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December 2021

New York products design awards
Dec 2021

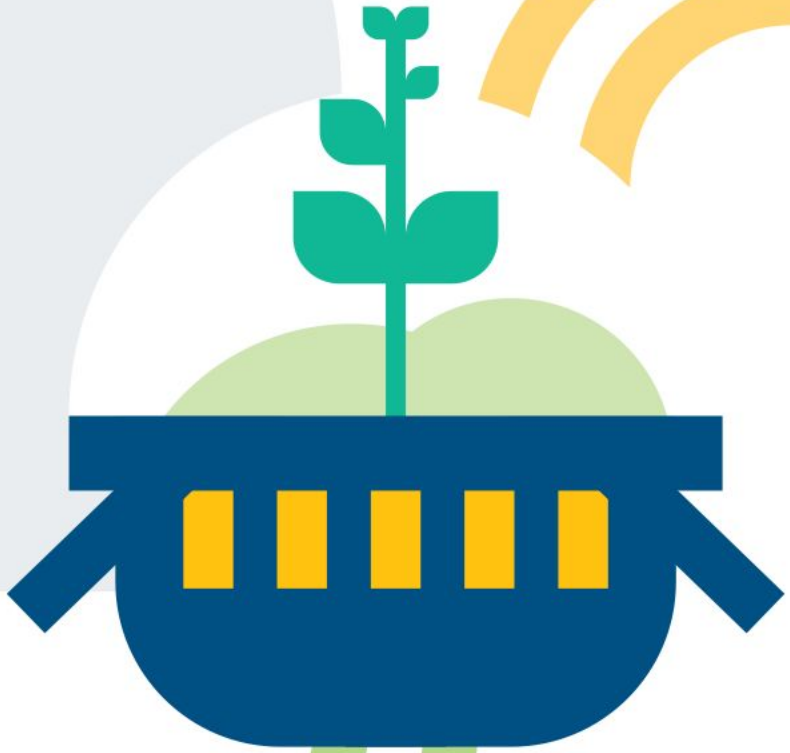
Packaging-free Retail platform

Over **300,000,000 tons** of plastic are produced each year, of which **50% is single use.**

63% of global packaging across the food, beverage, beauty, home care and pet food industries is currently **made from plastic.**

50%
40%
30%
20%
10%

Only 10% to 15%
of single-use plastic is recycled globally each year



Recycling is not enough

While recycling has an important role to play in addressing the plastic pollution issue, it perpetuates the problem rather than eliminating it.

We must invest in alternative models of consumption such as refills that eliminate the need for packaging.

> When you buy in small formats, **you pay from 30% to 50% more for the product,** depending on what the product is.
>
> Sometime you're broke.
> **You can't afford the pack.**

A tax on the poor

Many poor families pay a 'poverty tax' for small packages because they cannot buy products (especially staples) in higher volume formats.

How can retailers and brands help individuals who are under financial pressure?

This isn’t only about recycling,
reducing plastic,
or improving food affordability.

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There is a **$1 Trillion** market In packaging

that is going to be disrupted by a growing tide of legislation, consumer awareness and shifting consumer needs.

Packaging-free retail will grow rapidly to meet demand for a cleaner environment and affordability.

Smartfill focuses on the

$400 billion

FMCG packaging challenge created by a shifting market by providing an underlying data platform, hardware and software to enable packageless logistics and retail.

A rapidly growing market disrupting existing packaging industry

A large packaging market with no clear winner

- $900bn globally, $162bn in Western Europe
- ±35% on grocery (Food and Bev) $56bn in WE alone
- Top 30 companies by revenue account for 25% of market.
- Highly fragmented

Under pressure by legislation and rising costs

- European Union passed a tax of €0.80 pr kg on non-recycled plastic packaging waste
- SDG Goals to reduce packaging waste
- 30% increase in cost of cardboard
- 50% increase in cost of plastic
- 19% increase in cost of logistics
- Labour input cost rising

Servicing stressed retailers with changing consumer demands

- A review of 35 annual reports of retailers all cited margin pressure from e-commerce and logistics
- Changing competitive landscape with grocery, dark stores and home deliveries
- Increasing consumer preferences for green goods
- Low consumer willingness to pay more for green products
- Increasing single households require smaller quantities forcing smaller packaging sizes

