

CASE STUDY

Beaver Energy

Automating Everyday Services in Singapore

How a Singapore-based provider of 24/7 self-service machines turns labour-light automation into a franchise-ready business model.

Product lines covered

Car Wash Machine | Helmet Cleaner Machine

Squeeze Me Apple Juice Machine | Car Mat Cleaning Machine

SECTION 1

Executive Summary

Beaver Energy is a Singapore-headquartered provider of commercial-grade, self-service automated machines. Its range spans vehicle care and food and beverage: a car wash machine, a helmet cleaner machine, a car mat cleaning machine and the "Squeeze Me" fresh apple juice vending machine. Each product is built around the same idea: a customer pays, uses a machine that largely runs itself, and an owner earns revenue around the clock with minimal staff supervision.

This case study examines how Beaver positions that idea as both a customer convenience and a business opportunity. It reviews the company's background, the market conditions it is responding to, each product's design and value proposition, the partnership and franchise model, and the factors that will decide whether a given deployment succeeds.

4	24/7	90 sec	3 min
machine product lines	designed operating model	apple juice per cup	car mat cleaning cycle

Key findings

- **Labour-light by design.** Every machine is described as operating independently with minimal staff assistance, which directly addresses the manpower cost pressures that Beaver highlights in the Singapore market.
- **Fast, standardised service cycles.** Cycle times range from 90 seconds (juice) to 3 minutes (car mats) to 8 minutes (helmets), which suits short, convenient visits.
- **Location is the main commercial lever.** Beaver repeatedly points to high-footfall sites such as HDB and office car parks, petrol stations, transport hubs, gyms, hospitals and EV charging locations.
- **Three routes to market.** Franchise, machine sales and machine rental are all mentioned, supported by training, location recommendation and after-sales support.
- **Evidence gap.** The public material does not publish customer case results, installed-base numbers or financial returns, so any return on investment must be modelled by the prospective owner.

How to read this document

Everything attributed to Beaver Energy comes from its public website and articles. Where this document goes beyond that material (for example, theoretical throughput arithmetic or an evaluation framework), it is labelled as analysis, not as company data.

SECTION 2

Company Background

Powered by innovation: advancing everyday services through automation

Beaver Energy describes itself as a trusted automated solutions provider headquartered in Singapore, delivering self-service machines for modern environments. The brand message on its homepage is "One Machine, Countless Possibilities," and the company frames its offer as a smarter, simpler way of living and doing business: start your smart living and business with automation.

The company's range "offers various services ranging from serving fresh beverages to automobile cleaning." That spread across two quite different categories is notable. Vehicle care and fresh juice share little in customer need, yet they share an operating logic: short, repeatable transactions, cashless payment, a compact footprint and demand that clusters in busy places.

Mission and vision

Statement	Content
Mission	To enhance everyday services with innovative, reliable and sustainable self-service solutions for convenience and efficiency.
Vision	To be the global leader in self-service technology, driving industry standards and inspiring trust through a commitment to quality, innovation and sustainability.

The three brand promises

Promise	What the company says
Reliable	Uses advanced technology and operates independently with minimal staff supervision.
Convenient	Operates 24/7, allowing customers to visit anytime they want.
Commercial-grade	Designed for heavy-duty use and suited to high-traffic locations serving a wide range of customers.

Contact and channels

Beaver lists general enquiries at contact@beaverenergy.com.sg, sales enquiries at sales@beaverenergy.com.sg and a phone line at +65 8188 0781. It maintains active social presences on Facebook, Instagram, TikTok and YouTube, and publishes regular articles on market trends, which serves a dual purpose: customer education and search visibility.

Observation

The mission statement leans on three words, innovative, reliable and sustainable. The product pages back this up with specific features (water-saving technology on the car wash, low-temperature drying on the helmet cleaner, no added sugar on the juice), although the sustainability claims are not accompanied by published measurements.

SECTION 3

Market Context and Business Challenge

Why self-service automation is gaining ground in Singapore

Beaver's recent articles are a useful window into how the company reads the market. Three themes recur: a tight labour market, a changing vehicle fleet, and shifts in consumer health and hygiene behaviour. Each theme maps onto a product line.

