CP-1

Your kitchen's autopilot.

A robot chef for every cuisine.

GROUP 3

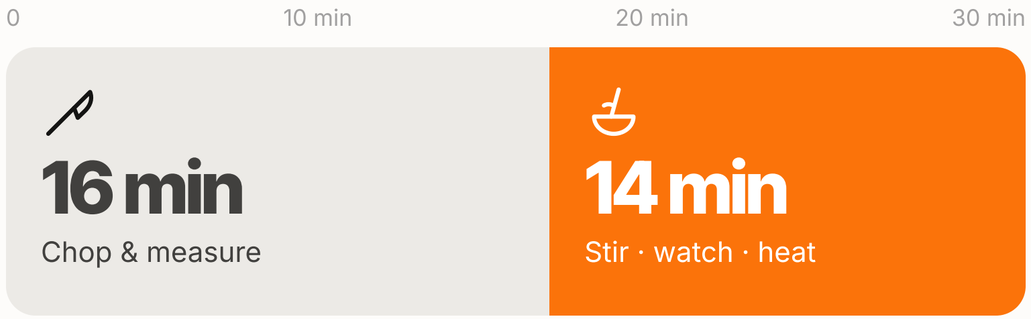
Mostofa Khondokar Sadid 24229568
Chow Naheean 23229532
Nguyen The Hung 23229586
Nguyen Hai Nguyen 25224543
Sameha Fairoz 24229586
Nguyen Huu Toan 23229584
Le Viet Bao 24229604
Vu Tu Tam 25224041



Half of dinner is babysitting the pot.

47%

of a stovetop recipe's time is spent at the stove: stirring, watching, adjusting heat.



A typical 30-minute stovetop dinner (median recipe)



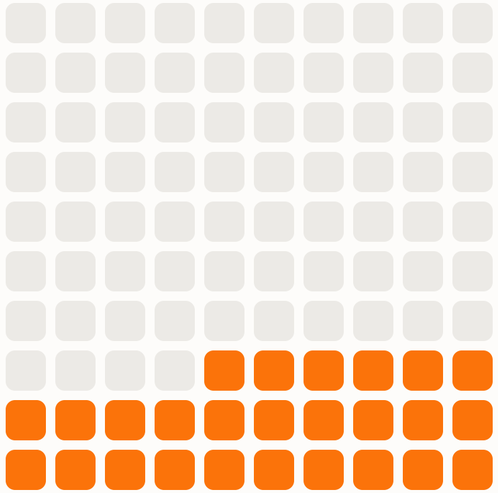
Our analysis of 231,637 Food.com recipes (Majumder et al., EMNLP 2019; dataset): 22,946 stove-only recipes, timed stove steps ÷ stated total time. Median 47.4%, middle half 25–67%; untimed steps count as zero, so this is a floor. Script: research/stove_time.py. Fires: NFPA, Home Cooking Fires, Sep 2023 (2017–2021 average 158,400 a year ÷ 365 = 434 a day; "equipment unattended" is the leading factor). Photo: generated illustration.

Busy, tech-forward homes that cook.



The dual-income dinner

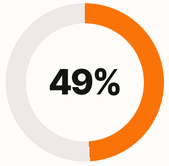
- Both work, home after 6 pm
- Cooks at home 2–6 times a week
- Already owns smart-home tech
- Lives on their phone



35.2M

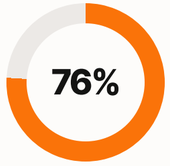
US households earn $150k+

26% of all 134.8M households



own a smart-home device

US internet households



cook at least a few times a week

US adults

LAUNCH FIRST

Multi-cuisine US homes

e.g. Indian-American households: median income **$151,200**. Roti every day; no pot-only robot makes it.

Then Canada · Australia · UK

Census CPS ASEC 2025, HINC-06 (brackets ≥ $150,000: 35.2M of 134.8M households). Parks Associates, 2025 (49% of US internet households own a smart-home device). YouGov (76% cook at least a few times a week). TechCrunch, May 2025 (Posha’s best buyers cook 2–6 times a week). Pew Research, 2023 (median income of Indian-headed US households). Photo: generated illustration.