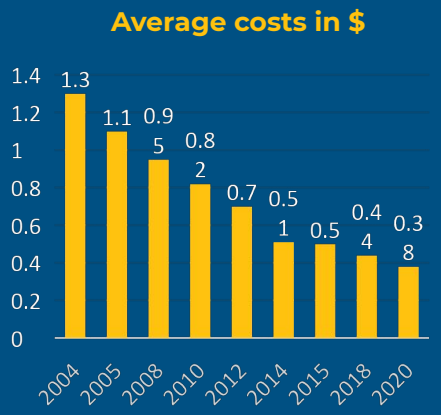
Key trends

Technology

Automation across the value chain - 8.5% CAGR investment

Cost of sensors and IoT falling

Investment in retail tech tripled to $28.9 Billion in Q1



Consumer preferences

Desire flexible price points in emerging economies

19.5% Growth rate in single person households between 2010 and 2020 means a change in consumer behaviour to demand smaller sizes

Shift to e-grocery increasing investment spend in technology for retailers and dark stores

Changing consumer channels shifting behaviour

Increased logistics costs

Huge demand for warehousing closer to consumer increased rental costs

Time between manufacturer and consumer shrinking

5 Billion pallets in use worldwide, price increasing 400%

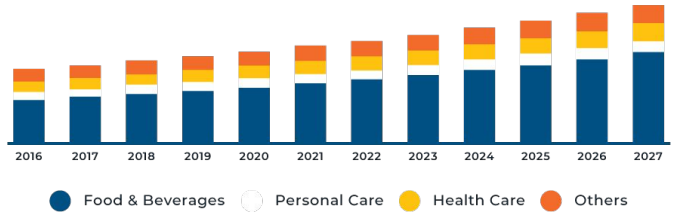
Demand for fast home delivery in grocery change logistics industry

Increased packaging costs for recyclables

Recyclable packaging market size estimated to grow to $417 Billion by 2027 from $270 Billion in 2020

Currently packaging costs average 8% of product value

US green packaging market size by application, 2016 – 2027



Legislation

EU packaging directive aiming for 95% recyclability of all small consumer flexible packaging

Traceability and source monitoring requirements

In March 2021, French MPs voted in favour of a law stipulating that supermarkets over 400m² would need to dedicate 20% of the floor space to refill stations by 2030

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Our prototype tests with Products

“I can buy food from R1”

The clear feedback from customers was the affordability of buying food in small quantities either due to cashflow or to being a single person who doesn’t need large quantities.

Over the 3 week trial we saw numerous transactions with an increase towards the end of the period as grew used to the idea. While the transaction volumes were small as power failures impacted the machine availability and there were only 2 sites, the spaza operators felt they had sold more of the products over the period.

The results were promising enough for further investment to develop the new smartfill containers. The

Gwalisa Youtube prototype 1 link

What we learned

Awareness

Consumers instantly spotted the machines and asked for more information.

The form factor was designed to fit into shelves but could have been more prominent.

Size limited volume requiring more refilling.

Trial

Consumers tried purchases mostly of rice to see if there was a difference in price.

Users did not relate to the no plastic aspect, refilling into plastic bags.

Users overwhelmingly purchased by price.

Food is in much greater demand than detergents.

Technica

The devices need less options and to be simple to operate.

Power outages limited the availability of the dispenser over the trial period, reducing its effective data.

Sunlight caked when not used for a while.

We need sensors to stop the flow when the container is pulled away from the dispenser.

The final version

1. Dispensing and logging App

Integrated app controlling motor and content dispensing. Transactions are logged and transmitted.

2. Printer

Pricing stickers containing legislated product information and barcodes.

3. Proximity sensors

Start/Stop flow during dispensing based on container proximity to avoid spilling.

4. Hopper Release

Hopper release mechanism and forward tilt

5. Airtight lid

Airtight lid for refilling and transporting of hoppers.

6. Replaceable Hopper

To simplify refilling the hopper can be removed and replaced easily by store staff. Hoppers can be refilled in the dispenser by removing lid. Draft of angles and feeders to create even product flow.

