FieldBots™ Radar

Biggest fleet 2025

The Ranking

An independent overview of the world's largest cleaning robot fleets, compiled with transparency and detail.

Starting at Page 05

The Analysis

Insights into adoption patterns, regional dynamics, and the forces shaping automation.

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The Interviews

Perspectives from industry experts and ambassadors driving cleaning robotics forward.

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Editorial

Dear Readers,

It is a great pleasure to welcome you to the second edition of The Biggest Fleet. What started just one year ago as an ambitious attempt to map the world's largest cleaning robot fleets has quickly become a reference point for our industry.

This year, the ranking more than doubled in size. This remarkable expansion tells us two things: more operators are moving from pilots to true fleets, and more organisations see the value of being part of a global benchmark. The result is not only a longer list, but also a richer picture of how cleaning robotics is scaling across sectors and regions.

What makes 2025 especially exciting is the diversity of stories behind the numbers. We see which sectors are accelerating: retail remains the king of adoption, while others, such as hospitality or public institutions, are now stepping into the spotlight. We see regional contrasts: the U.S. consolidating its role as a global hotspot, Asia rising with broad momentum, and Central & Eastern Europe emerging with surprising strength.

Beyond the ranking itself, this initiative is about learning. Each year, The Biggest Fleet delivers insights that matter not only to operators but also to manufacturers, distributors, and service partners. Understanding where fleets grow, where they stall, and how they adapt to local realities helps all of us navigate this fast-moving market.

I am also delighted that this year's brochure features interviews with our three continental ambassadors. Their perspectives from the Americas, Asia, and Europe highlight how cleaning robotics is not just a global industry but also a local story, shaped by culture, infrastructure, and business models. On behalf of the FieldBots team, I would like to thank all partners, contributors, and participants who made this second edition possible. Your openness and collaboration are what give this ranking its unique value.

Warm regards,

Alexander Feil
CEO, FieldBots

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Important Remarks

1

Expansion of the Ranking

The 2025 ranking is more than twice the size of last year's. Many fleets were only established this year, reflecting the accelerating adoption of cleaning robotics across industries. At the same time, FieldBots expanded its research team and methods. This allowed us to verify fleets that existed before but were not captured in the 2024 edition.

2

Changed Methodology

Compared to last year's edition, the methodology has been adjusted to improve readability without altering the underlying weighting principle. Previously, one standard robot counted as the equivalent of five microbots, and microbots were therefore included at one-fifth of a unit. To simplify interpretation, this ratio is now expressed in the opposite direction: microbots count as 1 and standard robots count as 5. The relative weighting remains identical to previous years, but the presentation aligns more intuitively with how readers assess scale.

3

Carried-Over Figures

For some fleets, no new figures were available this year, so the numbers were carried over unchanged from the 2024 ranking. As a result, natural attrition, replacements, or expansions within those fleets are not reflected in the current dataset. The ranking remains a snapshot: as accurate as possible, but inevitably incomplete where updated data could not be obtained.

4

Partial Visibility from Public Sources

Fleets added through press releases and public announcements often represent only a portion of the actual deployment. For example, if a manufacturer highlights the sale of 50 robots to a cleaning company, those 50 units will appear in the ranking, regardless of whether the company already operates a larger, undisclosed fleet of other robots.

5

China: The Incomplete Picture

China remains a large, though no longer entirely, blind spot in the ranking. Numerous Chinese press reports describe substantial robot penetration, yet research inquiries often went unanswered and announcements frequently refer to "several hundred robots" without providing concrete figures. While the number of Chinese fleets included has increased, the true scale of robotization appears to be significantly larger than the ranking suggests.

Ranking 2025

As of November 15, 2025

	Fleet Operator	Country	Robots	Microbots	Score	Manufacturers
1	Walmart [2)]	US	1850	0	9250	Tennant
2	Travelodge [2)]	GB	0	7500	7500	RoboVac KILLIS
3	QuikTrip [2)]	US	1200	0	6000	Pudu
4	Sam‘s Club [2)]	US	600	0	3000	Tennant
5	Kum & Go [2)]	US	400	0	2000	ICE Cobotics
6	Mitie [2)]	GB	72	800	1160	Perfect Little Company, Gausium
7	Denner AG [2)]	CH	200	0	1000	Pudu
8	B+N Referencia Zrt. [1)]	HU	176	0	880	Robin
9	ROSSMANN [2)]	DE	170	0	850	Gausium
10	Geiger Facility Management [1)]	DE	72	209	569	ICE Cobotics, Zaco, i-team
11	Flagship Facility Services [2)]	US	100	0	500	SoftBank
12	Summerset Retirement Villages [2)]	NZ	92	0	460	Gausium
13	SMRT [2)]	SG	89	0	445	Avidbots, LionsBot, Gausium
14	Daiei [2)]	JP	79	0	395	SoftBank
15	Schnucks [2)]	US	78	0	390	Tennant
16	Faxe Kommune [2)]	DK	0	370	370	i-team

