## # PitchBook



VC trends and emerging opportunities







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We are adding PitchBook Exit Predictor probabilities to our Emerging Technology Research reports. PitchBook's proprietary VC Exit Predictor estimates the probability that a startup, or VC-backed company, will successfully IPO, be acquired, or merge. The tool is available exclusively to PitchBook clients. Additionally, we have launched a pre-seed report methodology to more accurately and comprehensively capture deals from the earliest phase of venture. Going forward we will sunset "angel" as a specified stage of venture in all of PitchBook's venture-focused reports.

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For previous updates as well as our complete foodtech research, please see the designated analyst workspace on the PitchBook Platform.

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## **Vertical update**

Foodtech VC funding remained muted in Q3, yet innovation continues at the same bustling pace as previous quarters. This quarter, we explore emerging opportunities including food assembly robots and the impact of GLP-1 drugs on foodtech. Other key trends this guarter include the maturation of food delivery services, plant-based evolution, and the continued ways that AI is infiltrating the food economy.

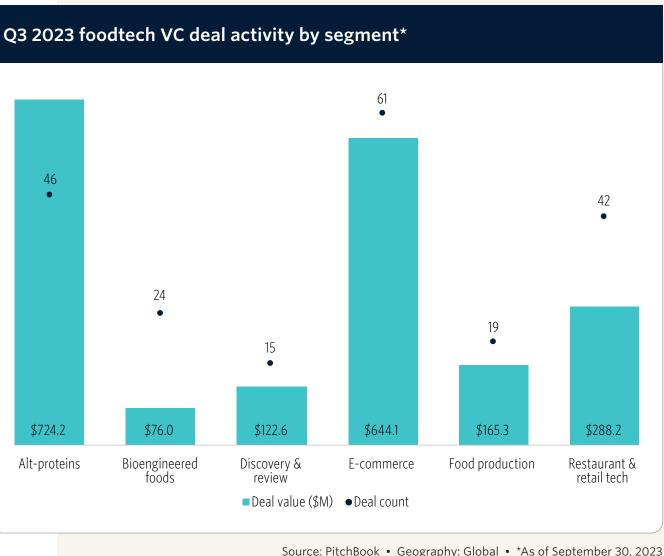
The third-party food delivery space continues to mature. DoorDash continues to gain market share over its rivals. In September, DoorDash achieved 65% market share in the US, followed by Uber Eats at 23%.<sup>1</sup> DoorDash's third guarter financial results indicated that revenues increased 27% YoY, while generally accepted accounting principles (GAAP) net loss is down to \$75 million from \$642 million in Q4 2022.<sup>2</sup> DoorDash's strong performance leaves little room for public competitors, let alone startups to gain footing. However, startup Chowbus differentiates itself by focusing on restaurant and grocery delivery from Asian vendors. The company raised a \$16.2 million Series D in August.

What is unclear is how many plant-based meals will be delivered next year versus this year. In the public sector, incumbent Beyond Meat continues to operate at a net loss and has cut revenue expectations twice. The company recently announced plans to cut 19% of its workforce to control costs.<sup>3</sup> Josh Kobza, CEO of Restaurant Brands International, the parent company to Burger King, recently discussed Burger King's plant-based strategy, stating that demand for plant-based options was stable, but the company had no plans to launch any new offerings in the US.<sup>4</sup> Although plant-

1: "Which Company Is Winning the Restaurant Food Delivery War?" Bloomberg Second Measure, Michal Kaczmarski, November 13, 2023.

- 2: "DoorDash Releases Third Quarter 2023 Financial Results," DoorDash, November 1, 2023.
- 3: "Beyond Meat Slashes Workforce as Business Model Is Under Fire," Food Dive, Elizabeth Flood, November 3, 2023.

4: "Burger King Won't Offer More US Plant-Based Options in Near Term," Bloomberg, Deena Shanker, November 3, 2023.

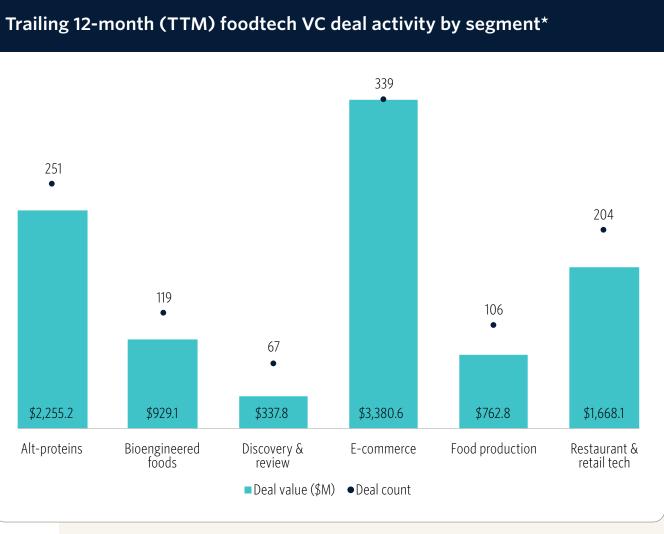


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## **VERTICAL UPDATE**

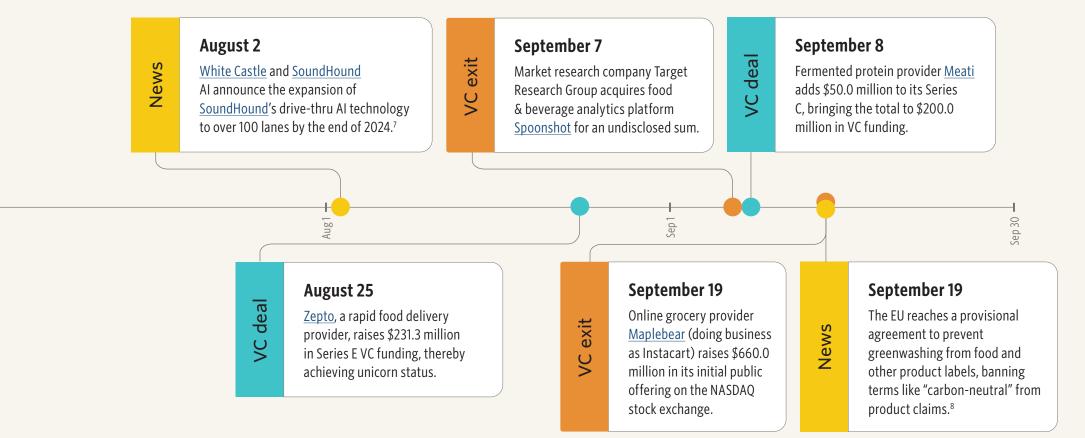
based VC funding is down significantly from its peak in Q3 2021, deal activity has been on the upswing; funding increased for the second quarter in a row. And not all plant-based companies are purely focused on building consumer brands. NotCo, a plant-based food manufacturer, is developing AI-based product development software to help companies develop plant-based products. At scale, this software could provide a steady revenue stream with high margins to complement NotCo's food business.<sup>5</sup>

AI technology is infiltrating many other areas in the food system. In the realm of quick commerce, several high-profile restaurant chains are piloting drive-thru automation technologies that use generative AI (GenAI), automatic speech recognition, natural language processing (NLP), and other tools that improve order fulfillment times, address labor shortages, and even upsell customers. Lead players, including Presto, SoundHound, and Valyant AI, have partnered with hundreds of restaurant locations. White Castle alone recently announced plans to roll out voice AI to over 100 locations by the end of 2024.<sup>6</sup> And this is only one of the many ways that technology is shifting how consumers interact with restaurants.