A robot chef. A smarter app.

You chop and load. CP-1 adds, stirs, watches and controls the heat, and pings you only when it needs you.





Choose
recipe in app

→

Check
fits CP-1?

→

Load
chop into trays

→

Cook
CP-1 runs it

→

Eat
“Dinner’s ready”

Core cooking runs locally, even without Wi-Fi.

One base. Every cuisine.



Pot + auto-add tray

curry · chili · risotto · pasta sauce

INCLUDED



Wok-toss

stir-fry · fried rice · lo mein

ATTACHMENT



Flatbread press

tortilla · roti · naan

ATTACHMENT



Skewer rotisserie

kebab · souvlaki · satay

ATTACHMENT



Steamer tower

dumplings · bao · tamales

ATTACHMENT

Stir · Toss · Press · Roast · Steam

Five methods, one base. No other home robot chef sells cuisine attachments.

Attachment images are concept renders (CookPilot design, generated for this deck). Attachments planned at $149–249 each.

Four sensors. One pot.

Vision

Raspberry Pi Camera Module 3 · 12 MP Sony IMX708

Browning, boil-over, “is it done?”

Temperature

K-type thermocouple (to 500 °C) + MAX31855

Pan heat, every 100 ms



Weight

SC133 10 kg load cell + HX711 24-bit ADC

Confirms each addition, tracks reduction

Stir load

12 V geared motor current via TB67H450 driver

Thickening sauce, stuck paddle

Every dinner leaves a record.

Sensors
temp · weight · camera · motor
10 HZ

→

Raspberry Pi Pico
real-time sampling, safety cut-off
RAW

→

Pi Zero 2 W (edge)
1-second summaries + events: “onion added”, “boiling”
AGGREGATED

→

Cloud database
one session per dinner, linked to its recipe version
STORED

→

App
live progress, history, ratings
SHOWN

RECIPE

Recipe · Recipe Version · Ingredient · Recipe Step

COOKING

User · Device · Cooking Session

RESULTS

Step Result · Feedback

Nine linked tables: every cooking session points to the exact recipe version used. Cooking logs leave the device only if the owner opts in.

It watches, decides and acts.

Temperature curve
slope, overshoot

Weight steps
added? reducing?

Camera frames
colour, bubbles, smoke

CookPilot AI

rules for safety
+ vision model for doneness
+ generative recipe planner

Acts
next stir pattern & heat step

Asks
“Load the garlic tray”

Learns
recipe fixes, reviewed & tested

Protects
smoke, overheat or a dry pot → heat off, phone alerted

COOKPILOT · now

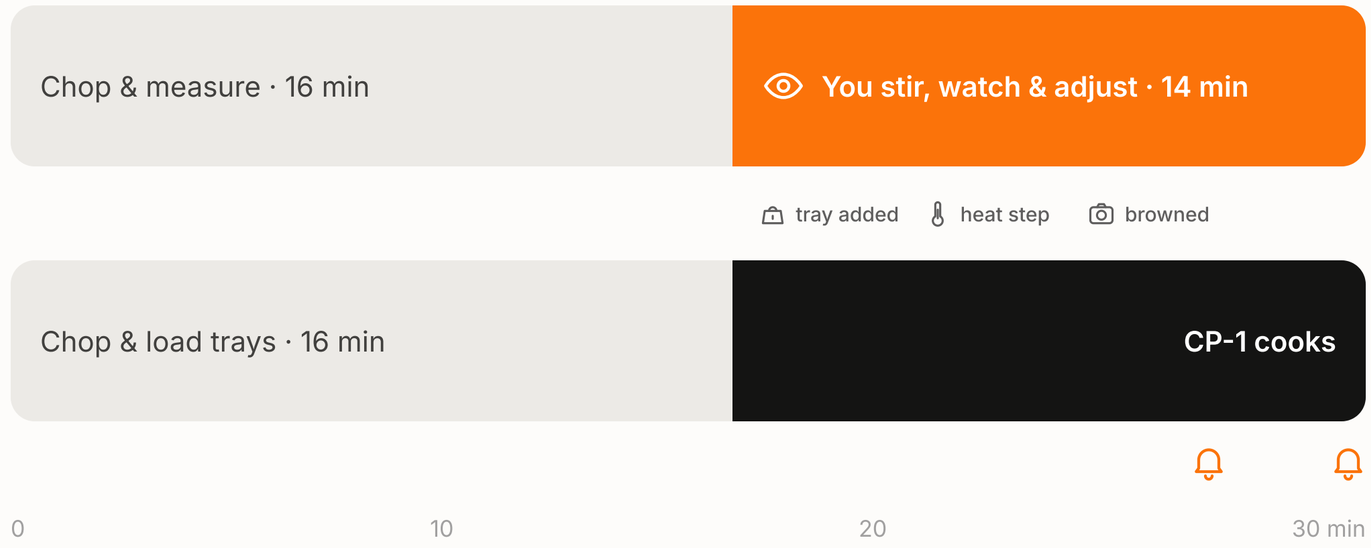
Onions are golden.