Theme 1: Manpower pressure

Beaver notes that it can be difficult for businesses to find and keep suitable, reliable employees, and that hiring and retention create cost pressure in labour-intensive operations. Its argument is that self-service operating systems reduce the number of tasks a business has to staff. It describes four mechanisms:

- **Shift tasks to customers.** At a self-service car wash, customers use the water jet and foam themselves, unlike traditional services where employees clean the car.
- **Automate routine operations.** Payment collection, service activation and basic operating processes are handled by the machine, reducing human error.
- **Redirect human labour.** Staff focus on maintenance, cleaning, restocking and troubleshooting instead of repetitive transactions, and can rotate between multiple sites.
- **Extend operating hours.** A traditional business needs multi-shift staffing and late-night payroll to run around the clock; a machine does not, subject to site and regulatory requirements.

Theme 2: Electric vehicles and new locations

Beaver points to rising electric vehicle use in Singapore, driven by national sustainability goals and expanding charging infrastructure. It cites the government's stated aim of deploying 60,000 EV charging points by 2030. Its reasoning is that EV owners may spend longer at a charging site than petrol drivers spend refuelling, creating a window to wash a car in the same trip. The company is careful to add that not every charging location will suit a machine, and that space, accessibility, visibility, water supply and site operating requirements all matter.

Theme 3: Delivery riders and helmet hygiene

Motorcycles play an important role in food and parcel delivery. Riders may wear helmets for hours at a time, and in Singapore's hot and humid weather, sweat can build up inside, creating conditions where bacteria and fungi may grow. Rain can leave helmets damp. Riders have limited time between jobs to wash and dry a helmet properly. Beaver positions a helmet sanitiser as a faster and more consistent alternative to manual cleaning, placed where riders already stop: petrol stations, car parks, rider lounges, fleet depots, convenience stores and food courts.

Theme 4: Healthier drink choices

Beaver also links its juice machine to a broader preference for beverages lower in sugar and to consumers who are more health-conscious and choose healthier drinks over sugary sodas. The Squeeze Me machine makes juice on demand from real apples, with no added sugar, preservatives or concentrate, according to the product page.

From market signals to product fit

Market signal	Customer problem	Beaver response
Manpower cost and scarcity	Traditional car washing is costly and hard to staff	Self-service car wash and mat cleaner with minimal staff
EV growth and charging build-out	Drivers want to combine errands in one stop	Car wash positioned near high-traffic and charging sites
Delivery rider boom, humid climate	Helmets get sweaty and damp; little time to clean	8-minute helmet sanitiser, cashless, 24/7

Market signal	Customer problem	Beaver response
Health-conscious consumers	Packaged drinks seen as sugary or processed	90-second fresh apple juice, no added sugar
Interior hygiene awareness	Car mats collect dust and mud; manual scrubbing is slow	3-minute automatic mat cleaning cycle

Analysis

The strength of Beaver's market narrative is that each claim leads to a concrete product and a concrete location. The limitation is that the articles are marketing content: they use cautious language such as "may" and "could" throughout, and they do not quantify demand. Prospective owners should validate demand at their own shortlisted site before committing.

SECTION 4

Solution Portfolio Overview

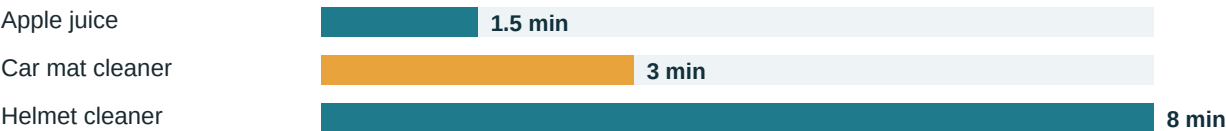
Four machines, one operating philosophy

The four machines share a consistent set of design principles: cashless payment, a guided touch or step-by-step interface, commercial-grade durability, and the ability to run unattended for long periods. The table below compares them on the specifications published on the Beaver website.

	Car Wash	Helmet Cleaner	Apple Juice	Car Mat Cleaner
Core service	Rinse, foam wash, vacuum, blow-dry	Clean, sanitise, deodorise, dry	Fresh pressed red or green apple juice	Wash, rinse and dry car mats
Cycle time	User-paced, with pause and resume	About 8 minutes	About 90 seconds	About 3 minutes
Key technology	Pressure jet, foam, blower, vacuum, water saving	360-degree UVC, ozone, heat drying, LED	Slow juicer, squeeze on demand	High-pressure water, detergent, brushes
Published price	Not published	S\$5 per cycle	Not published	S\$5 per 3-minute cycle
Payment	Cashless	Cashless	Cashless	Coin and cashless
Utilities	Water and power	Power and cleaning chemicals; no water supply	Not stated	Water and power (implied)
Target sites	HDB, office and industrial car parks	Transport hubs, gyms, workplaces, rider hubs	Gyms, offices, hospitals, malls, schools	Car wash sites, petrol stations, car parks

Table notes: details from the Beaver product pages. "Not published" means the figure is not on the website. The utilities entry for the car mat cleaner is an inference from the description of high-pressure water use.