5: "NotCo 2.0: Plant-Based Company Makes Bigger B2B Push to be the 'ChatGPT of Food,'" Food Navigator, Ryan Daily, November 7, 2023. 6: "White Castle to Roll Out Voice AI to Over 100 Drive-Thrus," Restaurant Dive, Julie Littman, August 2, 2023.





7: "SoundHound and White Castle Commit to Expand Successful Drive-Thru AI Partnership," SoundHound AI, August 2, 2023. 8: "EU to Ban Greenwashing and Improve Consumer Information on Product Durability," European Parliament, September 19, 2023.

Jul 1

## Q3 VC deal summary

205 total deals

-27.3% QoQ deal count growth

> \$2.0B total VC raised

-13.9% QoQ deal value growth

### TTM summary

1,072 total deals

-42.6% YoY deal count growth

> \$9.2B total VC raised

## -71.1% YoY deal value growth

## Foodtech landscape





5 Food production

6 Restaurant & retail tech





## **Foodtech VC ecosystem market map**

Click to view the interactive market map on the PitchBook Platform.

Market map is a representative overview of venture-backed or growth-stage providers in each segment. Companies listed have received venture capital or other notable private investments.

Alt-proteins	Bioengineered foods	Discover
- Cultivated protein	Novel ingredients - Functional foods	- Food a
	E-Nutra Proteins Demetrix DouxMatok	THANKON WORLD
	bonumose COODI supplant Ocellibre WILLIES OF Accelerator Purely elizabeth. poppi	<mark>)</mark> 亞果
→ Fermented protein	- Future food forms - Molecular engineering	🛶 Kitche
PERFECT motif meati EVERY	yfood katefarms HUEI Cometeer waterdrop atomic torres atom	TASTEM
	Feed. hydrant GEM (1977) & Intestellas III nutrionix Collection G WinWin	10 Preci
Plant-based protein	Upcycled foods	Perso
IMPOSSIBLE E	Phenix CSS COMET OTRASURES Planetarians	dnanud
		И
Plant molecular farming		
MITÜKU POLÖPO FORIE PROTEIN		

### ry & review & beverage discovery SEASON SEATED C<sup>o</sup> Firework 電戦父突 🔞 junzi <mark>Cookat</mark> 🕈 Atmosfy 美食 en enablement software 一日日煮 innit fresco 下厨房 ADE Chefclub SIDECHEF & CULTUREHERO [aste<sup>\*</sup> nalized nutrition SEAPORT DIAGNOSTICS ZOC daytwo ONE DROP LEVELS **faeth** dnanudoe

## **Foodtech VC ecosystem market map**

Click to view the interactive market map on the PitchBook Platform.

Market map is a representative overview of venture-backed or growth-stage providers in each segment. Companies listed have received venture capital or other notable private investments.

E-commerce	Food production	Restaurant & retail tech
- Meal kits	Food intelligence & development	- Delivery robots - Sal
COULD SHORE     GOUSEO      SFreshRealm DAILY HARVEST COULS UNITY	pairwise To brightseed NURITAS () tastewise	
← Online grocers	Food waste & traceability	- Advanced vending - Gro
兴盛优选 gopuff entry with Flink チャート	Misfits Market Mill Olio WWINNOW FULL HARVEST	
RE Weee! Odd @ addute Kurly.	ODDBOX     AgriDigital     Hungry Harvest     topl     Sequence	
- Restaurant marketplaces	Sustainable packaging	- Kitchen tech & robotics - Gh
⑦     ⑦     ⑦     ⑦     ⑦     □    □    □    □    □    □    □    □    □    □    □    □    □	© geno. TBM RWDC StremperPack NFIII.	MISO ROBOTICS TOVALA SOFT Caffee ColdSnap* UK
EZCATER     LINEMAN     Pedidosta       Odeliverect     Collected and simplified.	Checkerspot	creator. 💾 Spinn Sotrista Michic
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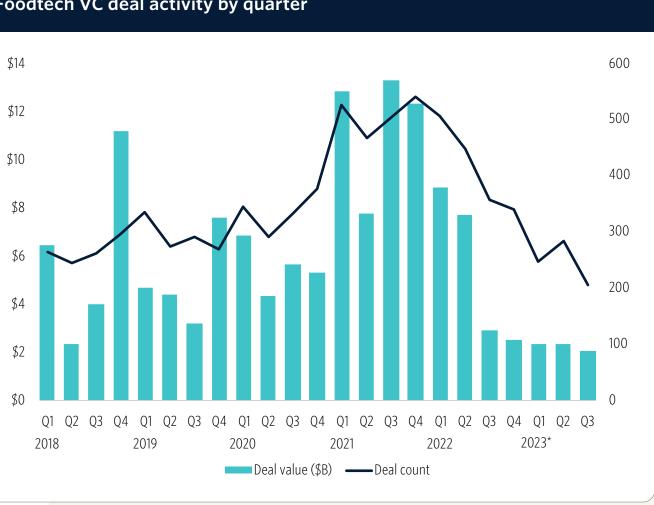


# VC activity

Foodtech VC deal activity slipped for the eighth straight quarter as headwinds continue to challenge the entire VC asset class. In Q3, we recorded \$2.0 billion invested across 205 VC deals, down 13.9% and 27.3%, respectively, QoQ. Top categories by deal value include online grocers, fermented protein, and plant-based protein. In the online grocery space, the largest deals of the quarter involved rapid delivery companies including Zepto and JOKR. Mumbai-based Zepto raised \$200.0 million at a \$1.4 billion post-money valuation, achieving unicorn status for the first time. JOKR, a New York-based rival to Zepto, has secured \$50 million in Series D funding. This comes after a series of strategic pivots by the company. In early 2022, JOKR withdrew its operations entirely from Europe, without finding a buyer for the region. The company then shifted its focus to the Latin American markets. In early 2023, JOKR sold off its business in Peru and exited from Chile and Colombia. The recent funding round comes as the company shifts the entirety of its efforts toward Brazil. The rapid delivery segment has experienced significant turbulence over the past year as funding has dried up; however, recent deal activity indicates that some investors maintain enthusiasm.

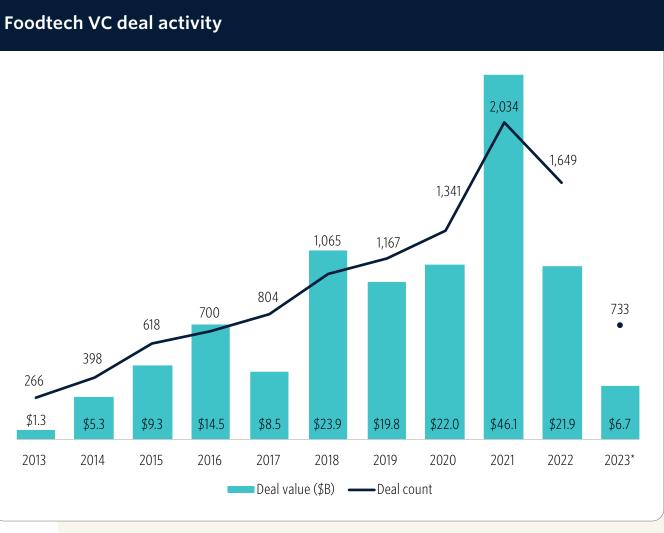
Despite market challenges, deal sizes and valuations reached an all-time high in 2023 YTD. The median VC deal size is up 33.3% versus 2022, reaching \$4.0 million. Likewise, the median premoney valuation is up 57.6% versus 2022, reaching \$23.6 million. Along both metrics, medians were up at every stage except venture growth. We attribute the decline in venture-growth-stage funding to the pullback of nontraditional investors, which have limited capital availability for startups, particularly those in late and venture growth stages. These mature startups may need to explore costly, nondilutive financing options such as venture debt or seek new equity investors at reduced valuations.