	Fleet Operator	Country	Robots	Microbots	Score	Manufacturers
17	Aramark [2)]	US	70	0	350	Pudu
18	Apleona Infra Services GmbH [1)]	DE	68	4	344	Gausium, Hako, Kärcher, LionsBot, SoftBank
19	DHL Australia [2)]	AU	65	0	325	Avidbots
20	FamilyMart [2)]	JP	0	300	300	BIB
21	Group Atalian [2)]	FR	55	0	275	Gausium
22	Huazhu Group [2)]	CN	50	0	250	Gausium
23	Gonder Facility Services GmbH [1)]	DE	44	14	234	Gausium, Kärcher, LionsBot, Pudu SoftBank, Zaco
24	Carrefour [2)]	FR	45	0	225	Gausium
25	Götz-Management-Holding AG [1)]	DE	43	9	224	Cleanfix, Gausium, i-team, Kemaro, Nilfisk, Pudu, Tennant, Ultenic, Zaco
26	Vetter Pharma-Fertigung GmbH & Co. KG [1)]	DE	14	142	212	Cleanfix, ICE Cobotics, iRobot, Gausium, Kemaro, SoftBank
27	Albert [2)]	CZ	40	0	200	Tennant
28	Dorfner Gruppe [1)]	DE	37	8	193	Cleanfix , Gausium, i-team, Kärcher, Pudu, SoftBank, Tennant, Yarbo
29	Vebego Deutschland [2)]	DE	0	160	160	Nexaro
29	Veolia Solutions Deutschland GmbH [1)]	DE	32	0	160	Gausium, LionsBot
31	Dubai Airports [2)]	AE	30	0	150	Gausium, SoftBank

	Fleet Operator	Country	Robots	Microbots	Score	Manufacturers
31	MAXI [2)]	SR	30	0	150	Gausium
33	Healthcare Company [3)]	US	0	142	142	Cleanfix
34	Facility Management Company [3)]	US	27	1	136	Gausium, LionsBot, Pudu, Zaco
35	Zurich Airport Ltd [2)]	CH	26	0	130	Gausium
36	Millennium Services Group Limited [2)]	AU	25	0	125	Avidbots
36	RaceTrac Travel Centers [2)]	US	25	0	125	ICE Cobotics
38	Denver Public Schools [2)]	US	23	0	115	Tennant
39	WERNER companies GmbH [1)]	DE	12	42	102	Gausium, Kärcher, Nexaro, Pudu, Tennant
40	Mömax Austria [2)]	AT	20	0	100	Gausium
40	Obayashi Corporation [1)]	JP	20	0	100	Kemaro
42	Facility Management Company [3)]	CH	18	1	91	Cleanfix, Gausium, Kärcher, Pudu, Zaco
43	Blechschmidt Industrie und Gebäudeservice GmbH [1)]	DE	15	2	77	Cleanfix, Pudu, Rosiwit
44	Shenzhen Metro Line [2)]	CN	15	0	75	Ecovacs Professional
45	Dr. Schilhan Group [1)]	AT	12	10	70	LionsBot, Pudu, SoftBank, Zaco
46	Incheon Airport [2)]	KR	12	0	60	Gausium
46	Medirest [2)]	GB	12	0	60	LionsBot

	Fleet Operator	Country	Robots	Microbots	Score	Manufacturers
48	Dr. Sasse Gruppe [2)]	DE	0	50	50	Nexaro
48	McDreams [2)]	DE	0	50	50	Nexaro
48	Piepenbrock [2)]	DE	0	50	50	Nexaro
51	Bowling Green State University [2)]	US	9	0	45	ICE Cobotics
51	Healthcare Company [3)]	CH	3	30	45	Cleanfix, Gausium
53	Prisma Hypermarket [2)]	FI	8	0	40	Gausium
53	SPIEGELBLANK Reinigungsunternehmen Heinz Kuhnert GmbH & Co. KG [1)]	DE	6	10	40	Gausium, Pudu, Zaco
53	Valamar [2)]	HR	0	40	40	Nexaro
56	Chongqing East Railway [2)]	CN	7	0	35	Gausium
56	Sands Expo & Convention Centre [2)]	SG	7	0	35	Aoting Bots
56	University of British Columbia [2)]	CA	7	0	35	A&K Robotics
59	ELVI [2)]	LV	6	0	30	Gausium
59	IKI [2)]	LT	6	0	30	Gausium
59	J&H Family Stores [2)]	US	6	0	30	ICE Cobotics
59	Royal Caribbean / Star of the Seas [2)]	US	6	0	30	Gausium

	Fleet Operator	Country	Robots	Microbots	Score	Manufacturers
59	University of Toronto [2)]	CA	6	0	30	Gausium
59	Veritiv [2)]	US	6	0	30	Tennant
65	Hospitality Company [3)]	SG	0	26	26	Cleanfix
65	Facility Management Company [3)]	AT	0	26	26	Cleanfix
67	Da Nang Airport [2)]	VN	5	0	25	Gausium
67	Inholland University of Applied Sciences [2)]	NL	5	0	25	Gausium
67	Marktkauf Prenzlau [2)]	DE	5	0	25	Pudu
67	Stadtforum Dresden [2)]	DE	0	25	25	Nexaro
71	Gemeente Enschede [2)]	NL	0	22	22	Nexaro
72	Pittsburgh International Airport [2)]	US	4	0	20	Nilfisk
72	Queen Alia International Airport [2)]	JO	4	0	20	Gausium
72	RIMI [2)]	LV	4	0	20	Gausium
72	Sardar Vallabhbhai Patel International [2)]	IN	4	0	20	Peppermint
72	Trafford Centre Manchester [2)]	GB	4	0	20	LionsBot
77	Dalhousie University [1)]	CA	2	9	19	Cleanfix, Tennant