Published or typical cycle time (minutes)



Shared design features

- Cashless payment:** mentioned on all four machine pages; the juice and helmet FAQs add that machines can be programmed to accept other currencies.
- Transparency:** the juice machine shows the preparation process on a display; the helmet cleaner has LED lighting for interior visibility.
- User guidance:** the car wash offers clear instructions and simple controls; the mat cleaner opens "like a car door" with no complicated controls.
- Safety for the item:** detergent on the car wash protects paint, the helmet detergent avoids damaging helmet quality, and the mat cleaner uses gentle professional brushes.

SECTION 5

Product Deep Dive: Car Wash Machine

A complete exterior and interior clean at a self-service bay

Beaver's car wash machine is designed for a complete car wash in Singapore, covering rinsing, cleaning, vacuuming and drying. The product page describes professional equipment for both exterior and interior work: a 360-degree movable water jet, automobile cleaning detergent, a blower and a vacuum, with water-saving technology intended to make it an environmentally responsible choice.

How the customer uses it

Step	Action	What the customer gets
1	Make a payment to start	Cashless, secure start of the session
2	Rinse the vehicle thoroughly with water	Loosens surface dirt using the high-pressure jet
3	Apply automobile foam	Exterior cleaning with commercial detergent
4	Wash hands or cloth at the washing bay	Hands-on finishing at the customer's pace
5	Vacuum the interior	Removes interior dust and debris
6	Dry with the high-powered blower	Finishes the exterior

Smart features

- **Professional equipment:** high-pressure jet, foam and blower outside; vacuum inside.
- **Commercial automobile detergent:** chosen to maintain paint quality and finish.
- **Pause and resume:** lets the user adjust at any point and wash at their own pace.
- **Cashless payment:** a smooth experience without handling coins.

Benefits to the owner

Benefit	Description from Beaver
Low staffing requirement	Operates with minimal human assistance, reducing labour costs
Additional revenue stream	Designed to operate long hours, generating revenue 24/7
Eco-friendly	Water-saving technology conserves water
User-friendly	Step-by-step guidance through the wash cycle

Positioning insight

Beaver notes that the machine can also be used as a bike cleaning machine, and its about-us page references industrial vehicle, bike and bus washing. The same equipment can therefore serve cars, motorcycles and, in industrial contexts, larger vehicles, which widens the pool of potential customers at a single site.

SECTION 6

Product Deep Dive: Helmet Cleaner Machine

Sanitised helmets in about eight minutes

The Beaver helmet cleaner integrates sterilisation technology to clean, sanitise and deodorise a helmet, with a rapid drying system that delivers a sanitised helmet in about 8 minutes. The company states that the machine achieves 99.9% bacterial removal through 360-degree UVC sterilisation, combined with ozone sterilisation, heat drying and a safe detergent. (Elsewhere on the same page the FAQ refers to 99 percent sterilisation; buyers should ask for the supporting test method.)

Customer journey

- Tap the screen and make a cashless payment (S\$5 per cycle, as published in the FAQ).
- Insert the helmet carefully into the machine; padding does not need to be removed.
- Wait around 8 minutes while the cycle runs.
- Collect the sanitised helmet.

Smart features

Feature	Detail
360-degree UVC sterilisation	Targets 99.9% bacterial removal
LED lighting system	Clear view of the interior and convenience at night
HD touch display	Waterproof screen for durability
Safe detergent	Formulated to remove grime and sweat without damaging helmet quality
Fast drying	Rapid drying system minimises wait
Cashless payment	Smooth and convenient purchase

Operating profile for owners

- **No water connection:** the FAQ states that only electricity and cleaning chemicals are required, which widens possible installation sites.
- **Compact design:** small spaces can be turned into a profitable business.
- **Maintenance:** chemical levels should be checked and kept healthy regularly.
- **Warranty:** a 1-year manufacturer warranty on parts, including the helmet purifier, is included with every purchase.
- **Environment:** low-temperature drying and ozone sterilisation consume less energy, and avoiding single-use wipes and sprays reduces waste.