## Foodtech VC deal activity by quarter

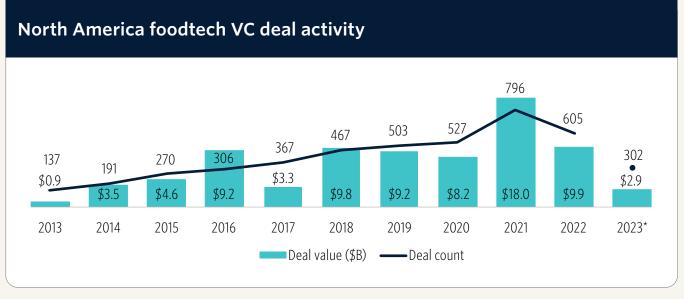


Source: PitchBook • Geography: Global • \*As of September 30, 2023

Exit activity continues to decline, mirroring VC activity. In Q3, we logged \$7.5 billion exited across 12 exits. This is down from a peak of \$34.3 billion exited across 34 exits in Q4 2021. One of the most notable exits of the year was Instacart, which listed on the NASDAQ exchange. This exit was highly anticipated by investors and startups alike, which were waiting for indications of a reopening IPO window. However, the verdict is not yet clear. Instacart took a steep valuation cut and has demonstrated impressive revenue growth to generate enough market interest to list. Post-IPO, the stock price has dropped nearly 20%. A considerable backlog of startups continues to wait for conditions to become more favorable for further public listings.

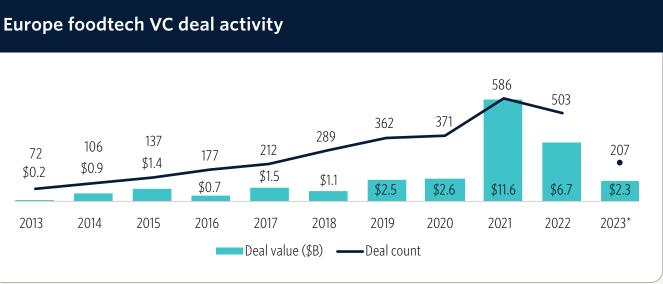


Source: PitchBook • Geography: Global • \*As of September 30, 2023



Source: PitchBook • Geography: North America • \*As of September 30, 2023

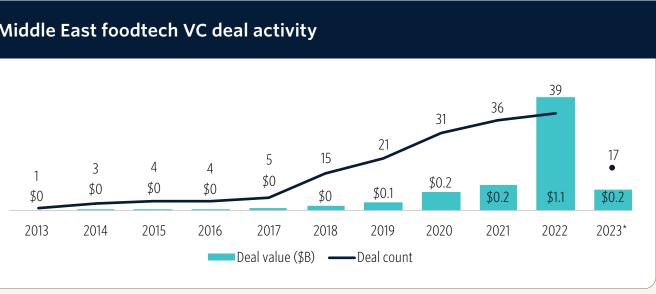






Source: PitchBook • Geography: Asia • \*As of September 30, 2023





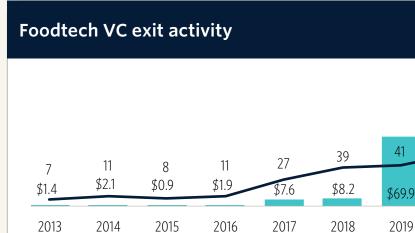
Source: PitchBook • Geography: Europe • \*As of September 30, 2023

Source: PitchBook • Geography: Middle East • \*As of September 30, 2023

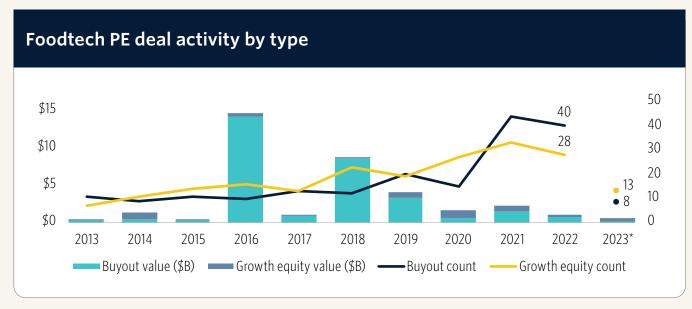
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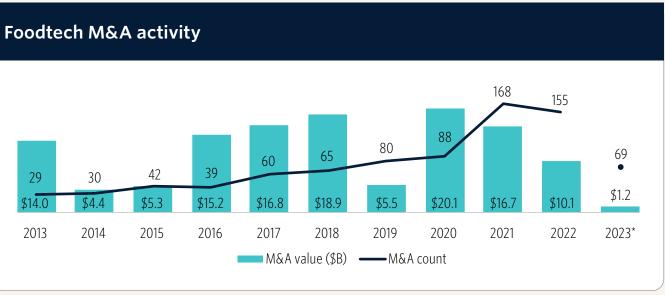
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Exit value (\$B)



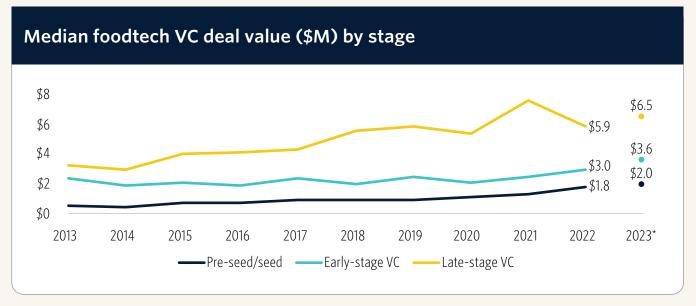
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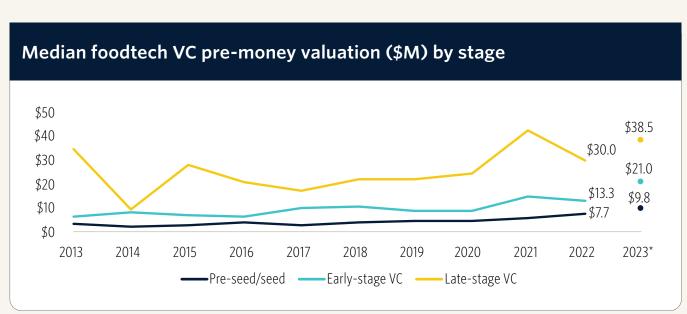


