



PHOTO: YEN MENG JIN

# KEEPING YOUR COOL WHILE CUTTING COSTS

*Poyan Rajamand (above), CEO of Barghest Building Performance, shares how his startup has been helping Singapore companies save millions of dollars in energy costs simply by fine-tuning aircon systems using data analytics.*

AS TOLD TO VIVIEN SHIAO

## WHAT IS YOUR STARTUP ABOUT?

At the heart of it, Barghest Building Performance's (BBP) energy efficiency solution is focused on enhancing the sustainability of heating, ventilation and air conditioning (HVAC) systems to make this existing infrastructure more cost effective and environmentally responsible.

Data analytics and engineering lies at the heart of our solution. Our system uses a combination of proprietary software, customised engineering, and equipment which allows us to apply advanced analytics and continuously improve the efficiency of cooling systems. Over time, this technology and our comprehensive asset management services are able to lower the energy consumption in commercial and industrial building by up to 40 per cent.

This may sound like a mundane concept, but consider the big picture: HVAC systems represent approximately half the total energy usage in commercial real estate developments, and they are the second-largest electricity consumers in the industrial sector. For something so ubiquitous,

these systems are extremely energy-intensive; and there is a huge opportunity to make older systems more environmentally sustainable and to realise substantial cost savings.

While companies heavily rely on HVAC systems, the reality is that this excessive consumption is completely at odds with their business objectives for two reasons: intensive electricity usage is costly, and corporations and their employees care more than ever about their impact on the environment. Despite the clear incentives for improvement, companies are often limited by the significant cost and disruption caused by replacing inefficient legacy infrastructure with new environmentally friendly systems.

To put that into perspective, we can reduce a commercial real estate customer's energy consumption by S\$100,000 to S\$300,000 annually, and savings for a factory can range from S\$300,000 to S\$3 million annually. And of course this reduces the impact on the environment.

The BBP team recognises the opportunity that this presents, and has developed an innovative and business model that makes it possible for companies to improve the environmental sustainability of their existing systems without the need for substantial upfront capital.

First, our software and hardware package can be installed on any existing systems to tackle this issue. And second, we have evolved our business model to eliminate upfront costs by offering a subscription model wherein we share a portion of the annual energy cost savings that are realised by customers using our system. This model, which is based on third party verified energy savings, makes us competitive and creates a win-win scenario for our customers.

## HOW DID YOU COME UP WITH THE IDEA?

BBP's chief financial officer En-Ping Ong and I are both passionate about sustainability, and I think that is what really connected us early on.

After graduating from university, En-Ping and I held jobs in the finance and real estate sectors, but continued to seek out opportunities that combined our industry knowledge with our interest in addressing global environmental challenges. Singapore's effort in energy efficiency has gained international recognition. We had observed that the National Environment Agency (NEA) had been driving energy efficiency initiatives focused on industrial buildings for some time. And in the building sector, the national smart building movement has gained much momentum driven by the goal set by Building and Construction Authority (BCA) of greening 80 per cent of Singapore's buildings by 2030.

Through our sector experiences, we

understood that HVAC systems are the most energy-intensive systems of industrial and commercial buildings, and we saw an opportunity to provide an important solution that supports the BCA's cause. This led us to establish BBP at this pivotal time, as Singapore's efforts in energy efficiency gained momentum and international recognition.

Today, BBP has been accredited by national government bodies such as the Infocomm Media Development Authority (IMDA) and NEA, in addition to the BCA.

## WHAT ARE SOME OF YOUR LATEST DEVELOPMENTS?

2018 was a pivotal year for BBP. We raised S\$45 million from KKR, a leading global investment firm with a track record of investing in businesses that focus on positive environmental impact, for regional expansion. This has enabled us to achieve our growth goals faster than initially planned.

We are now focused on growing our presence in Asia as we continue to attract interest from both forward-thinking regional players and some of the top Fortune 500 companies who are seeking to implement our technology across their regional operations. We currently have more than 50 employees serving customers across eight geographies, including China, Indonesia, Malaysia, India, Taiwan, Singapore and Thailand. We are also working to expand into additional new markets.

