


# Sensera Limited

## IP Commercialisation - Market Update



“Microfabrication & MEMS for the  
next generation of healthcare,  
industrial and defense  
applications”

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# About Sensera



# Sensera Market Strategy



## 1. High performance MEMS partner

Revenue generating with two anchor contracts in place and four additional customers

Located in heart of Boston biotech and technology hub close to major customers

Growing pipeline of 30+ companies

Highly efficient MEMS design + wafer fabrication facility with manufacturing infrastructure supporting US\$40m annual revenue

Embedded in process locks clients to long term relationships and revenue

Experienced team with extensive network to facilitate sales

## 2. Intellectual Property commercialisation

Team with broad global experience and track record of commercialising MEMS technologies

Leverage internal capability of team of engineers, designers and know-how

State of the art facilities to develop own products with US\$10m+ invested to date providing estimated 3 year barrier to competition

**Ability to produce its own intellectual property matching solutions to market need**

Several potential products in the pipeline, and acquisition candidates magnifies opportunity

# First Internal IP Project “Towakon”



# Towakon - Water Saving Device



## The Water Drip Problem

- Slow drips waste up to 75 litres of water per day
- Water leaks of just 1 drop per second (0.3ml) can waste 10,000 litres per year
- In an apartment building of 400 units each with one drip per second leak = >USD20,000 wasted per year.
- In a 3 bathroom home you could save hundreds of dollars per year.

## The Sensera Solution -“Towakon”

- Uses sensing expertise to detect ultra low leak rates of 1 drip per second
- Initial application is a water conservation product that will be a wireless connected technology that notifies of ultra low leaks and initiates auto shutoff on overflow
- Patent pending low leak detection technology is unique to the industry



# Case Study - Residential

## Water Rates

- For the average<sup>2</sup>American family of four, water rates in the USA range from 0.108 cents to 0.718 cents per litre

## Home/apartment toilet leaks

- Average leak is 37,854 litres per year (USD40 to USD270 per year)
- 2,700 litres/day typical (caused by typical leaky flapper)
  - Wasted water = 312,000 litres/year for single toilet
  - Cost = USD88 to USD586 per month
- Average insurance cost for overflow event > USD5,000 to insurance companies after homeowner pays typical deductible of USD1,000.

## Towakon Solution

- Home owner alerted of the leak (text or email)
- Corrective actions can be taken
  - Repair leak
  - Automatic turn off of water supply



## Towakon Financial Benefit

- Annual Savings of USD1,000 to USD6,000 per continuously leaking toilet
- Eliminate risk of high damage cost from runaway overflow

# Towakon Features

## Communicates with your cell phone or the internet

Stay connected with the status of your home appliance. Is your toilet running and you don't know about it? Look it up on your mobile phone.



## Detects continuous flow situations and warns you by audio, email or text

Audible alarm for overflow. Your toilet will email you if an emergency overflow occurs.



## Autonomous emergency shutoff capability

Can be configured to shut down the water supply to your toilet if a run away situation is detected. Your protector is at home.



## Self powered – no electrical hookup required

Ingenuous design derives power from water flow and requires no AC voltage.



## Detects low leakages of 1 drop per second & less

Patent pending technology allows the detection of leaks as low as 0.3ml per second! This can result in 10,000 litres per year. In an apartment building of 400 units this can mean USD20,000 per year and the cost of water is rising every year as it becomes more scarce and expensive to supply.



## Detects leaky flapper valve

Sometimes you don't even know your toilet flapper is leaking, but it is causing you to lose hundreds of litres of water.



## Standard wrench to install or install by hand if your toilet connection is compatible.

Inserts between the supply valve and your toilet by hand!





# Planned Design Options



Model	Battery	Generator*	Cutoff valve	Alarm	Bluetooth	Wifi	Function
Basic	X		X				Turns off water if toilet continuously runs
Basic +	X		X	X			As above and sounds audible alarm
Home enthusiast		X	X	X	X		As above and reports leak rates to cell phone app
Professional Superintendent walkaround		X	X	X	X		As above B2B version of above, superintendent walks around bldg. to query toilets
Professional Cloud Connected		X	X	X	X	X	B2B or consumer – capable of pushing information out over the internet to end user or management console computer

\*Generator version has rechargeable battery

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Least Expensive

Most Expensive

9

# Towakon - Status



## Project Status

- Manual prototype completed
- Miniaturisation of prototype underway
- Patent pending technology
- Q4 2017 - Finish prototype including full connectivity
- Q1 2018 - Commence marketing trials within relevant markets

## Commercialisation Model

- Sensera applies sensor engineering expertise and microfabrication know how to develop and enhance innovative technologies and products
- Q4 2018 - Seek Corporate Partners for Towakon
- Multiple channels therefore one or more partners - e.g. Hotel and Hospitality, plumbing service and supply, building management, insurance companies and connected home

# Why hasn't this been done before?

- Historically fresh water has not been expensive, now it is becoming a scarce global resource. **This will be the resource crisis of the 21<sup>st</sup> century.**
- The development of rapid prototyping equipment in conjunction with new low power wireless embedded technology leveraged off of the personal health technology industry – in 2016 a computer and wireless interface cost less than \$5. The drop in prices of enabling technology like 3D printing has allowed rapid development.
- The Towakon Invention uses a transformation of a previously undetectable event into a measurable phenomenon resulting in the ability to measure one drop per second.