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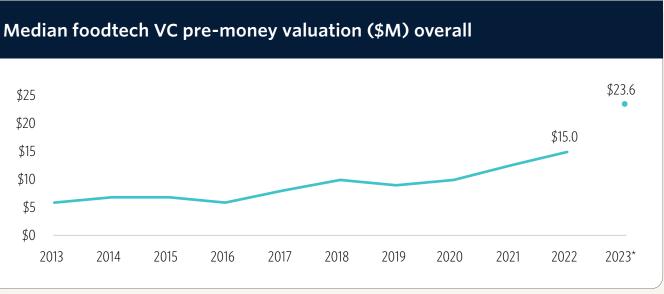
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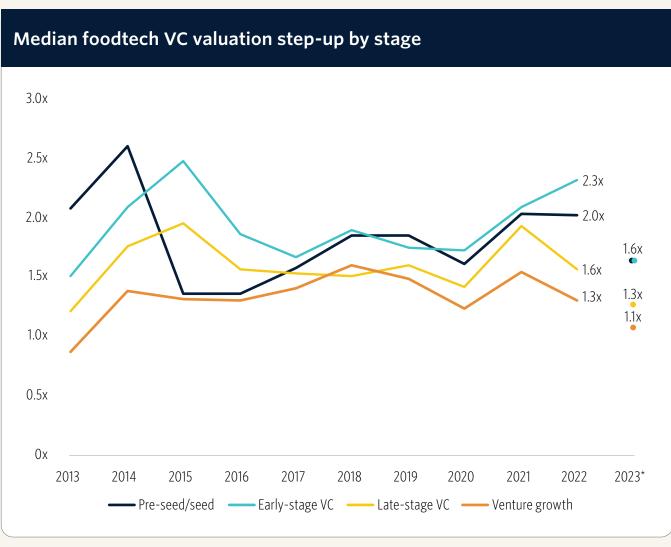




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## Key foodtech pre-seed/seed deals in Q3 2023\*

Company	Close date (2023)	Category	Stage	Deal value (\$M)	Lead investor(s)	Valuation step-up
Konscious	August 1	Plant-based protein	Seed	\$26.0	N/A	N/A
<u>Atmosfy</u>	August 9	Food & beverage discovery	Seed	\$12.0	Redpoint Ventures	N/A
Magic Mind	July 14	Functional foods	Seed	\$11.9	N/A	N/A
<u>Kaso</u>	July 12	Online grocers	Seed	\$10.5	N/A	N/A
<u>Jellatech</u>	August 22	Cultivated protein	Seed	\$7.0	byFounders	N/A
<u>Rarebird</u>	September 18	Functional foods	Seed	\$6.9	AgFunder	N/A
<u>Fermify</u>	July 12	Cultivated protein	Seed	\$6.6	Climentum Capital	N/A
Relocalize	September 6	Food intelligence & development	Seed	\$5.6	Waterpoint Lane, i4 Capital	N/A
<u>Clever Carnivore</u>	August 15	Cultivated protein	Seed	\$4.2	N/A	1.0x
<u>Robomart</u>	August 14	Delivery robots	Seed	\$4.0	W Ventures	N/A

## Key foodtech early-stage VC deals in Q3 2023\*

Company	Close date (2023)	Category	Stage	Deal value (\$M)	Lead investor(s)	Valuation step-up
<u>Oatside</u>	July 14	Plant-based protein	Series A	\$73.3	GGV Capital, Temasek Holdings	6.5x
Traceless Materials	September 25	Sustainable packaging	Series A	\$39.3	SWEN Capital Partners, United Bankers	N&A
Kernel Foods	August 10	Restaurant marketplaces	Series A	\$36.0	N&A	N&A
<u>Umiami</u>	August 3	Plant-based protein	Series A	\$36.0	Bpifrance	N&A
<u>Slope</u>	September 27	Sales & operations tech	Series A3	\$30.0	Union Square Ventures	1.4x
1000Farmacie	July 27	Restaurant marketplaces	Series A	\$25.0	HBM Partners, P101	N&A
<u>Clair</u>	July 6	Sales & operations tech	Early-stage VC	\$25.0	Thrive Capital	N&A
<u>Immediate</u>	July 25	Sales & operations tech	Early-stage VC	\$20.1	Castle Creek Capital, Launchpad Capital	N&A
Buffalo Market	July 5	Online grocers	Series A1	\$18.5	N&A	N&A
Foodology	July 19	Ghost kitchens	Early-stage VC	\$17.0	N&A	N&A

## Key foodtech late-stage VC deals in Q3 2023\*

Company	Close date (2023)	Category	Stage	Deal value (\$M)	Lead investor(s)	Valuation step-up
<u>Meati</u>	September 8	Fermented protein	Series C	\$200.0	Revolution	N/A
Silo	July 12	Online grocers	Series C	\$132.0	First-Citizens Bank & Trust, Koch Disruptive Technologies	N/A
Viome Life Sciences	August 18	Personalized nutrition	Series C	\$86.5	Bold Capital Partners, Khosla Ventures	0.5x
<u>Aphea.Bio</u>	July 11	Fermented protein	Series C	\$76.4	Innovation Industries, Korys Investments	N/A
<u>Enough</u>	August 21	Fermented protein	Late-stage VC	\$51.1	CPT Capital, World Fund	N/A
New Wave Foods	September 14	Plant-based protein	Series B	\$50.0	N/A	N/A
JOKR	September 20	Online grocers	Series D	\$50.0	Convivialité Ventures	0.6x
<u>NFW</u>	August 24	Sustainable packaging	Late-stage VC	\$44.7	N/A	N/A
<u>Meatable</u>	August 7	Cultivated protein	Series B	\$35.0	Agronomics	N/A
Simbe	July 13	Delivery robots, grocery store tech	Series B	\$29.1	Eclipse Ventures	N/A

## Key foodtech venture-growth deals in Q3 2023\*

### Company Close date (2023) Category Deal value (\$M) Lead investor(s Stage Online grocers Series E StepStone Group August 25 \$200.0 Zepto July 5 Fermented protein Unibio Late-stage VC \$70.0 N/A Cleveland Avenue Farmer's Fridge August 14 Advanced vending Series E \$30.0 DNS Capital Chowbus Restaurant marketplaces N/A August 3 Series D \$16.2 Plant-based protein, JUST Egg September 5 Late-stage VC \$16.0 VegInvest cultivated protein September 18 Kitchen tech & robotics **Miso Robotics** Series A1 \$15.6 N/A July 3 Online grocers Series F \$11.9 N/A Farmy July 5 Online grocers \$6.5 Colvin Late-stage VC P101 Artesian Partners July 12 Sales & operations tech \$2.3 SupplyNote Series A Venture Catalysts Antwork July 13 Delivery robots Late-stage VC N/A N/A

s)	Valuation step-up
)	1.3x
	N/A
Je,	1.0x
	1.1x
	N/A
	N/A
	0.3x
	N/A
rs, ts	N/A
	N/A

## Key foodtech VC exits in Q3 2023\*

Company	Close date (2023)	Category	Exit value (\$M)	Exit type	Acquirer(s)/index
<u>Maplebear</u>	September 19	Online grocers, restaurant marketplaces	\$7,453.6	Public listing	NASDAQ
<u>FoodStory</u>	July 20	Sales & operations tech	N/A	Acquisition	Line Man
<u>Shore</u>	September 11	Plant-based protein	N/A	Acquisition	Aquascot
<u>Smunch</u>	August 7	Ghost kitchens	N/A	Acquisition	Delivery Hero
<u>Eatigo</u>	September 19	Food & beverage discovery	N/A	Acquisition	FunNow
<u>Muscle Deli</u>	July 31	Meal kits, personalized nutrition	N/A	Acquisition	DM Mitsui Sugar Holdings
HARi&CO	July 27	Plant-based protein	N/A	Acquisition	Avril
<u>TenderCuts</u>	September 2	Online grocers	N/A	Acquisition	Good to go
<u>Spoonshot</u>	September 7	Food intelligence & development	N/A	Acquisition	Target Research Group
Qilibri	September 4	Meal kits	N/A	Acquisition	SP2L group

