

# SAVORTEX® Smart Hand Dryers



**Company:** SAVORTEX Ltd

**Innovative business model type:** Service systems

**Sector:** Electrical

**Size:** Micro

**Service:** Design, manufacture and supply the *EcoCurve™* energy saving and smart hand dryer range

## Key Facts

- Based in the UK, SAVORTEX is an award winning British Green Technology Manufacturer and Internet of Things (IoT) Company.
- SAVORTEX has developed a range of energy saving, smart hand dryers, which deliver energy and waste savings, alert cleaners to washroom needs, and engage consumers with tailored, high-definition video messages.
- SAVORTEX's aim is to provide its clients with significant reductions in waste, energy and resource efficiency.
- Working with REBus helped to create a business case which demonstrated the environmental, financial and business opportunities of the hand dryer.

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## Introduction

SAVORTEX is a Technology Strategy Board-funded, British green technology manufacturer and Internet of Things (IoT) company which has put British manufacturing, innovation and low energy digital brushless-motor technology to use to create the EcoCurve™ energy saving and smart hand dryer range.

The company services organisations that focus on sustainability, including Rolls Royce, Royal Bank of Scotland, Shell, Honda, Carillion Plc., British Airways and Marriott Hotels. It's technology helps clients benefit from significant savings in cost, energy and waste.

## Vision

Of the 70 million washrooms globally, c. 20% are equipped with hand dryers. Collectively this produces 9.2 million tonnes of CO<sub>2</sub> and costs businesses £1.75 billion a year. The remaining c. 80% offer paper towels which annually generate 3 million tonnes of waste, and cost landlords £10.5bn.

SAVORTEX wants to replace costly, unsustainable paper towels with smart hand-dryers. Built on Intel® technology, the SAVORTEX adDryer uses the Internet of Things to deliver energy and waste savings, alert cleaners to washroom needs based on actual footfall, and engage consumers with tailored, high-definition video messages.

## Resource efficient business models for energy saving efficiency (REBM)

The driver for developing a REBM was to help corporate clients, such as Total Fitness and the British Library, to transform their wasteful and costly washrooms into connected, hygienic and sustainable, revenue-producing assets.

SAVORTEX chose Intel® Atom™ processors to power its hand-dryers because they offer strong performance yet are very energy efficient. The company's energy-efficient hand-dryer delivers quick-dry in 11 seconds and runs on just 550 watts, which is significantly lower than competitor products in the marketplace.

Thanks to hardware from Intel, the adDryer engages users with one-to-one, high definition video messages which enable enterprises to use real data to push content and drive additional revenue streams.

SAVORTEX's view on corporate messages was environmentally-focussed. This general awareness raising is a value adding feature of having an interactive LCD display.

“Our goal is to transform wasteful corporate washrooms into connected, hygienic and sustainable revenue-producing assets.”

*Syed Ahmed, Director and Founder, SAVORTEX Ltd*

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## What would success look like?

SAVORTEX was aiming to provide its clients with significant reductions in waste, energy and resource efficiency. They want to create revenue-sharing business models in washroom facilities.

Indications of success included:

- Evidence-based data to demonstrate that the adDryer significantly reduces paper towel waste by up-to 97%.
- Environmentally-focused messaging raising employees general level of awareness around company environmental targets and savings.
- Demonstration of the concept of revenue share, which has a predicted rapid pay back for organisations using the adDryer.

## Challenges

During implementation, the greatest challenge was ensuring data connectivity. Old building-design often prevented data transfer, critical to the success of the adDryer. This was overcome by working with an industrial grade SIM card supplier to allow wireless data exchange through old structures.

Additional challenges included:

- Ingrained issues: high costs, inefficient maintenance, and energy consumption in washrooms make them difficult to manage. As a result, SAVORTEX wanted to create a solution that solves multiple problems at once;
- Excessive waste: SAVORTEX wanted to find a green alternative to prevalent and expensive paper towels; and
- Status quo: conventional brushed-motor hand-dryers are energy-hungry and have a short life expectancy making them costly to run, but finding budget to deploy new solutions on the necessary scale can be difficult.

## Why REBus?

SAVORTEX was keen to demonstrate that IoT enabled products can drive transformational business models for a sustainable and resource-efficient economy.

The aim of the pilot was to create an evidence-based business case to demonstrate that switching to the revolutionary SAVORTEX adDryer hand dryer would provide customers with verifiable environmental, financial and business opportunities.

## REBus support

REBus offered the right platform, i.e. waste and cost savings and resource efficiency movement to engage the customer.

The connections and networks available through REBus enabled SAVORTEX to pitch its concept, benefits and pilot to companies directly. Messages were shaped around environmental and financial benefits, which led to two successful pilots and subsequently additional contract sign-ups.



*The hand dryer alerts cleaners to washroom needs, records washroom-specific energy consumption and footfall data, all in real-time.*

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## Results

The success of this project was based on the data collected on site. With a footfall of 6m per annum through-out 17 sites, the adDryer™ demonstrated:

- 5,083,680 activations and generated potential advertising revenues and savings of £1,147,160 per year. This delivers a payback of eight months for a capital investment of £71,398; and
- In addition to the waste and cost savings the technology delivers, the SAVORTEX EcoCurve 550A has a lifespan of 20,000 hours and industry leading seven year parts warranty.

## The British Library experience

The British Library had an annual spend on dry cleaning and replacing linen towels of £22,202. These included existing dryers with a power rating almost three times worse than that of the adDryer, making an immediate reduction in energy use of 66%. As a result, the British Library ran a two-month trial of the adDryer.

On average, 115 video adverts were displayed on screen each day. adDryers used 115 times each day over 348 days would cost £390.08 per annum, which is a potential operational cost saving of £20,124.72 per year, with a nine-month payback period.

Based on the same advert activation data as that collected during the trial, the British Library could generate total revenues of £261,128.58 per annum. Encouraging clients to use SAVORTEX hand dryers over paper towels, or outdated inefficient hand dryers creates demand for SAVORTEX 's highly efficient products.

## Next steps

Since the pilot, SAVORTEX has secured a full roll-out of the technology to corporate washroom facilities globally with multinational corporations. In August 2016, they secured a contract with Wates, one of the UK's leading construction and property services companies.

In 2016, SAVORTEX announced that it won the Manufacturing MX award for Manufacturing Services and further plans to implement further REBMs projects, extending the existing scheme into Europe.

## Lessons learned

It was clear early on that connectivity throughout the estate was a crucial factor in capturing accurate data. Future projects would benefit from an advanced site survey to ascertain the connectivity available on site from the start.

## Advice to others

“SAVORTEX would highly recommend evidence based pilot projects to create meaningful case studies to achieve strategic business objectives”

*Syed Ahmed, Director and Founder, SAVORTEX Ltd*

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REBus is a project delivered in partnership with:



Rijkswaterstaat  
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KTN  
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Case studies were generated as a result of pilots carried out for REBus by WRAP or RWS and the named organisations from 2013 to 2016.

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