800 SUPER HOLDINGS

Super ways to handle waste

800 Super's approach of making the most of its own waste has helped it to expand. This is complemented by its innovation and productivity initiatives which go beyond internal recycling.

GREEN energy, laundry, and plastic bag production may not seem the most obvious activities for a waste management company. Behind these moves by 800 Super Holdings, however, is the core idea of not letting things go to waste – as these new areas are fed by the firm's existing businesses.

800 Super started out in 1986 providing waste collection services to commercial and industry clients, and later the construction industry. In the 1990s, it went into contract cleaning services as well.

In 2010, it was one of the winners of the annual Enterprise 50 awards organised by *The Business Times* and KPMG, which honour Singapore's 50 most enterprising privately-held local companies.

The next year, 800 Super listed on the Catalist board of the Singapore Exchange. Says chief executive officer William Lee: "Our profile totally changed."

Before, when 800 Super branded itself as an "environmental solutions provider", it drew comments from detractors, he recalls. "People said, 'No, you're just a waste disposal company, why do you call yourself that?'"

With 800 Super's listing and its accompanying professionalisation, attitudes towards the firm have changed: "They no longer look at us as a waste management company. They look at us as a listed company."

NOTHING GOES TO WASTE

800 Super's activities have also expanded beyond traditional waste management territory. Its new integrated development at Tuas includes a depot for its vehicles, a biomass energy plant, a sludge incinerator, and an industrial laundry.

What makes this facility "integrated" is that each activity supports another. As Mr Lee puts it: "From one point, we supply to another point, and all this has been linked up."

The idea originated when he learnt that laundry services require a lot of steam, with energy accounting for 40 to 50 per cent of a laundry provider's total costs.

Mr Lee wondered if he could somehow find a source of steam first, and then start a laundry. In a happy coincidence, the PUB had just called a tender for a sludge treatment plant, which would produce steam as a byproduct of the treatment process.

How could this treatment plant be powered? 800 Super's landscaping business generates a considerable amount of wood waste, which must be disposed of – and can thus fuel electricity generation.

Since early 2018, 800 Super's biomass plant has been running at its Tuas site. It powers everything on site, including its own operations.

The plant is currently at 60 per cent capacity, handling 90 tonnes of wood waste a day, but this is expected to increase when the laundry plant begins operations. The sludge incinerator, in turn, has been up and running since May 2018, processing 280 tonnes a day or about half its capacity.

The easy approach would have been to build it under an engineering, procurement and construction project, where a contractor would handle everything, says Mr Lee. Instead, 800 Super chose to do its own procurement, "put everything together, and learn about it".

The steam generated by the plant will be used in the upcoming laundry facility at an "ideal temperature" of 200 degrees Celsius, which traditional boilers in industrial laundries cannot achieve, notes Mr Lee.

When 800 Super acquired Iwash Laundry in 2017, the Senoko-based business was relatively labour-intensive and conventional. In contrast, the second Iwash Laundry facility in Tuas will feature a massive tunnel that can wash a tonne or two of laundry at once.

A hydraulic press will remove water for recycling. Unwashed and washed laundry will be transported by conveyor belts instead of by hand, and RFID tags will track the items.

The laundry is expected to be ready by the end of 2018, and will handle some 40 tonnes a day.

800 Super's approach of making the most of its own waste has taken it abroad as well, with the establishment of a plastic recycling plant in Batam in 2017.

This plant recycles the plastic that 800 Super collects in its waste management business, producing resin for sale to manufacturers, particularly in China. Since 2018, the plant has also been producing trash bags from the recycled plastic – for use in 800 Super's integrated public cleaning contracts.

Explaining 800 Super's efforts to capitalise on the byproducts of its operations, Mr Lee candidly says: "It's all about the bottom line."

At 800 Super's integrated Tuas facility, different business activities feed into each other so that nothing goes to waste, says CEO William Lee.

BT PHOTO: KHALID BABA

Of course, the firm's innovation and productivity initiatives go beyond such internal recycling. For instance, its latest public cleaning contract for Pasir Ris-Bedok, which began in July 2018 and runs till 2025, features a range of technologies.

These include real-time operation monitoring, powered not by conventional GPS systems but by RFID tags on the trucks and bins. This allows 800 Super to ensure that the bins are properly emptied and that trucks are not simply making the rounds without thoroughly performing their duties.

Bin centres also feature real-time monitoring of waste levels, with alerts sent when this hits 75 per cent.

"Before this started, I wasn't so confident," admits Mr Lee. The firm had tried similar systems in the past but found them inaccurate. Fortunately, technology has since matured: "With the more advanced technology now, the accuracy is almost 99 per cent."

The monitoring system helps 800 Super improve its service levels, avoiding situations where bin centres reach full capacity before the trash is cleared, says Mr Lee. "We don't have to wait for the town council or contractor to call us."

A self-reporting management system benefits their client, the National Environment Agency, as well. Workers take photographs of sites, providing real-time updates. Feedback goes into the system as well, along with follow-ups and updates. This is much more efficient than before, says Mr Lee, when a flurry of phone calls would have been needed.

And around October or so, a new collection truck will start making the rounds in Bedok. With two compartments, one for recyclables and one for garden waste, both types of waste can be collected by the same truck during a single trip and two different trucks will no longer be needed.