## Key foodtech incumbents\*

Company	Category	Key products	EV/NTM revenue	E١
Beyond Meat	Plant-based protein	Plant-based meat	4.0x	N,
<u>Delivery Hero</u>	Restaurant marketplaces	Restaurant delivery	1.2x	N,
<u>De' Longhi Group</u>	Kitchen tech & robotics	Smart appliances	1.1x	7.9
DoorDash	Restaurant marketplaces	Restaurant delivery	4.0x	94
HelloFresh Group	Meal kits	Meal kits	N/A	N
<u>Maplebear</u>	Online grocers	Grocery marketplace, e-commerce tools, smart shopping carts	N/A	N,
<u>Ocado Group</u>	Online grocers	Online grocery	2.7x	58
<u>Steakholder Foods</u>	Cultivated protein	3D-printed meal alternatives	N/A	N
The Hain Celestial Group	Plant-based protein	Plant-based dairy products	1.6x	12
Yelp	Restaurant recommendation & review	Restaurant reviews & ordering	1.5x	6.

Source: PitchBook • Geography: Global • \*As of September 30, 2023

## EV/NTM EBITDA N/A N/A 7.9x 94.0x N/A N/A 580.4x N/A 12.0x 6.5x

## Top pre-seed/seed VC-backed foodtech companies by total VC raised to date\*

Company	Category	VC (\$M) raised to date	Post-money valuation (\$M)	IPO probability	M&A probability	No exit probability
<u>Mowito</u>	Grocery store tech	\$336.0	N/A	N/A	N/A	N/A
Live Fish	Online grocers	\$134.2	N/A	N/A	N/A	N/A
Yummy	Restaurant marketplaces	\$82.8	N/A	1%	87%	12%
<u>Playter</u>	Sales & operations tech	\$59.3	N/A	7%	79%	14%
<u>Hyphen</u>	Kitchen tech & robotics	\$51.9	N/A	1%	84%	15%
Konscious	Plant-based protein	\$47.0	N/A	4%	53%	43%
Table22	Sales & operations tech	\$34.5	\$38.4	3%	93%	4%
New Culture	Fermented protein	\$30.0	N/A	3%	82%	15%
Calo	Meal kits	\$29.1	N/A	9%	72%	19%
Junzi	Food & beverage discovery	\$26.4	N/A	1%	89%	10%

## Top early-stage VC-backed foodtech companies by total VC raised to date\*

Company	Category	VC (\$M) raised to date	Post-money valuation (\$M)	IPO probability	M&A probability	No exit probability
Wonder	Ghost kitchens	\$850.0	\$3,850.0	9%	84%	7%
<u>Seasogood</u>	Plant-based protein	\$400.0	N/A	N/A	N/A	N/A
<u>Believer</u>	Cultivated protein	\$390.3	\$803.0	39%	50%	11%
Motif FoodWorks	Fermented protein	\$343.5	N/A	58%	37%	5%
<u>Livekindly</u>	Plant-based protein	\$342.5	\$1,220.0	15%	83%	2%
Zapp	Online grocers	\$262.3	\$377.0	65%	19%	16%
<u>A-Bite Technology</u>	Food intelligence & development	\$250.1	N/A	N/A	N/A	N/A
Jüsto	Online grocers	\$244.0	N/A	65%	33%	2%
<u>Wayflyer</u>	Sales & operations tech	\$236.5	\$1,600.0	63%	35%	2%
Redefine Meat	Plant-based protein	\$171.1	\$572.3	30%	62%	8%

## Top late-stage VC-backed foodtech companies by total VC raised to date\*

Company	Category	VC (\$M) raised to date	Post-money valuation (\$M)	IPO probability	M&A probability	No exit probability
Xingsheng Selected	Online grocers	\$5,440.0	\$12,000.0	N/A	N/A	N/A
Nuro	Delivery robots	\$2,132.0	\$8,600.0	90%	8%	2%
<u>CloudKitchens</u>	Ghost kitchens	\$1,550.0	\$15,000.0	N/A	N/A	N/A
<u>Flink</u>	Online grocers	\$1,207.3	N/A	56%	42%	2%
<u>Pupumall</u>	Online grocers	\$1,106.5	N/A	N/A	N/A	N/A
<u>Picnic</u>	Online grocers	\$1,093.2	N/A	34%	64%	2%
<u>Teya</u>	Sales & operations tech	\$1,044.9	\$1,000.0	48%	50%	2%
<u>Kitopi</u>	Ghost kitchens	\$835.0	\$1,550.0	73%	25%	2%
Yipin Shengxian	Online grocers	\$745.9	N/A	N/A	N/A	N/A
Dmall	Grocery store tech	\$636.5	\$2,300.0	N/A	N/A	N/A

## Top venture-growth VC-backed foodtech companies by total VC raised to date\*

Company	Category	VC (\$M) raised to date	Post-money valuation (\$M)	IPO probability	M&A probability	No exit probability
<u>Ele.me</u>	Restaurant marketplaces	\$7,335.5	\$30,000.0	N/A	N/A	N/A
Gopuff	Online grocers	\$4,934.7	N/A	96%	2%	2%
<u>Swiggy</u>	Restaurant marketplaces	\$3,530.4	\$10,616.8	70%	28%	2%
<u>Rappi</u>	Restaurant marketplaces	\$2,362.3	\$5,358.6	79%	19%	2%
Getir	Online grocers	\$2,269.0	\$6,500.0	66%	32%	2%
<u>Bolt</u>	Restaurant marketplaces	\$1,899.8	\$8,371.8	95%	3%	2%
Impossible Foods	Plant-based protein	\$1,862.5	N/A	97%	1%	2%
Trax Retail	Grocery store tech	\$1,087.5	N/A	87%	11%	2%
JUST Egg	Plant-based protein, cultivated protein	\$988.5	N/A	97%	1%	2%
<u>SpotOn</u>	Sales & operations tech	\$900.0	\$3,600.0	79%	19%	2%

## Most active foodtech accelerators by deal count since 2022\*

Accelerator	Deal count
Big Idea Ventures	26
Techstars	19
<u>Y Combinator</u>	19
ProVeg Incubator	18
<u>EIT Food</u>	18
Google for Startups Accelerator	11
<u>SKU</u>	6
Startup Wise Guys	6
Tech Incubator Program for Startups	6

Most active VC investors in foodtech companies in 2023\*

Accelerator
<u>SOSV</u>
10X Capital
<u>FJ Labs</u>
<u>Alumni Ventures</u>
500 Global
Cleveland Avenue
Sustainable Food Ventures
<u>Sprint VC</u>
Big Idea Ventures
Atlantic Food Labs

Source: PitchBook • Geography: Global • \*As of September 30, 2023

Deal count
23
10
9
7
7
6
6
6
6
6

Source: PitchBook • Geography: Global • \*As of September 30, 2023 CONFIDENTIAL. NOT FOR REDISTRIBUTION. PG 25