	Fleet Operator	Country	Robots	Microbots	Score	Manufacturers
78	Swedish Municipality [2)]	SE	0	17	17	Cleanfix
79	Kelowna Airport [2)]	CA	3	0	15	Gausium
79	Mars Netherlands [2)]	NL	3	0	15	Kärcher
79	Nanjing Deji Plaza [2)]	CN	3	0	15	Ecovacs Professional
79	Rema [2)]	DK	3	0	15	Gausium
79	Rochester Institute of Technology [2)]	US	3	0	15	Avidbots
79	Thiruvananthapuram Airport [2)]	IN	3	0	15	Peppermint
79	Valia Commercial Center [2)]	ES	3	0	15	Gausium
86	Furniture Store [3)]	DE	0	13	13	Cleanfix
87	ACCIONA [2)]	ES	0	12	12	Nexaro
88	Airport Salzburg [2)]	AT	2	0	10	Gausium
88	Alvaro Cunqueiros Hospital [2)]	ES	2	0	10	Gausium
88	Chhatrapati Shivaji Maharaj International Airport [2)]	IN	2	0	10	Peppermint
88	Healthcare Company [3)]	CH	0	10	10	Cleanfix
88	Intercontinental Vienna [2)]	AT	2	0	10	Gausium

	Fleet Operator	Country	Robots	Microbots	Score	Manufacturers
88	Penn State University [2)]	US	2	0	10	CenoBots
88	VAHLE Group [2)]	DE	2	0	10	CenoBots
95	Healthcare Company [3)]	DE	0	8	8	Cleanfix
95	Manufacturer of Windows and Facade Elements [3)]	CH	0	8	8	Cleanfix
97	Apotheke Dr. Hysek AG [1)]	CH	0	3	3	Cleanfix

Sources

1) Verified submission by ranking participant
2) Press article / press release see appendix
3) Anonymized, verified as tamper-proof by FieldBots Cloud

How we calculate the “Score” column:

The aggregated number of microbots and robots is the decisive factor for placement in the “Biggest Fleet 2025” ranking. The division between microbots and robots is made to account for the widely varying investment costs. All FM robots with a purchase price of less than $10,000 before tax are counted as microbots. Microbots are counted as one point, while robots are counted as five.

Do you want to participate?

Show the world that your company takes robotics seriously and spend a few minutes to become part of the only ranking for cleaning robot fleets.

Appendix

ACCIONA:
https://www.linkedin.com/posts/nexaro_setting-new-standards-in-commercial-cleaning-activity-7389639904676298752-QMVq?utm_source=share&utm_medium=member_desktop&rcm=ACoAABjkL00B4FuHLbFnnAq3XmnyvrdeH0yR5BQ

Airport Salzburg:
https://gausium.com/de/case/enhancing-cleaning-efficiency-at-salzburg-airport-with-gausiums-scrubber-50/

Albert:
https://www.robotics247.com/article/albert_czech_republic_deploys_40_autonomous_tennant_scrubbers_brainos

Alvaro Cunqueiros Hospital:
https://gausium.com/case/alvaro-cunqueiro-hospital/

Aramark:
https://www.aramark.com/newsroom/news/2025/august/aramark-facilities-robots

Atalian:
https://europaproperty.com/atalian-signs-global-agreement-with-gausium-to-redefine-cleaning-with-technology/

Bowling Green State University:
https://nbc24.com/news/local/bgsu-adopts-autonomous-floor-cleaning-robots

Bright Blue Whale World:
https://www.instagram.com/gausiumofficial/reel/C2t0BLNxALs/

Carrefour:
https://gausium.com/de/resource/retail-case-book/

Chhatrapati Shivaji Maharaj International Airport:
https://www.internationalairportreview.com/news/223107/autonomous-cleaning-robots-enhance-hygiene-at-csmia/

Chongqing East Railway:
https://gausium.com/de/case/chongqing-east-railway-station/

Daiei:
https://link.springer.com/article/10.1007/s13162-022-00240-4

Da Nang Airport:
https://www.instagram.com/gausiumofficial/p/DA5eqhYxoYv/?img_index=1

Denner AG:
https://www.blick.ch/wirtschaft/autonome-putzhilfe-aus-china-denner-stellt-200-reinigungsroboter-fuer-discountfilialen-ein-id20910376.html

DHL Australia:
https://www.mmh.com/article/autonomous_cleaning_bots_coming_to_your_dhl_neighborhood_facility

Dr. Sasse Gruppe:
https://nexaro.com/en/pages/robot-vacuum-cleaners-for-building-cleaning?srsltid=AfmBOor5CKJPWgKZA1mmbszspBQjlLxCoBMbul-dPoOEms6vlKcornNa

Dubai Airports:
https://www.zawya.com/en/press-release/companies-news/dubai-airports-roll-out-major-robotic-cleaning-programme-iws5dta2

ELVI:
https://gausium.com/de/resource/retail-case-book/

FamilyMart:
https://asia.nikkei.com/Business/Retail/Japan-s-FamilyMart-to-roll-out-cleaning-robots-at-300-convenience-stores

Faxe Kommune:
https://i-teamdanmark.dk/robotsucces-i-faxe-kommune/

Flagship Facility Services:
https://flagshipinc.com/SoftBank-deploy-100-cobots-less-six-months/

Gemeente Enschede:
https://www.linkedin.com/posts/diego-f-camacho_crohill-slimmerschoon-innovatie-activity-7373764131725783041-_GEz?utm_source=share&utm_medium=member_desktop&rcm=ACoAABjkL00B4FuHLbFnnAq3XmnyvrdeH0yR5BQ

Huazhu Group:
https://gausium.com/case/chinas-hotel-giant-boosts-business-success-with-gausium-vacuum-40-diffuser/

IKI:
https://gausium.com/de/resource/retail-case-book/

Incheon Airport:
https://www.einpresswire.com/article/734721043/bigwaverobotics-deploys-sollink-enhanced-cleaning-robot-at-incheon-international-airport

