very fair to say that previously Suez was very focused in Europe. Even though there are tens of thousands of employees, the business mostly existed in France and the UK.”

The company continues to grow in developing areas of Latin America, parts of Asia Pacific, and the Middle East. “Places that have historically had a lighter touch on regulations are now very much coming in line with European- and US-style regulatory control,” Fay says.

Lean thinking

With a background in chemicals, working in research and development, quality, and process and manufacturing, Fay hopes to continue to evolve the business unit with better, brighter, and smarter technologies. He explains: “My team is located all over the world with over 14 manufacturing sites that constantly look to apply Lean and other continuous improvement methods to operate in a reliable and productive way. I often joke that I have a 500-plus strong team but almost none of them are here by my side, they’re based at our manufacturing operations or on the road



Above: Kristin Mortensen, Global Quality Leader at Suez (left) and Joseph Fay, Executive Global Supply Chain Leader

Right: Suez’s ZeeWeed ultrafiltration hollow-fiber membranes technology is used at California’s American Canyon wastewater treatment plant to produce high quality effluent (liquid waste or sewage discharged into a river or the sea)



servicing the customer through services such as our specialised ChemSure deliveries (a fleet of more than 110 vehicles and 40 experienced chemical delivery specialists, certified to deliver chemical solutions). One part of my team takes new innovative molecules and formulations that come from our technology group and develops methodology to a stage where we can scale them to produce and provide a technical solution for our customers.”

Suez Water Technologies and Solutions’ vision is to deliver revolutionary solutions for the toughest water and process challenges in a connected world. “I describe my role as providing seamless execution throughout the supply chain, working behind the scenes to remove obstacles from a lot of other functions – principally the commercial team because if we succeed, then our customers will feel the added value. A key part of what we’ve driven in the team focuses on Lean Six Sigma, operational excellence and driving a culture of continuous improvement.”

Fay’s knowledge of the Lean Six Sigma methodology, from his background of initiating and developing programmes in a supply chain environment, allows him to keep many plates spinning. “I find that we can tackle the toughest of problems if you’ve got a good foundation and a structured and methodical way of tackling it. Six Sigma is very data driven and looks at minimising variation,

and Lean thinking comes with an approach of simplifying things and cleaning out unnecessary process steps. I believe the two complement each other very well. Lean thinking offers great practical solutions to a lot of manufacturing and shop floor problems. Six Sigma can also focus on fulfilment and ensuring consistent product quality around the world,” Fay adds.

Managing a global supply chain

Part of Fay’s role is developing and implementing global supply chain strategies. He does this by incorporating a collaborative approach with all the stakeholders. Fay says mid-term planning is crucial as it is important that everyone is aware of what the business unit will be doing not just the following year, but over the coming five years and beyond.

“One thing we have learned is that you need to invest the appropriate resources in the optimum location if you want to be successful. Some of that requires a detailed engineering solution, but much of it is based around having the right people, with the right skills in place, who are powered with pride in what they do,” Fay says. He adds that clear communication is important for the team as they are located in different countries with different regulatory environments and this has an effect on how Suez >



he understands quality, and this makes my job easier. He oversees everything from product quality and all of the issues down to the specific properties of our products that are delivered to our customers.”

Mortensen’s current objectives include making sure she is working with all the business leaders at Suez following the acquisition, to ensure the company is maintaining high quality standards, merging best practices and ensuring the customers are not affected by the acquisition. “We’re always trying to improve,” she says. “One example of this is our customer issue tracking systems. We want to make sure we have a continual feedback loop from our customers and that we’re addressing any issues, whether it’s with product quality or our processes. There’s a hunger for more data so that you can make data-based decisions and intelligently predict the future. We’re always striving to do better, provide more visibility to everybody, from leadership to our operators.”

The problem with merging businesses and data, Mortensen argues, is re-establishing trends across different business segments and different geographies. “How do I pull all of those systems together to ensure that we understand what is really happening and that we are being proactive, not reactionary to business and customer needs? Having data is one thing, but what we do with it and

operates in that location. The business unit has one single enterprise resource planning (ERP) system which Fay explains provides greater transparency and visibility. “Having just one global ERP platform ensures we manage transactions across the value chain in a consistent manner, be it commercial and customer activity, manufacturing and fulfilment operations or product lifecycle management. Efficiency is also measured through key performance indicators. However, health, safety and compliance are always our main priority,” Fay says.