DRIVING TRANSFORMATION

Indeed, innovative vehicles are a major driver of 800 Super's transformation. One early move was bringing in an Italian Cappellotto truck in 2015, to clear silt from drains.

Using conventional methods, such a job requires 10 to 15 men, about 12 days, and multiple vehicles including a vacuum truck, a jetting truck to flush out the train, and a water truck to supply the latter.

The all-in-one Cappellotto truck sucks up silt and recycles the accompanying water for flushing, turning it into a two-man, three-day operation.

The catch: it costs S$1 million. As Mr Lee quips: "Not that easy to sign the contract!"

Despite the clear long-term advantages, small and medium-sized enterprises (SMEs) may quail at the upfront cost, he says. "When you come to this kind of huge investment, due to the cost, local SMEs may not make decisions – or rather, they wait for others."

Indeed, several months after 800 Super brought in the truck, a competitor ordered it as well.

Handling such a valuable piece of equipment also makes the operators "feel very proud", says Mr Lee; a sentiment which 800 Super encourages when training them to handle the vehicle. "We let them feel special, rather than 'just' being a lorry driver."

Another special vehicle is currently being trialled in the Ang Mo Kio-Toa Payoh sector, for collecting recyclables. Also from Europe, the side-loading truck is able to handle 2,200-litre bins instead of the smaller 660-litre ones that were previously used, allowing for a reduced collection frequency.

With the bins being handled by a robotic arm controlled from within the cab, collecting recyclables is now a one-man show, down from the previously-required three-man team.

In today's manpower-scarce conditions, companies must go labour-lean and make the remaining jobs attractive. This is why 800 Super aims to transform the nature of jobs, from manual work to monitoring and handling machines, says Mr Lee. By training workers and improving their skills, the company will also be able to justify higher salaries.

"With this kind of technology, you will attract more people to join you," he adds. Workers will enjoy learning new skills and having new experiences: "Some of them, they never even dreamed that one day they could control a robot."

Manpower considerations – at a different level – were also the main intention of 800 Super's listing, he reveals: "The main thing is to attract talent."

The firm has barely tapped the benefits of access to the capital markets. Instead, becoming a listed company has burnished its attractiveness as an employer, Mr Lee says candidly: "We can get younger people to join us."

And getting young blood was crucial for the building of the company's IT team and innovation capabilities. As he puts it: "You ask me about refuse collection, yes, I can tell you ... But when you talk about technology, we still need some professionals."

Today, 800 Super's public waste collection team and integrated public cleaning team are mainly in their 30s. Says Mr Lee: "During the old days, honestly, if you wanted to get (people of) this kind of age to join you – unlikely."

Transforming with the times has allowed the company to both retain veterans and gain newcomers. As he sums up: "So we have the new team coming in with better knowledge, better technologies, better ideas. At the same time we have our old blood with all the experience throughout the twenty-over years that we have been doing this."

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– 800 Super CEO William Lee on transforming with the times

This April, Balbant Singh started driving the side-loading recycling collection truck, covering the Ang Mo Kio-Toa Payoh sector. He can do his rounds in the recycling truck without having to leave his seat.

BT PHOTO: YEN MENG JIIN

High-tech truck makes one-man show possible

FROM his seat in the truck's cabin, Balbant Singh, 61, pays careful attention to the digital screens and camera feeds beside him. Outside, a large metal claw lowers from the side of the truck, prongs adjusting to grip the nearby recycling bin.

The bin is lifted into the air, emptied into the truck, and deposited back down – completing the job without anyone having to be on the ground.

This is in contrast to the conventional recycling collection method, which involves a rear-loading truck, one driver, and two other workers to push the recycling bins to the back of the truck for emptying.

Of his current collection round, Mr Singh says: "This is a one-man-show." The senior driver has worked for 800 Super Holdings since 2006.

Previously, he drove a 10-wheeler refuse collection truck, equipped with a hydraulic hooklift arm.

In April 2018, Mr Singh started driving the side-loading recycling collection truck instead, covering the Ang Mo Kio-Toa Payoh sector. This is part of a year-long trial under the National Environment Agency's industry transformation map for the environmental services sector.

"I feel better with this one," says Mr Singh. "Everything is controlled from inside – you don't have to come down."

Alhough the refuse truck's arm was similarly controlled from within the cabin, Mr Singh still had to get out of the truck and down to the ground in order to release the hydraulic pipe.

In contrast, he can do his rounds in the recycling truck without having to leave his seat.

The refuse truck's arm was also more straightforwardly mechanical, guided by Mr Singh's manoeuvring. The controls for the side-loading recycling truck are "a bit more complicated", he says. It took him about a month to learn how to drive this new vehicle, including on-the-job training.

Yet he does receive assistance while driving – from the truck's computer system and sensors.

Two cameras monitor the claw, ensuring that its prongs line up correctly with the small handles on either side of the recycling bin. A third camera detects a white line painted down the front of each bin, ensuring that it is not off-centre.

If the bin is not hooked up properly, the truck's system will stop the lifting process.

The system can also tell whether the arm's prongs are calibrated to the correct size for the bins that it is handling, and will seek confirmation from the driver if there appears to be a discrepancy.

Mr Singh appreciates the advanced nature of the side-loading collection truck, in contrast to the previous truck he was driving: "This one is more high-tech ... It shows you the lines to follow, so you can adjust."