7. Controlled Dispensing Mechanics

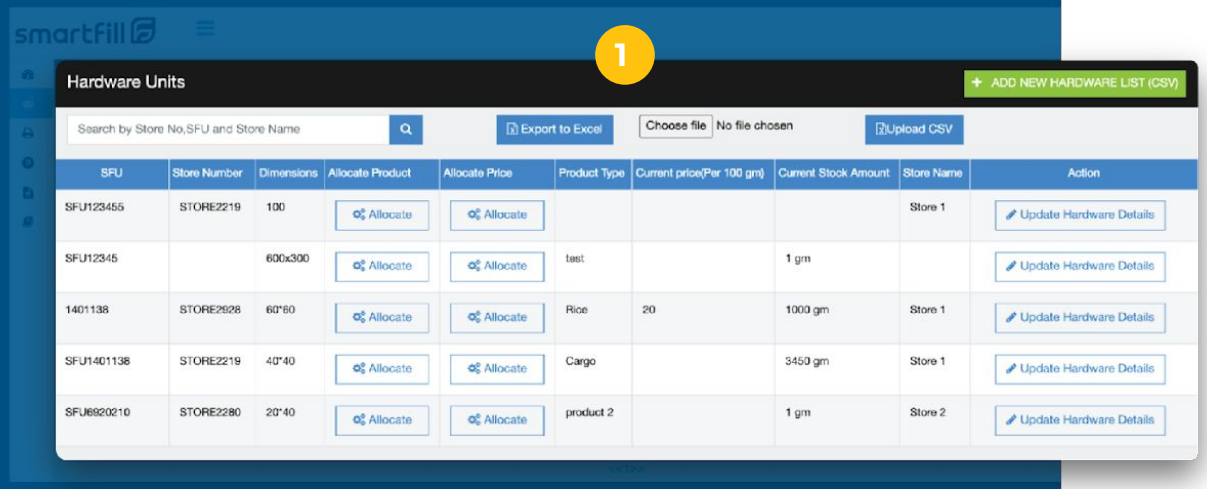
Variable shaped screw and food safe diaphragm for effective content dispensing to eliminate blockages, and spilling.

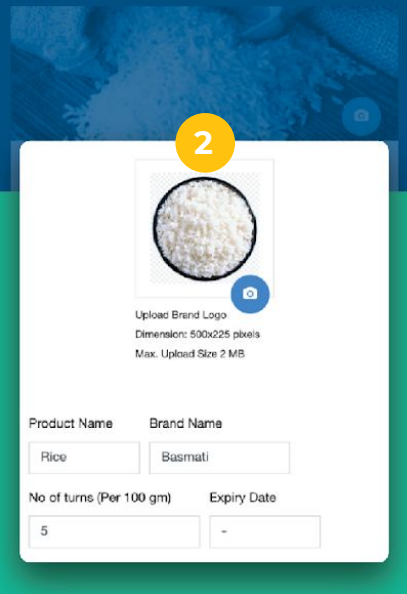
8. Integrated Weight Sensor

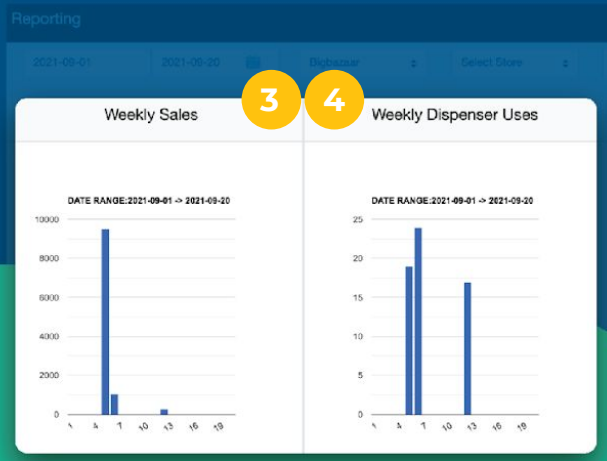
Real-time stock taking of hopper contents.

9. Motor Control

Programmed FTDI chip for serial control over motor and sensors.







Cloud based device registration, product management, monitoring and transaction data

Smartfill Platform

1. Device Management

Authenticate devices onto the platform via a key. Device type, current status and other key factors reported.

2. Product management

Create product profiles that can be used by any device. product profile uploaded to device provides imagery, product details and flow.

