Experience the commitment®

Vitens

Using big data to detect and remedy costly pipe leaks

Guaranteeing a reliable supply of drinking water to 5.5 million customers in the Netherlands is the job of the Vitens water supply company. Before flowing out of a customer's faucet, water is first purified at a production facility and then sent through thousands of kilometers of pipes. With the help of big data and predictive analytics, CGI has made it possible for Viten to detect and remedy leaks in these pipes more quickly and easily.

THE CHALLENGE

Pipe leaks present problems for customers and have a major impact on Vitens' operations. A leak can force customers to go hours without running water and require dozens of workers to be deployed to repair the leak. During what has come to be known as the "Leak of Leeuwarden" in March 2013, it took 3 hours and 30 workers to locate and address a massive leak. To resolve incidents like these more efficiently and to simplify the maintenance of 96 water production facilities and 49,000 kilometers of pipes, Vitens has a great deal of data at its disposal that can be put to use. The question is how.

THE SOLUTION

CGI proposed the use of big data and predictive analytics to address pipe leaks and improve overall maintenance. Workshops involving a multidisciplinary team of Vitens and CGI professionals were first conducted to study the details of real-world leaks, such as the Leak of Leeuwarden. Next, CGI developed a proof of concept solution. Data on variables such as pressure, flow, temperature, conductivity, physical location of the pipe network and land registration were loaded into our big data lab and analyzed by a data scientist and domain expert. Using predictive analytics and visualization software, we searched for data patterns that could be used to detect or predict incidents.

"By working together on this project with experts from both our company and from CGI, we achieved outstanding results. Thanks to their expertise with big data and their hands-on approach, CGI helped us 'fix the leak.'"

Erik Driessen, Innovation Manager at Vitens

CASE STUDY

WATER PURIFICATION

Water supply companies in Europe invest 20 billion euros annually to maintain the reliability of their networks. Substantial cost savings can be achieved by using big data and predictive analytics to detect leaks.

BIG DATA AND PREDICTIVE ANALYTICS

By converting data into information and patterns, big data and predictive analytics enable you to learn from previous experience so that you can predict future behavior and make better decisions.

THE RESULTS

The approach of the multidisciplinary team from Vitens and CGI made it possible to detect leaks within a 2.5 kilometer radius in 50 percent of cases. This demonstrated that, by using big data and predictive analytics, leaks can be detected and repaired faster. As a result, damage caused by leaks can be minimized, and customers can be assisted more promptly when incidents occur. With this new model, Vitens is expected to save millions of euros, prevent interruptions in the supply of water and eventually be able to diagnose and repair leaks before they actually occur.

WHY CGI?

CGI has taken a lead role in the use of big data and predictive analytics. We strongly believe in the profitable opportunities that large volumes of information can generate for businesses. Water supply companies in Europe invest 20 billion euros each year to keep their networks up to date, and substantial cost savings can be achieved by leveraging big data and predictive analytics to detect leaks and maintain these networks. We work with clients to turn these opportunities into reality, driving performance and results from big data.

About CGI
With 68,000 professionals operating in 400 offices in 40 countries, CGI fosters local accountability for client success while bringing global delivery capabilities to clients' front doors. Founded in 1976, CGI applies a disciplined delivery approach that has achieved an industry-leading track record of on time, on-budget projects. Our high-quality business consulting, systems integration and outsourcing services help clients leverage current investments while adopting new technology and business strategies that achieve both top and bottom line results. As a demonstration of our commitment, our average client satisfaction score for the past 10 years has measured consistently higher than 9 out of 10. For more information, visit www.cgi.com.

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