## **Top strategic acquirers of foodtech companies since 2019\***

Investor	Deal count	Investor type
<u>Delivery Hero</u>	8	Corporation
<u>Livekindly</u>	6	VC-backed company
Above Food	4	PE-backed company
DoorDash	4	Corporation
<u>Uber</u>	3	Corporation
<u>Getir</u>	3	VC-backed company
<u>REEF Technology</u>	3	PE-backed company
<u>Fresheasy</u>	3	PE-backed company
Glovo	3	Corporation
<u>Carrefour</u>	3	Corporation

### Source: PitchBook • Geography: Global • \*As of September 30, 2023

## **Top PE investors in foodtech companies since 2019\***

Investor	Deal count	Primary investor type
Eat & Beyond Global Holdings	7	PE/buyout
Ara Partners	4	PE/buyout
GroundForce Capital	4	Growth/expansion
<u>Verdane</u>	4	PE/buyout
Kohlberg Kravis Roberts	4	PE/buyout
InvestEco Capital	4	Growth/expansion
<u>General Atlantic</u>	3	Growth/expansion
Bregal Sagemount	3	PE/buyout
TPG	3	PE/buyout
SoftBank Investment Advisers	3	Growth/expansion
Warburg Pincus	3	PE/buyout

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## **Emerging opportunities**

GLP-1 drugs and foodtech

GLP-1 drugs inject innovation into foodtech.

Kitchen assembly robots

Robo-chefs are stirring up success in the kitchen.

# **GLP-1 drugs and foodtech**

One of the most important stories of 2023 is the rise of prescription diabetes drugs like Ozempic and Wegovy. These two drugs are brand names for the medication semaglutide, part of a category called GLP-1 drugs. Ozempic and Wegovy are injectable prescription medicines used to improve blood sugar levels in adults with Type 2 diabetes. They work by increasing insulin release and decreasing glucagon levels, which helps to lower blood sugar levels. In addition to the effect on blood sugar, Ozempic and Wegovy are also prescribed to treat obesity. According to Morgan Stanley Research, 7% of the US population, or 24 million people, will be taking these drugs by 2035.9

Explosive interest in these drugs has already created ripple effects in the food industry. In a recent interview, Walmart's CEO noted that they have observed "a slight pullback in overall" food purchases from consumers taking GLP-1 drugs.<sup>10</sup> A Morgan Stanley survey suggests that consumers taking these drugs may reduce daily calorie intake by 20% to 30%.<sup>11</sup> The survey found that participants reduced consumption of high-sugar and high-fat foods like confections, sugary drinks, and baked goods by up to two-thirds. The impact of GLP-1 drugs on food technology can be multifaceted, influencing various aspects of the industry. Some potential technology impacts include:

• **Revival of meal kits:** The increasing use of GLP-1 drugs like Ozempic may help revive the meal kit industry, leading to a demand for diabetic-friendly meal options and a focus on low-calorie, nutrient-dense recipes that align with the dietary needs of individuals managing diabetes. Meal

9: "Could Obesity Drugs Take a Bite Out of the Food Industry?" Morgan Stanley, September 5, 2023 10: "Ozempic Is Making People Buy Less Food, Walmart Says," Bloomberg, Brendan Case and Shelly Banjo, October 4, 2023. 11: "Could Obesity Drugs Take a Bite Out of the Food Industry?" Morgan Stanley, August 7, 2023.

kit companies like Gousto, Thistle, and Daily Harvest are likely to integrate nutritional guidance and educational resources into their services, offering customized meal plans for weight management and collaborating with healthcare professionals to create evidence-based meal solutions that support blood sugar management and overall health improvement.

- **Reformulation of products:** Food companies may reformulate their products to align with changing consumer preferences and health trends. This could involve reducing sugar and calorie content, increasing fiber and protein, and using alternative ingredients to create healthier food options that cater to individuals using drugs like Ozempic. Food intelligence and development tools such as Tastewise and Journey Foods will play an important role in helping food companies reformulate their products.
- Demand for innovative ingredients: The rise in the use of medications targeting diabetes and weight management may lead to an increased demand for innovative ingredients that offer health benefits, such as natural sweeteners, functional fibers, and plant-based proteins. DouxMatok, Oobli, and The Supplant Company are a few startups developing these novel ingredients.
- Consumers turn to personalized nutrition tools: Personalized nutrition companies have the potential to help individuals using drugs like Ozempic make informed dietary choices and more effectively monitor their nutritional intake. However, personalized nutrition providers may need

## **GLP-1 DRUGS AND FOODTECH**

to be adapted to meet the specific dietary requirements of individuals managing diabetes with the assistance of these drugs. This means incorporating features that emphasize blood sugar management, portion control, and low-glycemic-index food options. Additionally, software providers such as Levels, Una Health, and Thrive365 could integrate functionalities that provide tailored meal recommendations and recipe suggestions designed to support weight loss and improve overall metabolic health for users of GLP-1 drugs. It may also be necessary to collaborate with healthcare professionals and include educational resources on diabetes management and nutrition to better meet the needs of this consumer group.

Overall, GLP-1 drugs are likely to drive innovation and promote the development of a wider range of health-focused food products and services. This, in turn, will enable food producers to better align product offerings to consumer needs and empower consumers to adhere to dietary goals.

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# **Kitchen assembly robots**

## Introduction

Kitchen assembly robots are a cutting-edge technological solution to commercial kitchens' labor and efficiency challenges. These robots are designed to automate various tasks such as food preparation, cooking, plating, and even dishwashing, thus reducing the need for manual labor and enhancing overall productivity. Equipped with advanced sensors and precision capabilities, these robots ensure consistent quality and portion control, resulting in improved standardization of food products. Additionally, the integration of AI & machine learning (AI & ML) algorithms enables these robots to adapt to different recipes and cooking techniques, thereby catering to diverse culinary preferences and dietary requirements.

The implementation of kitchen assembly robots not only optimizes operational costs and labor management but also minimizes the risk of human error and cross-contamination, thereby upholding strict hygiene and safety standards. As the demand for efficient and sustainable food production continues to grow, the adoption of kitchen assembly robots is poised to revolutionize the culinary landscape, offering a seamless blend of innovation, precision, and culinary excellence.

## **Key players**

Several companies are actively involved in the development and manufacturing of kitchen assembly robots, each contributing unique innovations to revolutionize the food industry. Some notable players in this field include:

 Miso Robotics: Renowned for its innovative cooking robots, Miso Robotics specializes in creating collaborative and intelligent robotic systems, such as Flippy, a robotic kitchen assistant designed to assist with frying, grilling, and other cooking tasks in commercial kitchens and food service establishments. Miso's robots now cook food in popular restaurant chains, including CaliBurger, White Castle, and Chipotle, to cook burgers, fries, and tortillas.

- Remy Robotics: Remy is a robot-enabled ghost kitchen operating in France and Spain, though the company recently brought its model to New York. Although menu items are preassembled by human hands in a central location, meals are transported to distributed "node kitchens," where robots personalize and cook the meals.
- Eatch: Eatch is an automated kitchen that can produce 5,000 meals per day for food service and catering in a centralized kitchen.
- GoodBytz: GoodBytz is a modular robotic kitchen specializing in bowls that can produce up to 3,000 meals per day. It operates on a robot-as-a-service (RaaS) model that charges a monthly fee for the robot, as well as a variable fee for each meal produced.
- Kitchen Robotics: Kitchen Robotics has garnered attention for its Beastro automated food assembly systems, which are designed to streamline meal preparation and offer customizable options for consumers. The unit is a large, standalone kiosk capable of producing a variety of dishes, including bowls, soups, and salads.
- Moley Robotics: Known for its fully automated robotic kitchen equipped with robotic arms, specialized implements, and an extensive recipe library, Moley Robotics is developing integrated robotics systems for both consumer and commercial applications.