Adding garlic and spices. 12 min to go.

Plans the recipe. Checks it fits the machine. Watches it cook. Cuts the heat if something goes wrong.

Safety: over-temperature and dry-pot checks run on the Pico (thermocouple + load cell) and smoke detection on the Pi Zero camera; either one switches the cooker off through the SSR, without Wi-Fi. A 120 °C bimetal thermostat on the cooker housing turns the SSR off in hardware, even if the software fails. App benchmark: Brisk It’s Vera AI recipe assistant, called the smartest feature among the grills tested by Tom’s Guide. CookPilot features are in development; recipe changes are never applied automatically.

Chop. Load. Walk away, safely.



If you walk away

Today: the #1 cause of cooking fires
434 fires a day · $1.15B damage a year

With CP-1: the heat cuts itself off
overheat, smoke or a dry pot → off + phone alert

−12
min per dinner EST.

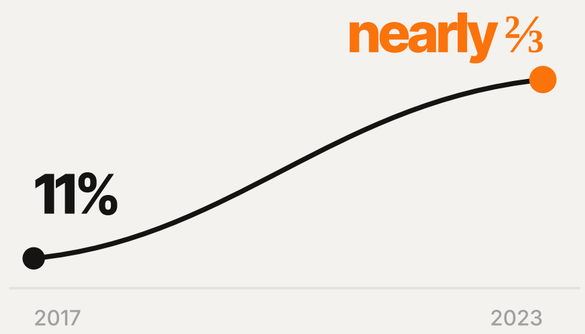
73 h
back each year

$2,746
of your time a year. CP-1 pays for itself in 3.9 months.

Estimate, to be measured in our 20-home beta: median stove time 14 min (slide 01) minus about 2 min answering pings (bells) = 12 min; one stovetop dinner a day → 12 min × 365 = 73 h. Value: 73 h × $37.62 average hourly earnings, US private sector, Jul 2026 (BLS via FRED) = $2,746; $899 ÷ $2,746 × 12 = 3.9 months. Fires: NFPA, 2017–2021 annual average: $1.15B direct property damage, 470 deaths, 4,150 injuries.

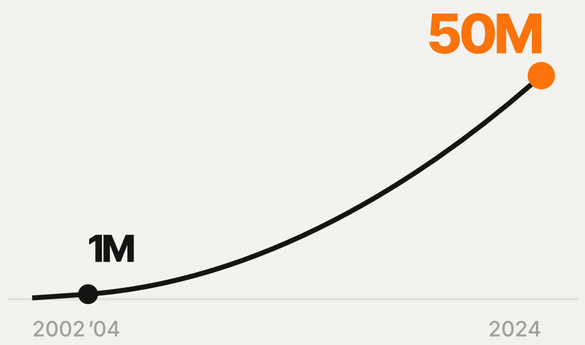
Kitchens adopt robots fast.

AIR FRYERS · US HOUSEHOLDS



Six years from niche to two in three homes.

ROBOT VACUUMS · IROBOT UNITS SOLD



Launched at $199.95; two years to the first million.