Inholland University of Applied Sciences:
https://www.linkedin.com/posts/rob-alkema-1446846_smartservant-schoonmaakrobots-phantas-activity-7358465680276422658-mbT_?utm_source=share&utm_medium=member_desktop&rcm=ACoAABjkL00B4FuHLbFnnAq3XmnyvrdeH0yR5BQ

Intercontinental Vienna:
https://gausium.com/de/case/intercontinental-wien-elevates-hotel-cleanliness-with-gausium-vacuum-40-and-phantas/

J&H Family Stores:
https://chainstoreage.com/midwest-convenience-chain-jh-family-stores-deploys-cleaning-robots

Kelowna Airport:
https://wltribune.com/2022/10/09/flying-into-the-future-new-cleaning-robots-at-kelowna-airport-first-in-canada/

Kum & Go:
https://cstoredecisions.com/2023/02/06/kum-go-to-integrate-cleaning-robots/

Mars Netherlands:
https://www.linkedin.com/posts/k%C3%A4rcher-nederland_robotic-cleaning-customercentric-activity-7258154622274486272-hr2C/?utm_source=share&utm_medium=member_desktop&rcm=ACoAABjkL00B4FuHLbFnnAq3XmnyvrdeH0yR5BQ

MAXI:
https://www.instagram.com/gausiumofficial/p/C11IROorWUc/?img_index=1

Marktkauf Prenzlau:
https://www.linkedin.com/posts/fenkarobotics_reinigungsroboter-im-lebensmitteleinzelhandel-activity-7356560499624284160-CYt-?utm_source=share&utm_medium=member_desktop&rcm=ACoAABjkL00B4FuHLbFnnAq3XmnyvrdeH0yR5BQ

McDreams:
https://nexaro.com/en/blogs/news/mcdreams-with-nexaro-technology?srsltid=AfmBOoolxlo4yWywleXggq4GgEC-NP7J9fioUAYZiDSOH1gPAGuTTpo3

Medirest:
https://remoracleaning.com/cleaning-robots-to-support-nhs-hospitals-across-the-uk/

Millennium Services Group Limited:
https://technologymagazine.com/company-reports/millennium-services-group-cleaning-new-tech

Mitie:
https://www.mitie.com/wp-content/uploads/2023/07/Mitie-ESG-Report-2023.pdf

Mömax Austria:
https://gausium.com/de/case/momax/

Nanjing Deji Plaza:
https://www.ecovacsb2b.com/news/detail?id=68

Penn State University:
https://www.linkedin.com/posts/activity-7262558742389387265-TY0-?utm_source=share&utm_medium=member_desktop

Piepenbrock:
https://www.linkedin.com/posts/piepenbrock_piepenbrock-menschindermitte-nexaro-activity-7336648488895631362-Sdp6?utm_source=share&utm_medium=member_desktop&rcm=ACoAABjkL00B4FuHLbFnnAq3XmnyvrdeH0yR5BQ

Pittsburgh International Airport:
https://blueskypit.com/pit-first-u-s-airport-to-deploy-ultraviolet-cleaning-by-robots/

Prisma Hypermarket:
https://gausium.com/de/resource/retail-case-book/

Queen Alia International Airport:
https://www.zawya.com/en/press-release/companies-news/airport-international-group-partners-with-mena-facilities-management-to-deploy-high-tech-cleaning-robots-at-qaia-o00xshq4

QuikTrip:
https://intellectia.ai/news/stock/pringle-robotics-reports-autonomous-robots-have-cleaned-1-billion-square-feet-in-commercial-properties-across-the-country

RaceTrac Travel Centers:
https://www.cstoredive.com/news/racetrac-floor-scrubbing-robots-travel-centers-ice-cobotics/694882/

Rema:
https://gausium.com/de/resource/retail-case-book/

RIMI:
https://gausium.com/de/resource/retail-case-book/

Rochester Institute of Technology:
https://edscoop.com/rit-surface-cleaning-robots/

ROSSMANN:
https://www.rationell-reinigen.de/drogeriemarktkette-rossmann-ordert-170-reinigungsroboter-288712/

Royal Caribbean / Star of the Seas:
https://www.linkedin.com/company/cleanbotsfinland/posts/?feedView=all

Sam's Club:
https://corporate.walmart.com/about/samsclub/news/2022/01/27/sams-club-begins-national-deployment-of-automated-inventory-analytics-robots

Sands Expo & Convention Centre:
http://em.aotbot.com/en/news/3-24.html

Schnucks:
https://www.Brain Corp.com/resources/webinar-recap-how-schnucks-uses-robotics-innovation-to-deliver-better-customer-experiences-71ab6

Sardar Vallabhbhai Patel International:
https://deshgujarat.com/2024/04/02/ahmedabad-airport-gets-four-intelligent-cleaning-robots/

Shenzhen Metro:
https://www.ecovacsb2b.com/news/detail?id=73

SMRT:
https://www.facebook.com/SMRTCorpSG/posts/pfbid02itQHXYok9PpQxkb3Wd4CiTBwous1gXMgVtCp77BL7qBpPQerWDb3g9tV4RozzMcml?rdid=ltqgQyPDaQAkKe8q#

Stadtforum Dresden:
https://nexaro.com/en/pages/case-stadtforum-dresden

Summerset Retirement Villages:
https://agedplus.co.nz/2025/08/27/mode-technology-partners-with-summerset/

