

BOTS

THOUGHTS ON LIFE & TIMES

Saving money, saving earth

A passion for climate change sparked an innovative idea in an entrepreneur to come up with a smart energy consumption solution for buildings, writes Izwan Ismail

BUILDINGS consume a lot of energy from the use of air-conditioners, lights and other equipment. Can these be controlled and managed for better energy consumption?

This was on Saikrishnan Ranganathan's mind when he and his business partner, Max Pagel, decided to set up SensorFlow, an energy management and smart home automation start-up.

THE BEGINNING

The former Goldman Sachs engineer says the ideas for the system came from his previous jobs.

He relates how he had the opportunity to lead the re-engineering project team on its trading clearing platform, helping it to improve two-fold the platform's per-

formance across global markets.

Saikrishnan then moved to Intraix, a local start-up in Singapore involved in the development of low-cost energy management systems for the residential market.

"I was their technical lead and in charge of building a smart home platform, where multiple devices share data securely with each other, allowing users to make better decisions. I gained knowledge on smart automation market and technologies before deciding to pit my skills against a global problem: climate change."

He has always had a passion for helping people with technology.

"Even early on in my education, I have been exploring how technology can address the needs of the masses. During my university days, I developed mobile

applications to help my peers solve common challenges," says Saikrishnan.

For example, when he realised that his peers were having issues with getting transport and managing their finances, he developed two mobile apps.

The first was a bill-splitting app, MoneySlate, which works on all devices and all operating systems.

The second was a transport app called SMILE, which allowed users to share their location in real time with their booked taxis so that they could be picked up.

"Ultimately, I believe in innovating and leveraging technology to resolve a need. In particular, I have a keen interest in the IoT (Internet of Things) because it improves our ability to collect and communicate data across multiple systems.

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SensorFlow goes with the flow

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CREATING SENSORFLOW

In 2016, Saikrishnan met Pagel at an entrepreneurial programme in Singapore.

"Max and I had a common goal of combating climate change. We developed SensorFlow with the shared vision of making smart buildings a reality, by retrofitting every building with technology to automate decision-making and to improve energy and operational efficiency," he says.

Saikrishnan, who is CEO, says the hospitality industry will benefit from the smart solution. The goal, he adds, is to help hoteliers reduce their energy consumption, optimise their operational efficiency and achieve sustainability goals with SensorFlow's smart automation solution.

"Electricity can account for 60 per cent of all utility expenditure. Hotels are finding it difficult to go green as many green solutions carry high upfront costs."

However, Saikrishnan says, most travellers are willing to pay more for green hotels.

"Many travellers look for hotels that implement sustainability measures. These eco-conscious millennials make up more than 50 per cent of travellers."

OPTIMISING ENERGY

In helping hoteliers, what SensorFlow's solution does is monitor, analyse and automate room environments to optimise energy and operational efficiency.

To enable all this, IoT, AI (artificial intelligence) and big data are used.

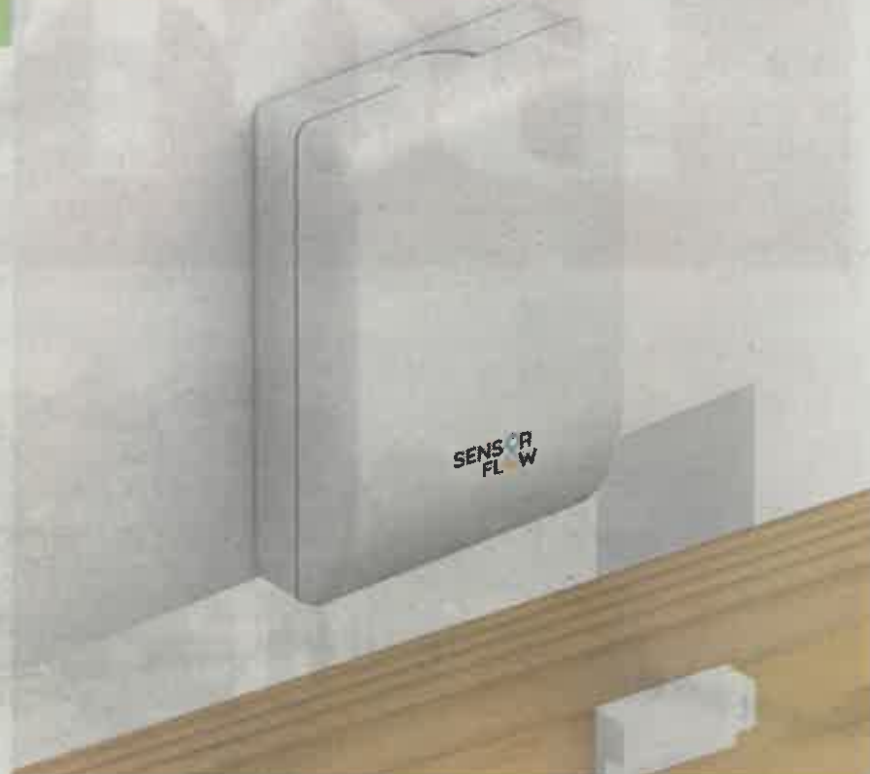
"Based on the information we collect, we help hotels improve operational efficiency and productivity," says Saikrishnan.

"Buildings account for almost a third of global energy consumption and global carbon emissions. Saikrishnan adds that while hotels, residential and commercial buildings are the biggest victims of poor energy efficiency, they are resistant to change as they have small operation expenditure budgets.

"Solutions are not only costly but also disruptive to install.

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Saikrishnan Ranganathan



SensorFlow uses AI to automatically switch off the air conditioner.

"So, in response, we developed an IoT solution that enables any building on any budget to optimise its energy consumption with no operational disruptions," he adds.

HOW IT WORKS

The solution involves installing wireless sensors that communicate and interact with each other via IoT technology.

"As the sensors work on our proprietary radio network, a single gateway can connect to over hundreds of sensors across multiple floors and can continue room automation even if the WiFi is down," says Saikrishnan.

When guests leave the room empty with the air-conditioner running, the SensorFlow occupancy sensors and smart thermostats communicate this data to the gateway.

"The gateway, which is the 'brain' of our automation engine, then uses AI to automatically switch off the air-conditioner, without the need for manual intervention from hotel staff.

"If guests leave the room with the air-conditioner running and the pool/balcony doors or windows are open, it is then auto-

matically switched to fan mode to ensure proper ventilation and prevent condensation issues, while saving energy.

"When our sensors detect that guests have returned, our gateway automatically resets the air-conditioner to the guests' settings," he adds.

With IoT, the solution can also continuously collect information on how much energy is being used by every room via wireless flow meters and energy metres.

"Data is then sent to our online dashboard for the hotels to see, providing them with high-level trends and insights to help them make decisions to improve not only their energy efficiency but operational efficiency and guest satisfaction as well," says Saikrishnan.

For example, insights from occupancy data trends can help hotels optimise housekeeping routes, and plan events and food and beverage promotions for improved guest experience and maximum guest spend.

"We are in the middle of discussions with several 5-star hotels in Malaysia. We expect to move forward with a number of these."



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