HOME COOKING ROBOTS · CHINA

368

sold online every day

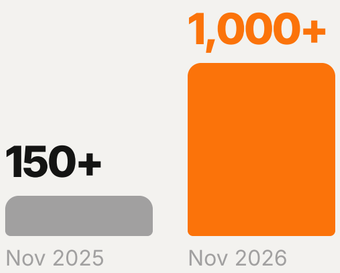
67,000 in H1 2024, **+82%** year on year. Kitchen robots are where vacuums were in 2004.

Air fryers: Circana via Star Tribune, Jul 2023 (“nearly two-thirds”). Roomba: iRobot releases 18 Sep 2002, Oct 2004, 4 Apr 2024. China: AVC online monitoring of household cooking robots, Jiemian, 12 Aug 2024; 67,000 ÷ 182 days.

People already pay for robot cooking.



Posha · US · $1,750



homes cooking with it · **6–8 month** wait for new orders · **$8M** Series A (Accel)



Nosh One · US & Canada · $1,499 early

$845,792

pledged by 729 backers in 30 days



16.9× its $50,000 goal · **24 new backers a day**

Thermomix · the category's proof

1.4M

sold in 2025 · $1,699 in the US

6.3M pay for its recipe subscription

Posha's founder calls Posha **"Thermomix++"**. Thermomix guides you; CP-1 cooks without you.



Posha: TechCrunch, 6 May 2025; Pulse 2.0, 7 Nov 2025 (150+ homes); posha.com, accessed 16 Nov 2026 (1,000+ homes, 6–8 months). Nosh One: Kickstarter, 24 Feb–26 Mar 2026, final total (page updated 21 Sep 2026). Thermomix: Vorwerk 2025 results (1.4M+ units, 6.3M+ Cookidoo subscribers); thermomix.com (TM7, $1,699); The Spoon ("Thermomix++").

13.1M homes are ready. We need 0.16% of them.

ALL US HOMES THAT CAN AFFORD IT

35.2M

households earning $150k+

$31.6B at $899

TECH-FORWARD AND COOK OFTEN

13.1M

households

$11.8B EST.

OUR TARGET BY 2030

20,500 robots

0.16% of 13.1M · $18.4M

REALITY CHECK

500

robots in our first year

Posha grew from 150+ to 1,000+ homes in 12 months

1:280

our 2029 sales vs Thermomix

5,000 robots vs 1.4M Thermomix sold in 2025

$6.1B

US smart-kitchen spending, 2025

growing 12.4% a year to $17.6B in 2034

Squares drawn to scale by area. All homes: Census CPS ASEC 2025, 35.2M × $899 = $31.6B. Tech-forward and cook often: 35.2M × 49% own a smart-home device (Parks Associates) × 76% cook at least a few times a week (YouGov) = 13.1M; × $899 = $11.8B (estimate; assumes the two shares are independent). Target: 500 (2028) + 5,000 (2029) + 15,000 (2030) = 20,500 robots × $899 = $18.4M. Smart-kitchen spending: Renub Research.

Same job. More cuisines. Half the price.

	 **Posha** $1,750	 **Nosh One** $2,000	 **Moley X-AiR** $105,000	 **CookPilot CP-1** $899
Stirs and sautés by itself	✓	✓	✓	✓
Camera watches the food	✓	✓		✓
Generative AI recipes				◐
Checks a recipe fits the machine				◐
Learns from every cook				◐
Cuisine attachments				◐
Under $1,000				✓

None of these robots chop: each one cooks what you prep. Moley X-AiR also needs pre-measured food and has no camera (Engadget, Oct 2024). Posha list price: posha.com. Nosh One planned retail: New Atlas, Feb 2026. ◐ = planned for CP-1.

Robot-chef power. Half the price.







$2,000
Nosh One

$1,750
Posha

$899
CookPilot CP-1

−49%
vs Posha

−55%
vs Nosh One

CookPilot+ recipes **$9.99/mo**
Posha Circle $14.95/mo · Nosh $180/yr ($15/mo) · basic cooking never needs it

Bars drawn to scale. List prices: Posha $1,750 (posha.com); Nosh One planned retail $2,000 (New Atlas). Moley X-AiR (£80,000 ≈ $105,000, Engadget) is left off: 117× our price. Posha Circle: posha.com. Nosh subscription value: New Atlas. ¥ at ¥158/$: CP-1 ≈ ¥142,000.