Thiruvananthapuram Airport:
https://www.thehindu.com/news/cities/Thiruvananthapuram/thiruvananthapuram-airport-introduces-intelligent-robots-for-cleaning/article68931822.ece

Trafford Centre Manchester:
https://www.linkedin.com/posts/lionsbot_after-working-continuously-with-killis-and-activity-7216707144589484032-JPrM?utm_source=share&utm_medium=member_desktop

Travelodge:
https://www.travolution.com/news/technology/travelodge-to-mobilise-uks-first-army-of-robo-vacuum-cleaners-for-hotels/

University of British Columbia:
https://news.ubc.ca/2018/10/innovative-floor-cleaning-robots-now-scrubbing-the-halls-of-ubc/

Unitversity of Toronto
https://www.fs.utoronto.ca/news/cleaning-robots-helping-fs-work-smarter/

VAHLE Group:
https://kareima.de/2023/06/22/anwenderbericht-autonome-reinigung/ (verified in 2024, link no longer available)

Valamar:
https://www.linkedin.com/posts/nexaro_nexaro-robot-vacuum-cleaners-boost-efficiency-activity-7359168984287428609-pOYa?utm_source=share&utm_medium=member_desktop&rcm=ACoAABjkL00B4FuHLbFnnAq3XmnyvrdeH0yR5BQ

Valia Commercial Center:
https://gausium.com/de/resource/retail-case-book/

Vebego Deutschland:
https://www.vebego.de/media/ys5djn5e/vebego-setzt-auf-cobotik_einfuehrung-von-nexaro-robotern_pm.pdf

Veritiv:
https://www.tennantco.com/en_us/resources/resource-center/case-studies/warehousing-logistics/veritiv-t16amr.html

Walmart:
https://roboticsandautomationnews.com/2019/04/10/brain-corp-to-supply-another-1500-floor-cleaning-robots-to-walmart/21817/

Zurich Airport Ltd:
https://taski.com/de/taski-partners-with-zurich-airport-ltd-to-introduce-robots-for-enhanced-cleaning/

Five Observations from the Biggest Fleet 2025

What this year's expanded dataset reveals about adoption patterns, technology choices, and regional shifts.

1

A Ranking That More than Doubled

The 2024 edition listed 42 fleets. In 2025, the dataset spans 97 already. Three forces explain the jump. First, more operators crossed the threshold from pilot to genuine fleet. Second, the ranking itself gained internal legitimacy, making approvals to apply faster and easier. Third, the Biggest Fleet team expanded research capacity after 2024's strong reception, combining open applications via biggestfleet.com with direct fleet verification through FieldBots and independent research.
The result isn't just a longer list; it's a broader, better-documented snapshot of the market.

2

Parallel Worlds — Robots vs. Microbots

Across the 97 valid fleets, the pattern is stark: 59 are robots-only (≈61%), 20 are microbots-only (≈21%), and only 18 are mixed (≈18%). Of the 18 mixed fleets, 12 are operated by cleaning service providers. This indicates that the cleaning sector, more than any other, must adapt to the diverse operational realities and use cases of their clients. It also supports last year's hypothesis that FM service providers are increasingly evolving – indeed, needing to evolve – into robotics specialists. And while there are more mixed fleets than in the previous year, the vast majority of fleets are still clearly separated between microbots and larger robots.

3

More Fleets, but Still Small

The market broadened, but most fleets remain modest. Using the Radar Score (robots × 5 + microbots), 50 of 97 fleets (≈51.5%) sit at or below 50 — the equivalent of ≤10 scrubbers or ≤50 microbots. Even outside the Top-10, many retail and service fleets still live in the double digits. The growth story in 2025 is broad rather than deep: far more entrants, but not yet many mega-rollouts.

4

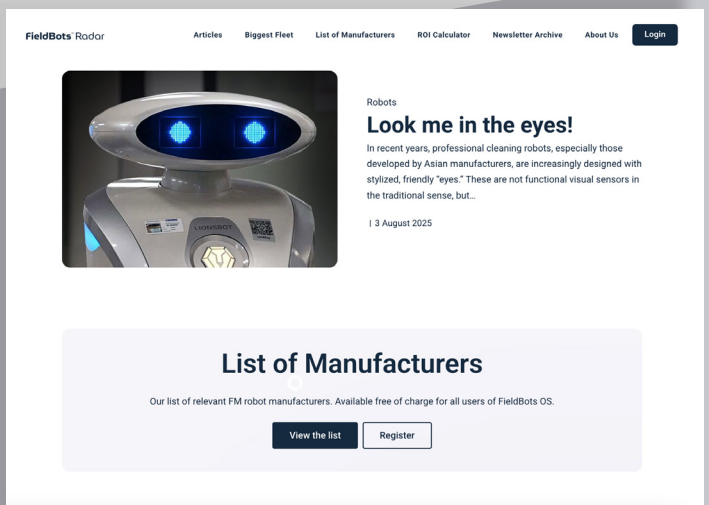
Eastern Europe Steps Forward

Momentum within Europe is tilting east rather than south. B+N (HU) enters the global Top-10 at #8 with 176 self-developed robots (Radar Score 880). Albert (CZ) ranks #27 with 40 Tennant units. MAXI (SR) appears #31 with 30 Gausium machines. IKI (LT) and ELVI (LV) rank #59 with 6 Gausium robots. Read together, these cases signal openness to automation in Central and Eastern Europe; by contrast, no Southern European operator reached comparable scale in this dataset.