Data quality

Kristin Mortensen has an important role as Global Quality Leader at Suez. It is her responsibility to ensure the quality management system is operating and that the company maintains its compliance to ISO 9001:2015. Currently, her team is working on bringing together the GE and Suez quality management systems to define what the vision for Suez Water Technologies and Solutions will be.

Mortensen says: “My world includes dealing with ISO certification and Suez’s quality management system, and of course working with all the different departments to improve their operations. For example, I help Joseph with quality within his plants, ensuring his operations are running as efficiently as possible and that standards are maintained and improved. When we recognise a need for improvement, we engage our Six Sigma team. I have the luxury of working at a company where quality is ingrained in our DNA – it affects all of our operations. As you can tell from talking to Joseph,

how we make it meaningful is critical. It’s a challenge because we have a diverse product and customer range. We work within the power generation, hydrocarbon, chemical and water-treatment sectors as well as microelectronics, healthcare, food and beverage industries and more. You name it, [and] we have some kind of value-added product and service offering.

“We try to take complicated problems from the customer and drive clean, smart, simple solutions, but the biggest problem is trying not to get contaminated by that complexity. That’s a real challenge for my team – making sure we don’t complicate things for ourselves internally and that we focus on simple solutions that are right for the customer.”

A successful quality culture

“My top tip for a successful quality culture is to make sure that quality is appreciated and talked about at every level of the organisation. I’ve got some great executives like Joseph who live for quality, and that goes a long way with driving a quality culture,” Mortensen says.

Fay explains that the acquisition has added more knowledge and expertise to Suez. “We’ve got a lot of strength and depth, I would say, in the people and the knowledge that we have within this business unit. I’m humbled every day to be surrounded by incredible talent. Culturally, we’ve also gone through a lot of change, but we strive to move in the same direction. The world is tightening its control of natural resources and we as a business

need to provide world-class solutions to this problem.”

Fay says quality is inherently built into Suez’s product offering right from the development phase through to manufacturing, execution and operation. “An example of this,” he says, “would be our product, CrudePLUS. A North American refinery was experiencing significant penalties due to critical heat transfer equipment fouling [fouling is the deposition and accumulation of unwanted materials]. CrudePLUS was used to help the refinery track and respond to any increase in fouling. It uses an oil fingerprinting device with powerful predictive analytics to provide rapid analysis of crude oils, oil blends, and other hydrocarbon fluids and provide guidance on potential actions and treatment applications to ensure the crude oil can be processed in a cleaner manner.”

Bringing more than 7,000 employees from GE into an already established business was not easy. Fay says that although the acquisition proved to be beneficial for both organisations, there were technical and cultural challenges. “The acquisition made us rethink how we approach quality management systems and other areas, including the environment, health and safety programmes, marketing, even how we organise our commercial and field teams,” Fay adds. “I think the great thing is that everybody is pulling in the same direction but we always have an attitude that there are endless opportunities to develop and improve internally in order to provide excellent value-added solutions for our customers.” ■

Suez monitors drinking water quality in real-time

Suez has designed AQUADVANCED Quality Monitoring to enhance the monitoring of drinking water quality in real time.

The product was developed to meet increasing regulatory stringency in water quality requirements, not just for municipalities, but also for employers and facility management companies.

The solution uses probes placed at strategic check points in the distribution network to make it possible to act quickly when a risk is confirmed.

For installations without a power supply, the solution comes with a self-powered power supply that provides electricity to the equipment.

The solution enables the targeted and continuous monitoring of sensitive areas or buildings, such as nurseries, schools, hospitals and retirement homes.

Left: The city of Abilene, Texas, uses Suez’s ZeeWeed ultrafiltration hollow-fiber membranes technology to treat any raw water to the quality needed

Right: Suez’s ZeeWeed technology at use in the Bedok NEWater Factory in Singapore