$302 of parts. Every one listed.



Raspberry Pi Zero 2 W

$20.19 ¥3,190
China $28.30
akizukidenshi.com



Raspberry Pi Pico

$5.06 ¥800
China $2.97 (equiv.) ↓
akizukidenshi.com



Camera Module 3

$37.59 ¥5,940
China $40.39
switch-science.com



Camera cable 200 mm

$2.09 ¥330
China $0.91 ↓
switch-science.com



16 GB microSD

$9.18 ¥1,450
China $4.73 ↓
akizukidenshi.com



5 V 3 A adapter

$6.96 ¥1,100
China $3.79 ↓
akizukidenshi.com



K-type thermocouple

$13.23 ¥2,090
China $1.75 ↓
switch-science.com



MAX31855 amplifier

$21.84 ¥3,450
China $6.59 ↓
akizukidenshi.com



SC133 10 kg load cell

$4.75 ¥750
China $3.20 ↓
akizukidenshi.com



HX711 amplifier

$2.22 ¥350
China: in load-cell kit
akizukidenshi.com



Iris Ohyama IH cooker

$44.18 ¥6,980
China: n/a, Japan price used
nttxstore.jp



Nitori 20 cm IH pan

$7.53 ¥1,190
China $12.81
nitori-net.jp



SSR kit 25 A

$2.85 ¥450
China: n/a, Japan price used
akizukidenshi.com



TLP241A photo-relay ×3

$2.66 ¥420
China: n/a, Japan price used
akizukidenshi.com



Thermostat 120 °C

$0.32 ¥50
China: n/a, Japan price used
akizukidenshi.com



12 V geared motor 82 RPM

$11.52 ¥1,820
China $5.00 ↓
akizukidenshi.com



TB67H450 motor driver

$2.03 ¥320
China $1.01 (equiv.) ↓
akizukidenshi.com



Serial-bus servo 30 kg·cm ×2

$45.32 ¥7,160
China: n/a, Japan price used
akizukidenshi.com



Servo driver board

$8.10 ¥1,280
China: n/a, Japan price used
akizukidenshi.com



MUJI silicone spoon

$3.73 ¥590
China $1.33 ↓
muji.com



6 mm shaft hub (pair)