5

A German-Speaking Microbot Path

The DACH region shows a distinct trajectory among facility managers: microbots at scale. Vetter Pharma-Fertigung GmbH & Co. KG (#26) lists 142 microbots (Cleanfix, iRobot). Vebego Deutschland (#29) runs 160 (Nexaro). Further down the table, Dr. Sasse Gruppe (#48) 50 (Nexaro), McDreams (#48) 50 (Nexaro), Piepenbrock (#48) 50 (Nexaro), a Healthcare Company (#51) 30 (Cleanfix), Stadtforum Dresden (#67) 25 (Nexaro). These don't look like isolated pilots but established operating models already. The broader picture: Some DACH facility managers are carving a microbot-centric path, while most large international fleets still ride on scrubbers.



Beyond the Annual Ranking.

At radar.fieldbots.com we offer independent news, reports, and manufacturer listings on cleaning robotics. No registration, no ads, completely free. Visit radar.fieldbots.com.

Retail is King

Retail has emerged as the single most important driver of cleaning robot adoption worldwide. No other sector combines standardized layouts, high traffic, and measurable return on investment in quite the same way.

The Biggest Fleet 2025 ranking confirms this: Walmart, QuikTrip, Sam's Club, Denner, and ROSSMANN all sit among the top ten global operators of robotic cleaning fleets. Together, they represent not only scale but also regional diversity – from American hypermarkets to European discount and drugstore chains. Their trajectories, compared to the 2024 ranking, show how retail is shaping robotics adoption across every major market.

Regional Adaptation and Store Formats

The U.S. market favors scale. Walmart (#1) and Sam's Club (#4), a Walmart subsidiary, both powered by Tennant machines, operate massive fleets across their large-format stores. With QuikTrip (#3), another heavyweight steps onto the automation stage, deploying Pudu machines — from the Chinese manufacturer — in significant numbers across the North American continent. One reason for this shift is that, unlike Walmart locations, QuikTrip stores have far more limited space — too limited for Tennant's large machines. In general, however, the consistent layouts of convenience-store formats provide ideal conditions for autonomous scrubber-dryers, which can seamlessly switch between ride-on and self-driving modes.

In Japan, FamilyMart (#20) shows the opposite extreme. Its compact outlets demand smaller robots designed for cluttered spaces. FamilyMart's units, developed with BIB, not only clean but also carry merchandise baskets, doubling as moving product displays — an inventive use of limited square footage.

Europe presents yet another model. Denner (#7) in Switzerland and ROSSMANN (#9) in Germany deploy mid-sized units from Pudu and Gausium. These are well suited to European store sizes, but scaling them might be complicated for some retailers because of decentralized ownership structures. Many outlets are franchise or semi-independent, meaning adoption requires dozens of individual decisions rather than one centralized rollout.

Operational and Economic Challenges

Rolling out robots at retail scale introduces significant challenges. Cleaning schedules are one of the most sensitive issues. In the United States and Asia, many stores operate 24/7, meaning robots must navigate among customers during open hours. In Europe and in Japan, where closing hours are more common, robots can run at night — but this requires integration with alarm systems, access controls, and staff routines.

Deployment logistics are another hurdle. Robots must pass through automated staff or logistics doors, be stored in small backrooms, and connect to charging infrastructure that was never designed for them. Every practical obstacle multiplies when hundreds of stores are involved.

Maintenance and service at fleet level become critical. One broken machine in a single store may not matter, but widespread downtime can compromise entire chains. Service partners must provide rapid response, spare parts, and software support across regions. This raises questions about who can handle such scale, and at what cost.

The economics of robotics also vary. In the U.S., robots may replace outsourced cleaning staff, making cost savings straightforward to calculate. In Europe, where in-store staff often perform cleaning themselves, robots change internal workflows rather than reduce headcount. Justifying investment then depends not only on cost but on consistency, safety, and freeing staff for customer-facing tasks.

Finally, the issue of fragmentation looms large. Chains not in the ranking like the German Edeka operate as semi-independent outlets.

Unlike our Glorious Five, which can make a single corporate decision, European adoption for the others might require convincing hundreds of local managers. This creates a distribution and deployment challenge for both retailers and their service partners.

What has happened in the retail sector since 2024?

QuikTrip (USA) – New to the ranking and immediately landing at #3
New to the ranking and immediately landing at #3, QuikTrip enters with an impressive deployment of 1,200 Pudu robots. The Tulsa-based convenience retail chain operates 953 stores across the Midwest and South and is known for clean, well-run locations and consistently strong customer service. Its nationwide rollout of Pudu cleaning robots—implemented together with Pringle Robotics—has drawn widespread attention, with countless TikTok and Instagram videos showing customers delighted by the autonomous cleaners.

Denner AG (Switzerland) – also new and entering directly at #7
Denner, Switzerland's third-largest supermarket chain with about 860 outlets, appears in the 2025 ranking for the first time. It now operates around 200 Pudu robots, making it the highest-ranked Swiss retailer. Denner's entry reflects the growing momentum of robotics in European discount supermarkets, even amid the challenges of decentralized ownership and varying store formats.

ROSSMANN (Germany) – Rank #9 in 2025 (up from #16 in 2024)
ROSSMANN, one of Europe's largest drugstore chains with about 4,700 outlets across multiple countries, has made the biggest leap among the five highlighted retailers. From 45 robots in 2024, it has expanded to 170 Gausium units in 2025. This rapid scale-up demonstrates how quickly European retailers can move once pilots prove successful, particularly in standardized drugstore formats where frequent light cleaning is required.