3. Store management

Store level management of device for store level imagery, pricing and batch data.

4. Reporting

Create product profiles that can be used by any device. product profile uploaded to device provides imagery, product details and flow.

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Secure interface

User management

Product database

Transactional data

Device registry

Device credentials

Real time sales data

Brands access real time sales data and supply predictions from the retail shelf, stockroom and warehouse.

Smart storage containers

Reusable smart storage containers carry bulk product. Batch numbers, expiry dates, weight and environmental monitors ensure food safety and regulatory compliance.

Location in logistics chain

Smart storage provides detail of location in logistics chain plus state of goods.

Stock levels updated in real time

Retailer uses smart storage for refilling of packageless shelf units. Stock levels in storage updated in real time for auto re-ordering, expiry and stock control.

Smart shelf units

Smart shelf units provide real time transaction data and stock levels.

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R4 / 100g
Start


Basmati Rice
R6,50 / 100g
Start
Almonds
R25,00 / 100g
Start

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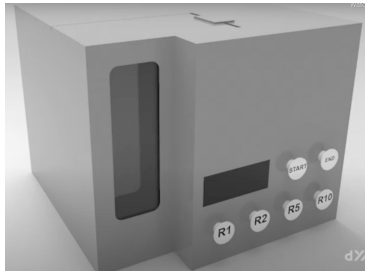
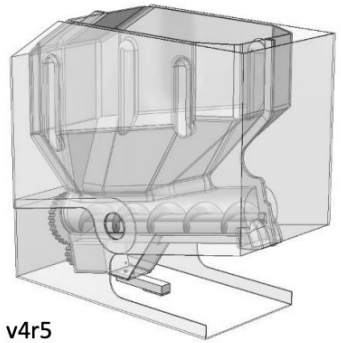
Click to watch the video





June 2019

Proof of concept tested in spaza market with v1 dispenser for rice and cleaning liquid.

December 2019

Technical proof of concept v2 trialled at industry event for major brands and marketers.

April 2020

Proof of concept tested in zero waste specialist with prototype v3.

February 2021

SP prototypes V4 develop scalable multi-product prototype.

September 2021

US distributor interest.

Platform prototype developed and integrated with hardware V7.

Today

Pilot with major FMCG brand into mass market.

Pilot with health and wellness retailer.

Pilot with large independent grocer (SPAR).