$14.30 ¥2,260
China: n/a, Japan price used
akizukidenshi.com



2020 frame 300 mm ×4

$13.34 ¥2,108
China $18.81
monotaro.com



12 V 5 A adapter

$15.06 ¥2,380
China: n/a, Japan price used
akizukidenshi.com



Emergency-stop button

$5.95 ¥940
China $0.97 ↓
akizukidenshi.com



Jumper-wire set

$1.90 ¥300
China $1.13 ↓
akizukidenshi.com

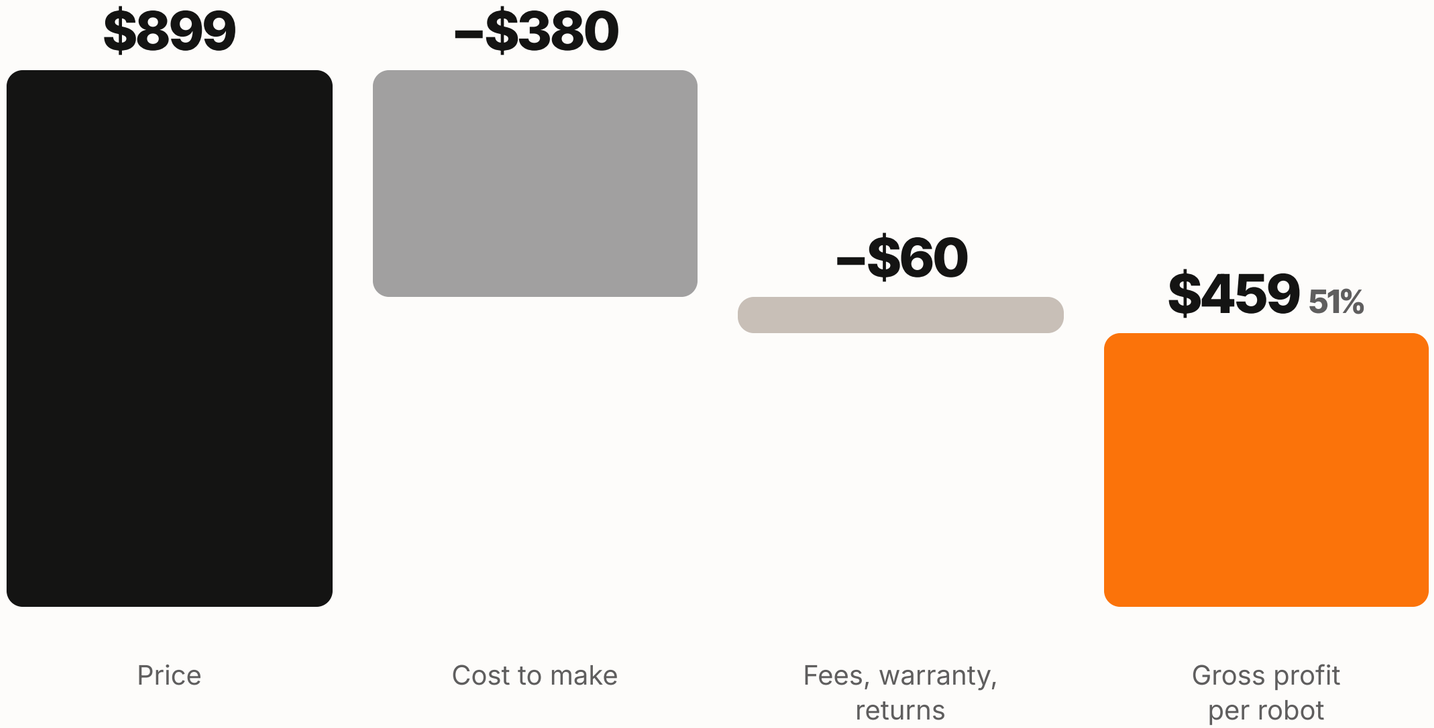
Compute & vision $81.08 | Sensing $42.03 | Heat & safety $57.53 | Stir & move $85.00 | Frame & power $36.25

$302
Japan, as bought · ¥47,698

$245
cheapest source per part (−19%)

Japan prices tax-included, checked 9 & 16 Nov 2026; converted at ¥158/$. China = cheapest realistic AliExpress listing (≥100 sold, exact variant, no first-order coupon), read 16 Nov 2026, shipping excluded; n/a where no listing matched or only a coupon price showed; the six motion and safety parts (servos, servo board, shaft hub, SSR, photo-relays, thermostat; Akizuki, 24 Nov 2026) were not compared. Roles: servos swing the arm and turn the ingredient tray; photo-relays press the cooker's buttons; the SSR and thermostat cut its power. Not included: 3D-printed brackets and enclosure, wiring connectors, app development, attachments.

Sell the robot. Earn every dinner.



ATTACHMENTS
$149–249 70% margin

COOKPILOT+
$9.99/mo 85% margin

LIFETIME VALUE : COST TO WIN A CUSTOMER
$624 : $150 4.2×

All figures are estimates. Cost to make $380 per robot at 5,000 a year (2029): parts $211 (our $302 prototype list, −30% at volume) + enclosure, pot & circuit board $79 + assembly, packaging & freight $90. Fees, warranty & returns $60. The first 500 robots cost about $550 each; Kickstarter pre-orders (500 × $699 = $349,500) pay for them. Lifetime value $624 = robot profit $459 + attachments (0.6 per owner × $139 profit) + subscription (40% take-up × $9.99 × 24 months × 85%). Cost to win a customer $150, assumed (Kickstarter + creator videos).

18 months to the first 500 robots.

Feb 2027
Working prototype
the $302 parts list on slide 14

Why: prove the core loop (add, stir, watch, cut off) before paying for moulds.

Apr–Jul 2027
20-home US beta
incl. multi-cuisine homes

Why: measure minutes saved and safety in real kitchens, the way Posha found its best buyers.

Sep 2027
Kickstarter, $699
early-bird price

Why: like Nosh, pre-orders prove demand and pay for the first batch.