Supermarkets from the Baltic states –
New to the ranking and showing strong early momentum
The Baltic region, long recognized for its digital-forward mindset, enters the ranking with several supermarket fleets that reflect a notably low barrier to adopting robotics. ELVI (Latvia), IKI (Lithuania), and RIMI (Latvia) all appear with compact but growing

deployments, indicating that retailers across the Baltics clearly see the potential of cleaning automation. While the current fleet sizes remain modest, the presence of multiple operators in the ranking underscores a regional readiness to scale—and a cultural openness to robotics that positions the Baltics as one of Europe's most promising growth markets for autonomous cleaning.

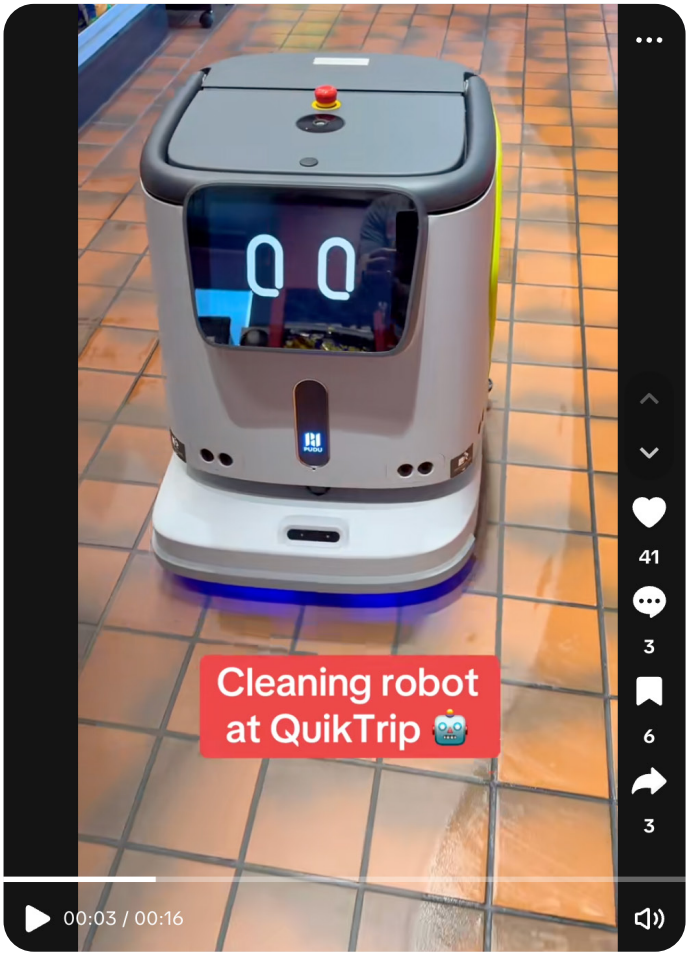
Outlook and Future Trends

The Biggest Fleet 2025 data highlights how retail robots achieve above-average utilization, cleaning larger areas more consistently than in other sectors. Yet the real growth opportunity lies ahead. Small-format retail — gas stations, kiosk outlets, and urban mini-markets — remains underserved. Current robots are often too bulky or expensive, while microbots are still limited to vacuuming. The missing piece is a compact, affordable scrubbing robot under $10,000, a development that could unleash a dramatic expansion of retail fleets worldwide.

Conclusion

The story told by the Biggest Fleet 2025 ranking is clear: retail chains are not just adopting cleaning robots, they are defining the standards for scale, efficiency, and adaptation. Walmart and Sam's Club represent consistency and scale in the U.S., FamilyMart shows innovation in compact formats, Denner makes a strong debut for Swiss supermarkets, and ROSSMANN demonstrates Europe's ability to scale once proof of concept is established.

Retail, with its unique combination of scale, standardization, and operational necessity, remains the sector driving global adoption of cleaning robots. And as the next generation of compact machines arrives, the transformation will not stop at hypermarkets or drugstores — it will extend to the smallest outlets that form the backbone of daily retail life.



https://www.tiktok.com/@fardinvousoughian

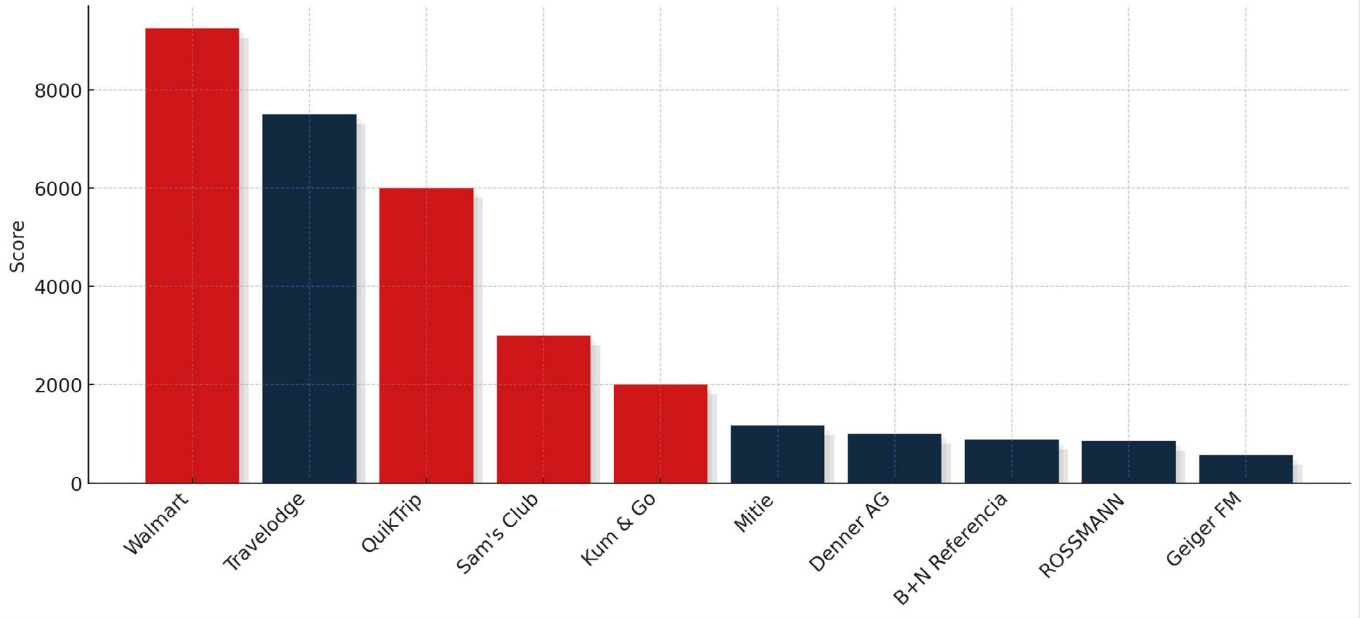
The Pudu CC1 robots in use at QuikTrip are evidently not seen as a disturbance, but as a noteworthy innovation.