We will also continue investing in R&D and technology, which is the foundation of our success. We have made significant investments in advanced analytics resulting in improved control of our systems. As an example, since 2017, we have worked with SAS to augment our advanced analytics capabilities, enabling us to gain deeper insights, adopt innovations to improve performance of our systems, and efficiently maintain systems – all in real-time. These innovations have allowed us to further optimise our customers' equipment and help them achieve up to millions of dollars in cost savings.

And lastly, we have continued evolving our customer offerings in order to drive new business and meet a diversity of customer needs – we now offer our solution on a yearly subscription basis, eliminating the need for upfront investment costs by prospective customers.

## WHAT ARE YOUR PROUDEST ACHIEVEMENTS?

I think our proudest achievement is realising the vision that we established early on: we knew that designing a solution to improve energy efficiency in existing systems could be a significant undertaking with lasting impact. Now, we are seeing these efforts come to fruition.

Since BBP's incorporation, we have also made tremendous progress developing innovative technology and implementing it for the benefit of our customers and society. We have been humbled to achieve several industry and national awards and accolades, including in 2018 recognition on the first-ever APAC 25 list, being



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awarded IFMA Singapore's FM Technology Provider of the Year, and honourable mention recipient for Best Practices at the 2017 and 2018 EENP Awards.

Additionally, receiving the backing of a high-calibre global investor such as KKR last year is a great recognition of the opportunity in front of us – and it provides us with more resources to achieve our expansion goals. We are excited to further grow BBP and deliver even greater solutions addressing environmental challenges to the international business community.

## WHAT ARE SOME OF YOUR BIGGEST CHALLENGES AND HOW DID YOU OVERCOME THEM?

Developing specialised solutions for customers across international markets comes with an array of challenges. We now fully understand the need to carefully think through our technology offerings, go-to-market strategy and use of information technology (IT) as we plan our expansion.

Continuous investment in IT helps us navigate these challenges. By implementing innovative technologies, we are able to remotely monitor our installations, drive customer engagements, evaluate performance and offer servicing support from Singapore. Today, interconnected intelligent buildings from across the region provide important data to our local experts. We work with SAS to apply advanced analytics to evaluate this data, enabling increasingly customised solutions which optimise the performance of buildings.

## WHAT ARE YOUR PLANS FOR THE FUTURE?

In addition to continuing our work with a growing number of clients in Singapore, we are very excited to scale our business in the Asia-Pacific and worldwide. We have benefited from a first-mover advantage in Asia, and will leverage our resources and analytical capabilities to provide differentiated solutions to industrial companies.

This is both an advantageous and important time to grow our business. We foresee greater implementation of green regulations, such as Singapore's carbon tax, and a move towards sustainable development goals globally, including those outlined by the United Nations.

Companies that not only comply with but exceed environmental standards will be best placed for success in the long term. Because of the environmental and economic motivations for businesses to adapt more sustainable practices, we feel that we provide a unique win-win solution.

## HOW DO YOU ENVISION THE FUTURE OF YOUR INDUSTRY?

Looking at the competitive landscape, we see a shift to data-driven insights to meet evolving customer needs, placing an increased need for solution providers to create value through implementing truly meaningful insights that drive actual change.

Notably, our current offerings have positioned us to capitalise on these industry shifts as clients switch from an energy-monitoring solution to a solution-oriented one. Instead of monitoring parameters, we harness the actual site data to devise and continuously improve the algorithms in our control systems, reducing overall energy consumption.

Our technology-enabled system is designed to make active, informed choices to change operational parameters and thus save energy for our clients in a highly efficient manner. This is backed by our dedication to the highest quality service standards.

The energy efficiency marketplace is poised for significant growth, driven by increased global commitment to reducing greenhouse gas emissions, and thus, increased corporate demand for our services.

Moving forward, advanced analytics will take on an even greater role in helping industry players gain a deeper understanding of client needs, optimise systems, and stay at the forefront of the industry. ■

## ▲ COST EFFECTIVE

*The BBP team has developed an innovative and business model that makes it possible for companies to improve the environmental sustainability of their existing systems*