



# Influencing Human Behaviour

A 90% INCREASE IN THE AWARENESS OF THE IMPORTANCE OF REDUCING PEAK CONSUMPTION WAS ACHIEVED THROUGH THE POWER OF SERIOUS GAMING AND INNOVATIVE TECHNOLOGY.

This was the first pilot project of its kind and just a starting point for Vitens. New initiatives are in preparation to continue these new and exciting trials that will help the utility understand how to maintain the new and desirable behaviour.



## CHALLENGE

*Use technology and video gaming to influence human behaviour*

## SOLUTION

*Run a three-month trial to reduce gamers' water consumption*

## REACH FARTHER

*Develop initiatives to increase consumer awareness of water usage*

## The future of water consumption in the Netherlands

Vitens is the biggest drinking water company in the Netherlands and annually they deliver 350 million m<sup>3</sup> of water through 100 water treatment plants and 49,000 km of water mains. Being a leader within the water industry brings with it great responsibility and for this reason, Vitens began thinking outside the box of how best to influence human behaviour and whether it could reduce peak usage within their network, which in turn would safe-guard the lifespan of their infrastructure.

## Challenge: Can next generation tech and serious gaming influence human behaviour?

Vitens wanted to see whether they could influence human behaviour through the use of innovative technology and serious gaming. Another key factor for the utility was to understand the power of the younger generations; once they learned a behaviour would they be able to teach it to older generations? This aspect of the trial would also help Vitens further develop in-depth customer engagement which is an invaluable asset to have for the continuous evolution of a brand.



## During the trial, there was a 14-21% reduction in the energy used to supply water in peak times!

The more technical aspect of the utility's challenge was the need to identify and flatten the peaks in the network during key times. Achieving this would also allow them to improve network sizing which in turn would allow them to increase the overall efficiency. If Vitens used smart water sensors, the data they transferred within the network would allow them to understand the technical requirements surrounding water flow / demand needed in order to help influence customer mind-set and behaviour. The underlying challenge Vitens faced was to use their position as industry leaders to set the example for other utilities, but also to provide a genuine positive change in society and maintain the low levels of non-revenue water the Netherlands has.

### **Solution: A 3 month trial to change how consumers use water**

As a possible solution, Vitens decided to carry out a trial over a 3 month period with 180 participants. Their data would be collected by smart meters and transferred to the gaming server by the FlexNet® Radio system. The key difference with any other trial that has previously been undertaken is that the utility was using the power of gaming to influence human behaviour and ultimately change how consumers used water. The game was focused at younger generations as it is thought they are more concerned with environmental and sustainable matters,

and would consequently teach other generations in an effective manner.

Using innovative technology throughout their water networks, Vitens' smart grid consisted of 300 sensors, across 9000km of infrastructure with a dedicated IT infrastructure and state of the art control room. The trial was carried out in the City of Leeuwarden in northern Holland, that Vitens coined 'Vitens Innovations Playground'. Sensus provided smart meters and the FlexNet® communications infrastructure to read the meters every 15 minutes, providing a granular record of water usage. It was hoped that the accurate and detailed data would help Vitens not only track any change in consumer behaviour, but also give the utility further information on peak usage times within the network and how they could change the consumer-side demand. This solution was one like no other, combining social innovation of The Water Battle game and next generation smart technology to ultimately educate younger generations who would then educate parents and peers alike.

### **Success: The results from the 3 month trial utilising The Water Battle game**

Aside from the overarching need to educate the younger generations in the hope they would pass on their learnings to both older and future generations, Vitens wanted to see what results could

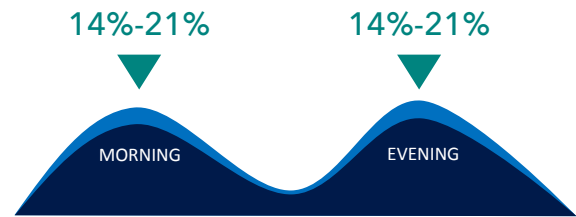


be achieved by thinking outside of the box. By making a game whose main aim was to educate children in a fun way about what happened when water was misused, Vitens got some great results. Not only did 83% of participants indicate that they had a better insight into their own water consumption, but the awareness of the importance of reducing peak consumption increased from 40% to 90%. Another important aim the utility had, was to improve network sizing and peak usage, to safe-guard the infrastructure and the health of the water in the network. During the trial, there was a 14-21% reduction in the energy used to supply water in the morning and evenings, and 7% reduction of water usage in those peak times as well. For Vitens, a 7% reduction in water consumption relates to 23 million cubic meters per year!

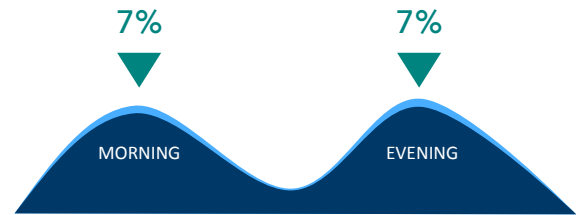
Well formed partnerships show that next generation smart technology and the power of gaming truly can change the world we live in.

The FlexNet® Network is deployed and operated by Entropia in the Netherlands and Smart Meters are supplied by Brink, the Sensus distributor.

### Energy to produce and supply water



### Water consumption



### Results in numbers

#### ABOUT SENSUS

*Sensus, a Xylem brand, helps water utilities, energy providers and cities do more with their infrastructure to improve quality of life in their communities. We enable our customers to reach farther by responding to evolving business needs with innovation in communications technologies, advanced metrology, data analytics and services.*