Recommended usage

Beaver's FAQ suggests a wash every one to two weeks to prevent bacterial build-up and odour, and a light clean after every one or two rides in hot, humid weather. That cadence matters commercially: daily riders such as delivery workers are potential repeat customers, which supports siting near rider hubs and fleet depots.

SECTION 7

Product Deep Dive: Apple Juice and Car Mat Machines

Squeeze Me Apple Juice Vending Machine

The Squeeze Me machine serves fresh red and green apple juice in about 90 seconds. It uses squeeze-on-demand technology with a slow juicer that minimises heat and oxidation to help maintain nutrients and enzymes. The FAQ states the juice is 100 percent pure apple juice made on the spot, with no added sugar, preservatives or concentrate. Customers can watch the preparation on the display, which Beaver says strengthens confidence and trust.

Aspect	Detail
Ordering	Tap the screen, select payment, collect the juice; each cycle is independent so multiple cups can be ordered
Payment	Cashless; can be programmed to accept most currencies
Hygiene	Staff regularly clean and refill the machine; smart monitoring system supports maintenance
Ideal sites	Corporate offices, shopping centres, gyms, hospitals and education centres
Differentiator	Fresh-pressed on demand versus packaged bottled juice

Business angle. A juice machine is the only product in the range with consumable inputs of fresh produce, so owners will need a reliable restocking routine. Beaver's manpower article notes that staff in self-service businesses shift from serving to restocking, cleaning and maintenance, and that is exactly the role here.

Car Mat Cleaning Machine

The car mat cleaner uses high-pressure water, car mat detergent and professional brushes to deep clean and sanitise mats while preserving their colour and quality. A complete cycle of rinsing, washing and drying takes about 3 minutes and costs S\$5, payable by coin or cashless methods. The machine opens like a car door; the user places the mat face down and collects it clean.

Aspect	Detail
Suitable mats	Rubber, fabric and vinyl; customers should check their mat care instructions
Size handling	Beaver states it can handle mats of different sizes, including large vehicle mats
Cleaning action	Water, built-in cleaning solution and gentle brushes; customers bring nothing
Recommended frequency	At least monthly, more often with muddy or dusty use
Owner benefits	Minimal staff, 24/7 revenue, low operating cost versus manual cleaning, a modern professional image

Cross-sell opportunity

Beaver suggests the mat cleaner can be added to an existing car wash business. Placed beside the self-service car wash, the two machines serve the same driver in the same visit, which can raise the value of a trip without adding staff.

SECTION 8

Business Model and Partnership Options

Machines, franchise and rental, backed by end-to-end support

Beaver is not just a manufacturer of machines; it also sells a path into business ownership. Its franchise page invites entrepreneurs to step into automated self-service, and its articles confirm multiple partnership programmes, including franchise, machine sales and machine rental. The company also places its own car wash machines at locations in Singapore.

The franchise journey

Step	Description
1. Choose your machine	Pick from the available product lines
2. Secure your location	Beaver offers location recommendations and access to high-footfall sites
3. Complete training	Franchisees receive a training programme
4. Launch with confidence	Begin operating with ongoing support from Beaver

Four pillars of the partnership offer

Pillar	What Beaver says
Proven and tested concept	A reliable business model with a proven track record of success
End-to-end support	Complete guidance and assistance at every step
High-potential locations	Access to strategic locations with high footfall and visibility
Growing demand	Tapping into increasing demand for automated self-service machines

Who is the franchise designed for?

Beaver says it provides full assistance so franchisees can launch **without prior technical or business experience**, and promotes a high potential return on investment because machines operate around the clock with minimal manpower. It also states that comprehensive training and ongoing support are available to franchisees and buyers alike.

Partnership routes compared

Route	Typical fit	Considerations
Franchise	First-time owners wanting guidance and a recognised concept	Training and location support; commercial terms to be confirmed with Beaver
Machine purchase	Operators with their own site, such as car park or petrol station owners	Owner controls the site and pricing; maintenance and consumables are owner-managed
Machine rental	Owners wishing to limit upfront capital	Terms, tenure and revenue sharing to be confirmed with Beaver

Note

Beaver's public pages do not state franchise fees, machine prices, rental rates or expected profit; the franchise FAQ headings (for example, "How much profit can I expect?") are listed but not answered in the page content. These details are provided on enquiry.