## **KITCHEN ASSEMBLY ROBOTS**

Creator: Renowned for its burger-making robot, Creator utilizes a Rube Goldberg-esque assembly line to create personalized burgers. The company appears to be in transition. Its website is dead, and known restaurant locations are closed. However, in mid-2023, a Sam's Club in Fayetteville, Arkansas, unveiled a Creator burger robot, thus indicating that the company may still have a future.

Other key players include Picnic and Nymble. These companies, among others, are at the forefront of innovating kitchen assembly robots, driving the industry toward greater automation and efficiency.

Notable exits include:

- Chowbotics: Recognized for its fresh food robot, Sally, Chowbotics specializes in creating customizable and hygienic salads, bowls, and snacks, catering to various dietary preferences and nutritional needs. The company was acquired by DoorDash in 2021. DoorDash trialed deploying salad robots to its DashMart stores, but ultimately decided to shut down operations roughly a year and a half later.
- Spyce: Spyce has gained recognition for its robotic kitchen system that automates the cooking process, delivering customizable, chef-quality meals within minutes. Its system can produce 350 meals per hour. Spyce was acquired by Sweetgreen in 2021 and launched a new restaurant concept called Infinite Kitchen, which leveraged the technology in mid-2023.

## **Benefits and challenges**

Kitchen assembly robots offer numerous benefits, including increased efficiency, improved consistency, enhanced food safety, and optimized labor management. By automating various tasks such as food preparation, cooking, and plating, these robots can significantly reduce operational

costs and increase production capacity, thereby leading to higher profitability for food service businesses. Moreover, kitchen assembly robots can ensure precise portion control and standardized food quality, thereby contributing to improved customer satisfaction and loyalty. Additionally, these robots can mitigate the risks of cross-contamination and ensure compliance with strict hygiene and safety standards, thus promoting a healthier and more sanitary food production environment.

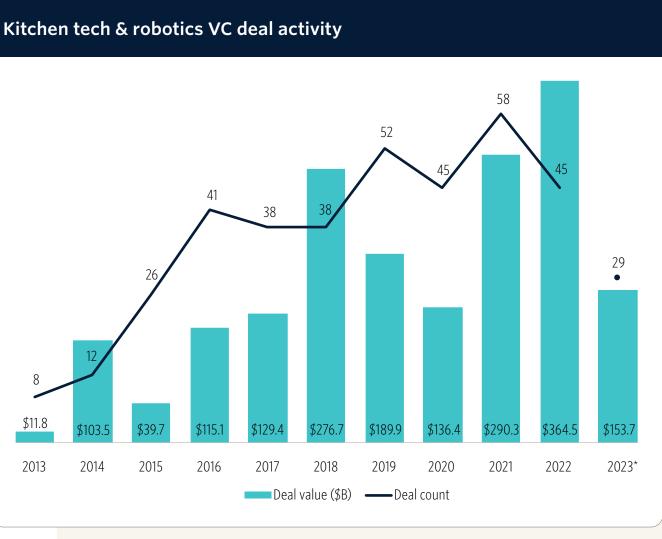
However, the adoption of kitchen assembly robots also presents certain challenges. Initial setup costs and the need for specialized maintenance and technical support can pose financial challenges for some businesses, especially small-scale enterprises. Additionally, integrating complex technology into traditional kitchen workflows may require staff training and adjustments to existing processes, thereby leading to potential resistance and workflow disruptions. Ensuring the seamless integration of robots into the kitchen environment and maintaining a balance between automation and human interaction remains a critical challenge. Centralized commissary kitchens and ghost kitchens may be ideal environments where consumer contact is at a minimum. Moreover, concerns related to data security and privacy, as well as the need for continuous updates and upgrades to keep pace with technological advancements, are also key considerations for businesses deploying kitchen assembly robots. Despite these challenges, the continued advancements in technology and the potential long-term benefits continue to drive the adoption of kitchen assembly robots in the food industry.

## Market trends

 Increased adoption of automation: The food industry is shifting toward automation and robotics, driven by the demand for improved efficiency, consistency, and food safety. The integration of kitchen assembly robots is becoming increasingly prevalent across various food service establishments, including restaurants, hotels, and ghost kitchens.

### **KITCHEN ASSEMBLY ROBOTS**

- Emphasis on customization and personalization: With evolving consumer preferences and dietary requirements, there is a growing focus on customizable and personalized food options. Kitchen assembly robots are being designed to accommodate various recipes and cooking techniques, thereby allowing businesses to cater to a diverse range of culinary preferences and specific customer needs.
- Integration of AI & ML: The integration of AI & ML technologies may enhance the capabilities of kitchen assembly robots, thus enabling them to adapt to dynamic cooking environments, optimize production processes, and improve overall operational efficiency. AI-driven systems may facilitate real-time data analysis, predictive maintenance, and recipe customization, contributing to a more streamlined and responsive food production ecosystem.
- Focus on sustainability and waste reduction: The growing emphasis on sustainable practices and waste reduction is influencing the development of kitchen assembly robots. Companies are working to minimize food waste, optimize ingredient usage, and implement eco-friendly packaging solutions, thereby aligning with the industry's broader sustainability goals and consumer preferences for environmentally conscious practices.
- **Expansion of cloud-based solutions:** The integration of cloud-based technologies is facilitating the remote management and monitoring of kitchen assembly robots, thereby allowing businesses to access real-time data, streamline operations, and ensure seamless connectivity between various components of the food production process. Cloud-based solutions are enabling businesses to centralize data management, facilitate scalability, and enhance overall system flexibility and adaptability.



Source: PitchBook • Geography: Global • \*As of September 30, 2023

## 

## Select company highlights

### SELECT COMPANY HIGHLIGHTS: MEATI

eat <b>mea</b>		
<b>Founded</b> 2014	<b>Total raised</b> \$283.0M	Last disclosed financing valuation \$325.0M
<b>HQ</b> Boulder, Colorado	<b>Last disclosed financing</b> Raised \$200.0M in a Series C	post-money
Exit Predictor		
IPO probability: 48%	M&A probability: 50%	No exit probability: 2%

Note: Probability data is based on PitchBook VC Exit Predictor methodology.

## **Business overview**

Meati is an alternative protein company specializing in whole-cut meat alternatives like steak and chicken cutlets. Its unique selling point lies in using mushroom root (mycelium) as the primary ingredient for its products. Unlike many other plant-based alternatives, Meati's whole-cut meats are made from 95% mushroom root, which results in a sustainable alternative to traditional animal-based proteins. Its mission is to provide delicious, protein-rich options while minimizing the negative environmental impact.

## Leadership overview

At the helm of Meati are two co-founders who bring a wealth of expertise to the table:

- Tyler Huggins, Ph.D., is a co-founder and the CEO of <u>Meati</u>. His background in bioengineering and passion for sustainable food led to the inception of Meati. His experience in both science and entrepreneurship equips him to navigate the challenges of scaling a foodtech company.
- Justin Whiteley, Ph.D., another co-founder, serves as the chief science officer. His expertise in mycology (the study of fungi) and materials science drives Meati's innovative approach.