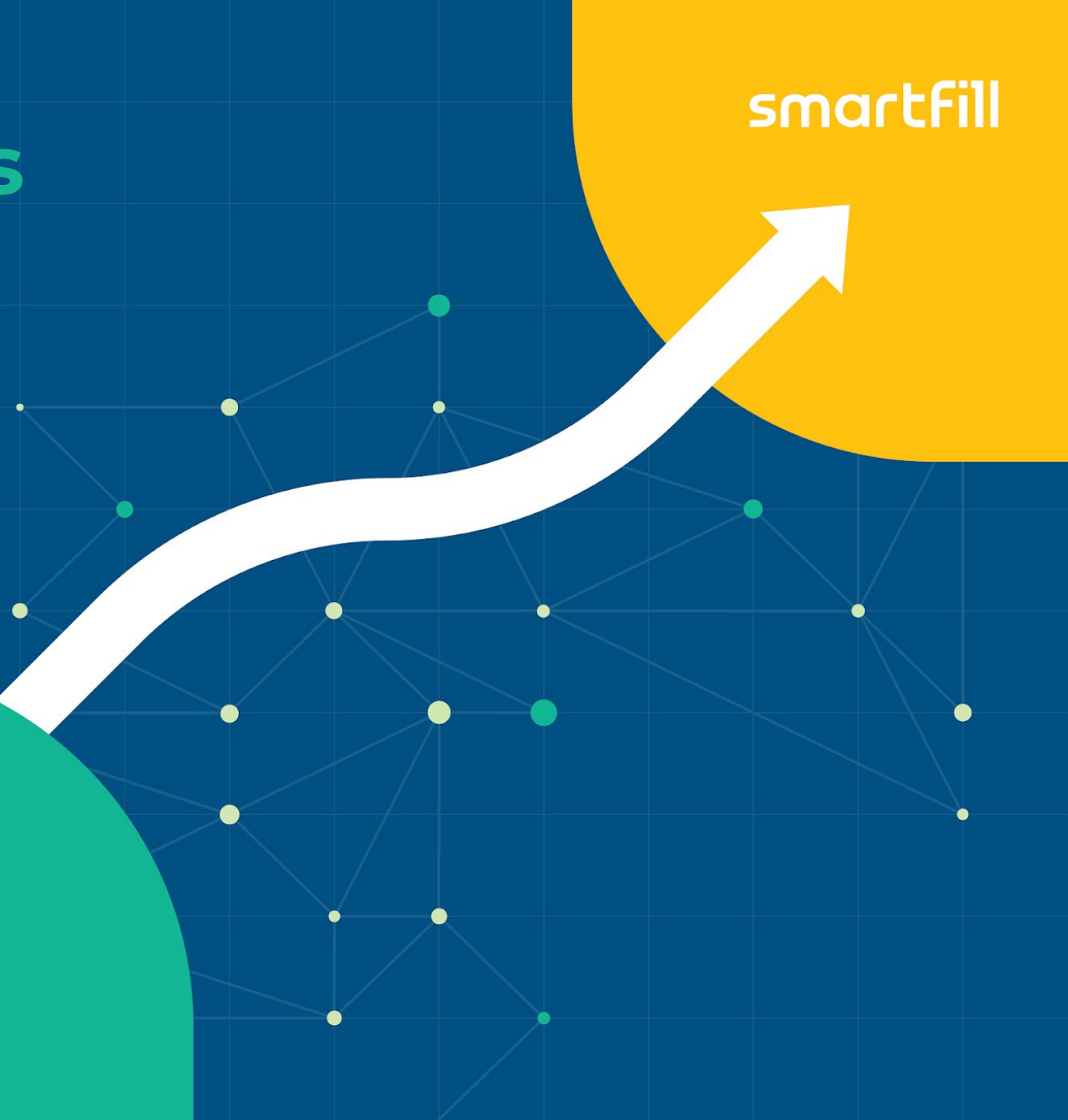
Smartfill leverages network effects

Data & Device Connections

The more retailers and brands connect to the Smartfill cloud, the more valuable the cloud becomes to future brands and retailers by simplifying their supply chain and store management.

Scale reduces unit costs

The more units in market, the lower manufacturing costs become and the harder to displace.



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Prototype tests and product design

- Prototype units v1 to v3
- Market testing
- Consumer testing
- Retailer testing

Prototype dispensers live In four locations (2 major brand prototypes).

2021

- SP Protype V4-V7
- Platform Architecture
- Software prototypes
- SH Prototypes V1-v3
- Electrical board design
- APIs (device to cloud)
- SP1 deployed

SP - smartfill premium dispenser
SM - smartfill mass-market dispener
SL - smartfill liquid dispenser
SH - smartfill hopper
L -logistics IoT

European trials in 1 major retailer.

20 units, 300 low cost dispensers deployed in SA market (spaza),

100 in modern retailers.

Weight sensors deployed in Europe and US.

US trials with 1 major retailer - 20 units.

On-device payment.

2022

- SP Prototype v8-v10
- SM prototype v2-v3
- SM deployed Platform scale build
- SL prototypes v2-v5
- SL 1 deployed
- L1 Prototype v1-v3
- L1 deployed

Live in 5 European countries - over 2500 dispenser in market, 5000 sensors in market.

Live in US market with major retailer – 1000 units.

Adoption with key brands in spaza model, over 5000 units in market trials in SE Asia and India.

2025

- SP2 scaled production
- SM2 mass production
- SL 2 scaled production
- SL 3 mass production
- Log1 scaled production (Sigfox)
- SigFox approved solution
- API for 3rd party components prepared
- Ongoing R&D into hardware and software

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What are our next steps?

Over the next 24 months we plan to expand the number of instore dispensers and manufacturer traction. Introduce new dispenser formats at lower cost points for mass market and liquid dispensing while reducing cost per unit.

We will establish a European HQ, with a growth focused CEO and management team who can scale the business as required.

Engineering team will be expanded to 6 including hardware and software engineers and testing labs.

Our aim is to have **1500 units in market by the end of 2023, with a LTV of $4.5 Million,** showing early signs of success and market momentum.

We currently have 100+ orders and growing.

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