SECTION 9

Location Strategy and Illustrative Economics

Where the machine sits matters as much as what it does

A recurring message across Beaver's content is that site selection drives usage. A machine is only valuable if customers notice it, can reach it easily and are already nearby. The company's pages and articles identify the following location families.

Machine	Locations named by Beaver
Car wash	HDB car parks, office building car parks, industrial sites, petrol stations, malls, residential car parks, EV charging locations
Helmet cleaner	Transport hubs, gyms, workplaces, petrol stations, bike rental fleets, shopping malls, car parks, delivery rider hubs, convenience stores, food courts
Apple juice	Corporate offices, shopping centres, gyms, hospitals, education centres
Car mat cleaner	Car wash businesses and similar vehicle-care sites

Site-selection checklist

- **Footfall and visibility:** will target users pass the machine and notice it?
- **Space and access:** can vehicles or riders approach safely and conveniently?
- **Utilities:** water for the car wash and mat cleaner; electricity for all; the helmet cleaner needs no water connection.
- **Operating requirements:** landlord, building or authority conditions, particularly for 24/7 use. Beaver stresses that installation is subject to site suitability and applicable requirements.
- **Dwell time:** a match between the length of the service cycle and how long people naturally stay.

Illustrative throughput arithmetic (analysis, not Beaver data)

The published cycle times and the two published S\$5 prices allow a simple upper-bound calculation. These figures are theoretical maxima for one machine running continuously with no queueing gaps, and are shown only to illustrate how cycle time shapes capacity. Real utilisation will be a fraction of this, depending on the site.

Machine	Cycle	Max cycles per hour	Max cycles per 24 h	Price per cycle
Helmet cleaner	About 8 min	7	180	S\$5
Car mat cleaner	About 3 min	20	480	S\$5
Apple juice	About 90 sec	40	960	Not published

Calculation: 60 divided by cycle length in minutes (rounded down for the helmet cleaner), multiplied by 24 hours. Excludes cleaning, refilling, downtime and any gap between users.

SECTION 10

Assessment: Strengths, Risks and Recommendations

Strengths

- **Coherent value proposition:** every machine turns a manual or staff-dependent task into a short, paid, automated transaction.
- **Product-market storytelling:** each machine is tied to a visible local trend (labour costs, EVs, delivery riders, health awareness).
- **Operational simplicity:** cashless payment, minimal supervision and, for the helmet cleaner, no water connection reduce installation friction.
- **Support wrap-around:** training, location recommendation and warranty (1 year on helmet parts) lower the barrier for new owners.
- **Diversified range:** vehicle care and beverage lines let owners or landlords choose a fit for their particular site.

Risks and open questions

- **Unpublished economics:** no prices for the car wash or juice machine, and no franchise, rental or profit figures on the public site.
- **Demand validation:** market claims are directional and not backed by published usage data or named customer outcomes.
- **Claim consistency:** the helmet page states both 99.9% bacterial removal and 99 percent sterilisation; the test basis should be confirmed.
- **Site dependence:** a strong machine in a weak location will underperform; permissions and space can limit options.
- **Consumable and upkeep burden:** detergent, chemicals, apples and cleaning still need dependable human routines, so "unmanned" really means "lightly staffed."
- **Competition and substitutes:** manual car washes, mobile valets, packaged drinks and DIY cleaning remain alternatives.

Recommendations for a prospective owner

#	Action	Why it matters
1	Request a written breakdown of purchase, franchise or rental terms, plus operating costs	Public pages omit pricing and return figures
2	Ask to visit a live Beaver machine and speak with an existing operator	Replaces marketing claims with first-hand evidence
3	Count footfall at the shortlisted site at several times of day	Utilisation is the biggest swing factor
4	Confirm utilities, permissions and 24/7 access with the site owner	Avoids installation delays
5	Build a downside case at low utilisation before committing	Tests resilience to a slow ramp-up
6	Clarify maintenance, spares, response times and warranty coverage	Uptime protects revenue

Conclusion

Beaver Energy offers a credible, easy-to-explain automation proposition in a market where labour is expensive and consumers value convenience. The concept is well matched to high-traffic Singapore locations. Whether any individual machine becomes a strong business will depend on site quality and utilisation, details that must be tested with Beaver directly before investing.

Sources: beaverenergy.com.sg (home, about, franchise, machines pages, and articles dated 29 Sep, 6 Oct and 13 Oct 2026).

This document is an independent, desk-based analysis and does not contain confidential or customer-specific data.