## **Competition overview**

While Meati is carving its niche, it faces competition from other players in the plant-based meat industry, including:

- Meet Future: This Estonian startup is creating whole-cut chicken and seafood analogues using mycoprotein (protein derived from mushrooms). Its products meet the demand for "less processed" and "healthier" alternatives. Starting with white meat products, Meet Future is currently developing a chicken fillet prototype for both chicken pieces and whole-cut chicken breast. Mycoprotein's fibrous texture makes it an ideal base for these alternatives.
- Novameat: Based in Barcelona, Novameat is a pioneer in whole-cut meat alternatives. It uses a technology that compresses powder from wheat, field beans, or soy to make fillets and other options.
- Beyond Meat: Beyond Meat is a well-established competitor known for its pea-protein-based products. Its burgers and sausages have gained popularity globally.
- Impossible Foods: Impossible Foods focuses on replicating the taste and texture of real meat. Its heme-infused burgers have made waves in the industry.
- Quorn: Quorn, a UK-based company, uses mycoprotein for its meat substitutes. It offers a variety of products, including nuggets and meatballs.

## Outlook

Meati operates in a dynamic landscape, and its outlook depends on several factors, including:

- Growing consumer interest in plant-based diets and sustainability.
- Increasing investment in alternative protein companies.
- Continued innovation to product taste and texture to meet consumer expectations.

Meati will be challenged by an increasingly saturated market and the need to scale production without sacrificing quality. Opportunities include continued expansion of product lines (for example, Meati's Jerky Trio) and collaboration with restaurants and food service providers. Overall, Meati's unique approach and innovative products position it well for growth. As the world continues to shift toward more conscious food choices, Meati has the potential to play a significant role in shaping the future of protein consumption.

## SELECT COMPANY HIGHLIGHTS: MEATI

## Financing history

Series C	Series B	Series A	Series A	Seed
September 8, 2023	July 6, 2021	August 21, 2020	June 15, 2020	June 21, 2019
<b>Total raised:</b> \$200.0M	<b>Total raised:</b> \$50.0M	<b>Total raised:</b> \$25.0M	<b>Total raised:</b> \$3.2M	<b>Total raised:</b> \$4.8M
Pre-money valuation: N/A	Pre-money valuation: \$325.0M	Pre-money valuation: \$85.0M	Pre-money valuation: \$31.2M	Pre-money valuation: \$10.3M
Lead investor(s): Revolution	<b>Lead investor(s):</b> Acre Venture Partners, BOND Capital	Lead investor(s): Acre Venture Partners	Lead investor(s): BFG Partners	Lead investor(s): Congruent Ventures

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### SELECT COMPANY HIGHLIGHTS: ZEPTO

# zepto

<b>Founded</b> 2020	<b>Last financing</b> Raised \$231.3M in a Series E	
<b>HQ</b> Bangalore, India	<b>Last financing valuation</b> \$1.4B post-money	
Exit Predictor		
IPO probability: 88%	M&A probability: 10%	No exit probability: 2%

Note: Probability data is based on PitchBook VC Exit Predictor methodology.

## **Business overview**

Zepto is an Indian startup that focuses on ultrafast grocery and food delivery. From its founding in 2020, Zepto quickly gained recognition as one of the fastest-growing technology startups in Indian history. Initially branded as KiranaKart, Zepto facilitated grocery delivery by partnering with local kiranas (small, usually family-owned grocery shops in India). However, this approach struggled to gain traction. In 2021, it rebranded to Zepto and shifted its strategy to verticalize its operations, building a network of dark stores that can deliver to local customers in under 10 minutes on average. Zepto's mission is to provide lightning-fast delivery while maintaining quality and convenience for consumers.

## Leadership overview

- CEO Aadit Palicha launched his first startup, a ride-hailing service, at just 17 years old. After selling the company, he attended Stanford University before dropping out to start Zepto.
- As the Chief Technology Officer, Kaivalya Vohra brings technical expertise to Zepto. He met cofounder Palicha at Stanford while studying computer science engineering. Early in the pandemic, Vohra dropped out of Stanford with Palicha to launch Zepto.

### SELECT COMPANY HIGHLIGHTS: ZEPTO

## **Competition overview**

Zepto operates in a competitive landscape alongside other players in the Indian food delivery and grocery space, including:

- Zomato: A well-established player in the food delivery industry, Zomato launched Blinkit as its hyperlocal delivery arm. Blinkit competes directly with Zepto, focusing on ultrafast delivery of groceries and essential items. Zomato's existing user base and brand recognition give Blinkit an advantage.
- Dunzo: Backed by Alphabet, Dunzo has been a prominent player in the Indian hyperlocal delivery market. Its model revolves around 19-minute delivery of groceries, medicines, and other essentials. Dunzo's extensive network of delivery partners and wide service coverage pose competition to Zepto.
- Swiggy: Known for its food delivery services, Swiggy expanded into the quick-commerce segment with Instamart. Instamart offers ultrafast grocery delivery similar to Zepto's model. Swiggy's strong market presence and logistics infrastructure make Instamart a formidable competitor.

• JioMart: Part of Reliance Industries, JioMart entered the e-grocery space with a focus on connecting local kirana stores. While not a direct competitor in terms of delivery speed, JioMart's vast reach and aggressive expansion could impact Zepto's growth.

## Outlook

The outlook for Zepto appears promising yet challenging. As an Indian quick-commerce startup, Zepto's focus on ultrafast grocery and food delivery positions it well in a market where convenience and speed are paramount. Its rebranding and shift to verticalized operations with dark stores demonstrate agility. However, competition from established players like Blinkit, Dunzo, and Swiggy requires Zepto to maintain its unique selling proposition while addressing safety concerns for delivery workers. Expanding service offerings and a potential public listing offer growth opportunities. Overall, Zepto's blend of youthful energy, technological prowess, and commitment to rapid delivery makes it an exciting player in India's quick-commerce landscape.

## **SELECT COMPANY HIGHLIGHTS: ZEPTO**

## Financing history

Series E	Series D	Series C	Series B	Seed
August 25, 2023	May 2, 2022	December 20, 2021	October 31, 2021	January 7, 2021
<b>Total raised:</b> \$231.3M	<b>Total raised:</b> \$200.0M	<b>Total raised:</b> \$100.0M	<b>Total raised:</b> \$60.0M	<b>Total raised:</b> \$0.5M
Pre-money valuation: \$1,431.3M	Pre-money valuation: \$900.0M	Pre-money valuation: \$570.0M	Pre-money valuation: \$225.0M	Pre-money valuation: \$7.0M
<b>Lead investor(s):</b> Goodwater Capital, Nexus Venture Partners, StepStone Group	Lead investor(s): Y Combinator	Lead investor(s): Y Combinator	<b>Lead investor(s):</b> Glade Brook Capital Partners	<b>Lead investor(s):</b> Global Founders Capital

## Seed

### November 18, 2020

Total raised: \$0.1M

Pre-money valuation: \$2.5M

Lead investor(s): N/A

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As the private markets continue to grow in complexity and competition, it's essential for investors to understand the industries, sectors and companies driving the asset class.

Our Industry and Technology Research provides detailed analysis of nascent tech sectors so you can better navigate the changing markets you operate in—and pursue new opportunities with confidence.

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