Q4 2027–Q1 2028
UL/ETL · FCC · moulds
certify and tool up

Why: required by law for a plug-in appliance; moulds only after the beta freezes the design.

Q2 2028
First 500 ship
direct, then Amazon

Why: selling direct keeps the margin and the customer data.

2029
Series A → scale
5,000 robots a year

Attachments launch. Canada, Australia, UK. Pilots with senior-living and rental operators: people 65+ are 2.5× more likely to die in a home fire.

Why 18 months is realistic: off-the-shelf boards (Raspberry Pi), a store-bought induction hob and no custom chips. Posha and Nosh spent years inventing the category; we build on what they proved.

Timeline is an estimate. Certification: UL/ETL electrical safety and FCC radio (US); CSA (Canada), RCM (Australia) and UKCA (UK) follow. Fire risk for people 65+: US Fire Administration, 2023.

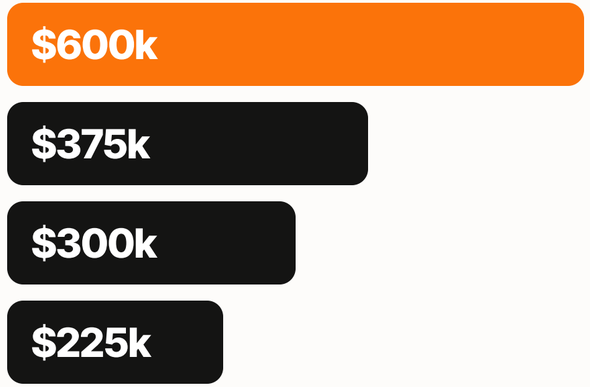
What $1.5M buys.

$1.5M

Seed round for 15%

$10M valuation after the money

A seed round is the first outside investment. It takes CP-1 from prototype to first sales in 18 months (Jan 2027 – Jun 2028).



Engineering & food R&D
4 engineers for 18 months: hardware, firmware, vision, app; recipe testing

Moulds & pilot run
production moulds for base, arm, tray, pot and paddle

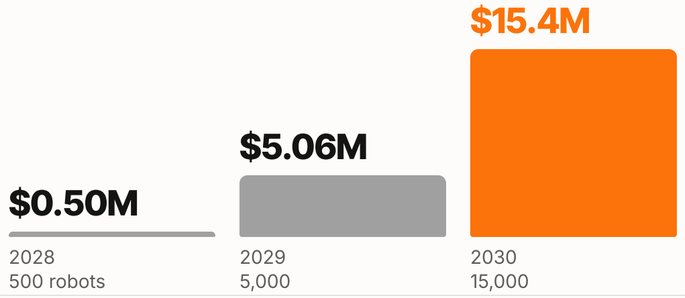
Launch
Kickstarter campaign, creator videos, 20 beta robots

Certification
UL/ETL safety, FCC radio, food-contact tests and retests

MILESTONES THAT UNLOCK THE SERIES A

- [ ] Working prototype
- [ ] Beta: ≥ 10 min saved per dinner, 0 safety incidents
- [ ] 500+ Kickstarter pre-orders
- [ ] UL/ETL and FCC certified
- [ ] 500 robots shipped

REVENUE EST.



COMPARABLE ROUNDS

$4M
Upliance seed (Khosla)

$5.2M
median hardware seed

$8M
Posha Series A (Accel)

Ask, use of funds and revenue are estimates. $1.5M for 15% = $10M post-money ($8.5M pre-money). Revenue = robots sold × $899 + 30% of new owners buying one $199 attachment + 40% of all owners subscribing at $119.88 a year. Comparables: Inc42 (Upliance, ₹34 crore ≈ $4M); Carta, 2025 (hardware seed median); TechCrunch (Posha).

Questions?

$1.5M seed · 15% · first 500 robots by Q2 2028

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Chow Naheean
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Nguyen Huu Toan
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Nguyen The Hung
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Le Viet Bao
24229604

Nguyen Hai Nguyen
25224543

Vu Tu Tam
25224041



Dinner cooks itself. You get the evening back.

Photo: generated illustration of CP-1 in a home kitchen.