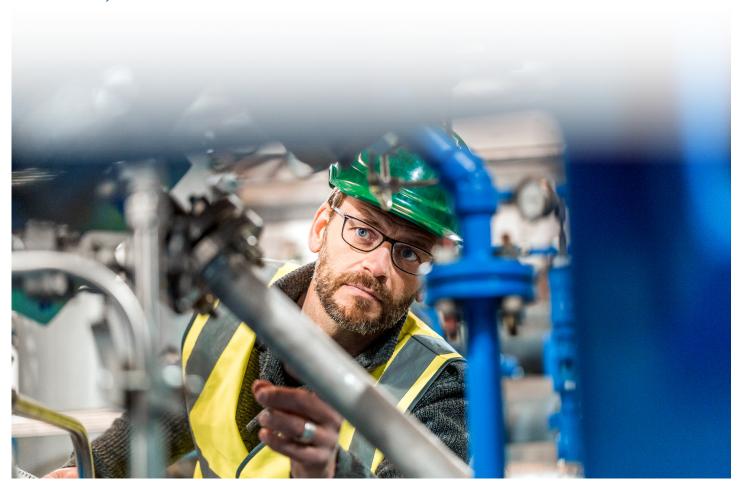# Intelligent data analytics
for fraud detection

For Spanish utility company, Madrileña Red De Gas, intelligent analytics have dramatically boosted fraud detection rates and reduced non-technical losses.

Across Europe, non-technical losses cost gas companies an estimated €1,300 million every year. Non-technical loss sounds like a dry accounting term: the reality is that it is theft by dishonest consumers. Regional utility services company, Madrileña Red De Gas, decided to fight back using the latest in data analytics with Atos Codex. They have radically improved detection, turning hit rates on fraudsters from 5% to 30% success in less than 12 months .

Madrileña
RED DE GAS

Atos
Codex

> "Gas fraud is not straightforward, and until now detection has often depended more on luck than science. Our new analytics tools have changed the rules in our favor. It gets even better: with every round of analytics, these cognitive tools get smarter meaning that intelligence and success improve continuously."

Glen Lancastle
CIO and COO, Madrileña Red De Gas

Background

In just six years, Madrileña Red De Gas has become a leading regional player in Spain, with around 5.6 thousand kilometers of distribution pipe and some 850 thousand customers. When Madrileña Red De Gas took over the network, there were indications of unaccounted consumption, particularly amongst domestic and small enterprise customers. Without the extensive historical records of longer-established providers, Madrileña Red De Gas asked how advances in data analysis and the Internet-of-Things could be applied to the production of accurate and actionable data on non-technical losses. Most importantly, the new intelligence would need to ensure that the field teams paid to track down suspect usage could radically improve the success of local inspection.

Teams, technologies and skills

The initiative would need access to skills and technology resources from extended team of experts. Choosing a business technology partner required more than simply identifying a company with demonstrable expertise in data analytics. Madrileña Red De Gas chose to work with Atos. Glen Lancastle, CIO and COO, explains why. "There are numerous IT companies with strong analytics capabilities, but for us it was essential to identify a partner that would work well with our own experts. Success would depend on the chosen supplier being able to learn from our gas-sector professionals, with an easy and reciprocal exchange of expertise in practical analytics. It was clear from the start that Atos had a willingness and culture of active collaboration."

Models and machines

The ability to combine Madrileña Red De Gas sector expertise with Atos analytics skills and resources was key to the success of the initiative. Working with usage data provided by their client, Atos used the advanced Atos Codex frameworks to design and build the set of algorithms needed to deliver the initial analysis.

Atos also provided the high-performance computing power required to process the analysis, giving the Madrileña Red De Gas energy recovery team the data on which they would execute their first sweep of fraud suspects.

The first wave of action already showed a startling improvement. While the "pre-analytics" fraud inspections resulted in positive identification rates as low as 5%, with the new cognitive approach, this rose immediately to 20%.

> "With Atos, we have done more than challenge and redress the very real problem of non-technical losses. Atos Codex has proved its value as a foundation for future analytics-driven business. In 2016 we jointly presented this initiative at Utilities Week, and look forward to ensuring that our experience can be shared to the benefit of utility companies worldwide."

Glen Lancastle
CIO and COO, Madrileña Red De Gas

Continuous, and improved fraudster profiling

The analytics process is continuous. The results of the first round of application are fed back for the second cycle, ensuring that results and tools are continuously refined for ever-better results. This iterative cycle of analysis is handled by the Atos Codex data scientists to deliver clear client benefit.

With the second wave of inspection, for example, Madrileña Red De Gas raised the hit rate, taking it from 20% to 30%. Since partnering on this new analytic approach to fraud detection, however, Madrileña Red De Gas have done more than increase their success rate.

Data analytics from Atos Codex has also revealed intelligence that would otherwise have remained hidden. They have shown, for example, that contrary to general perception, fraud is not linked directly to energy poverty. Detached houses, for example, with higher income householders, have been shown to have some of the highest rates of fraud.