The U.S. Is the Global Hotspot for Cleaning Robot Fleets

The new Biggest Fleet 2025 ranking confirms what was already visible a year ago: the United States is about to become the epicenter of large-scale cleaning robot deployment. Four American operators sit inside the global Top-5, but only twenty North American fleets appear in the ranking.

Walmart retains the number one position, Sam's Club stays in the Top-5, and the overall footprint of U.S. fleets remains massive. Yet the biggest shock came with QuikTrip, which entered the ranking for the very first time and immediately landed in third place. This debut not only reshapes the Top-10 but also marks the first significant presence of Pudu in the American fleet landscape. The Tennant–Brain Corp combination, long dominant in the U.S., suddenly faces a credible competitor. The American core is stable, but it might evolve substantially over the next years.

Chart 1: Top 10 Cleaning Robot Fleets 2025 by Radar Score



Grocery, Warehouse, Convenience

What makes the U.S. stand out is not simply "retail" as a single category, but the coexistence of very different store formats. Walmart and Schnucks represent the grocery chains, operating vast floor areas with predictable layouts that reward high utilization. Sam's Club exemplifies the warehouse club model with extreme standardization, wide aisles and large-scale throughput. Convenience chains such as QuikTrip, Kum & Go, RaceTrac or J&H Family Stores show that even smaller formats can scale fast if their layouts are standardized and their corporate structures allow centralized decision-making. Each of these models produces its own robotics pattern, but all push the U.S. further ahead of other regions.

Investment Style and ROI

The way American operators invest reinforces this dynamic. Rollouts tend to be blunt and national: once a pilot works, hundreds of machines follow. Return on investment is straightforward, because robots often replace outsourced cleaning services and the savings are easy to measure. Financing models, whether capital expenditure, leasing or OPEX contracts, are widely available, and the balance sheets of major U.S. chains support rapid, eight-figure commitments. In Europe the picture is more fragmented, with decisions often made store by store; in the U.S., scale is built into the corporate structure.

Seems to have fallen straight out of a cleaning automator's dreams: hypermarkets offer robots wide aisles and plenty of space.

OEM Concentration Under Pressure

The American Top-10 has long been shaped by Tennant hardware combined with Brain Corp autonomy. That partnership provided a reliable path to scale and gave the U.S. its uniform fleet backbone. The arrival of Pudu at QuikTrip breaks this pattern. It shows that American retailers are open to alternatives and that the OEM landscape may shift quickly once a new supplier proves itself in one of the large national chains. The question is no longer whether Tennant–Brain Corp can scale, but whether they can defend their dominance as others enter.

Service and Integration

Distribution and service remain open questions. Traditional providers such as Imperial Dade or BradyPLUS dominate cleaning chemicals and equipment, but it is still unclear whether they can manage fleets of robots with the same efficiency. New models are emerging, among them RobotLAB with a franchise-style, robots-only service system. The U.S. may thus decide not only who supplies the machines, but also what kind

of partner network supports them. Classical distributors and specialized newcomers may compete side by side in the years ahead.

A Fleet-Ready Ecosystem?

One explanation for the American lead is what could be called a fleet-ready ecosystem. Service networks are dense, there is a willingness to adjust infrastructure — alarms, restricted access, charging logistics — and automation enjoys broad cultural acceptance. This remains more hypothesis than data point, but it helps explain why U.S. fleets are scaled faster and run larger than their European or Asian counterparts.

Beyond Retail

The ranking also shows that the U.S. presence is wide as well as tall. Contractors such as Aramark operate large fleets that rival retailers in size. Healthcare appears as an outlier, as it supplies the only significant American operator relying on microbots rather than large scrubbers. Universities and school systems, from Denver Public Schools to Penn State, are experimenting with mid-sized fleets. Pittsburgh International Airport demonstrates that transportation hubs are joining in, while smaller travel and gas station chains extend the convenience model beyond QuikTrip and Kum & Go. The breadth of these cases underlines that the U.S. is not only strong at the top but across multiple sectors.

Outlook

The signal from 2025 is unmistakable. If every year another American chain enters the Top-10 with hundreds of robots, then the U.S. will soon constitute a market of its own for large fleets. Convenience chains are especially well positioned to accelerate, but contractors and public institutions are also beginning to scale. The dominance of Tennant and Brain Corp is no longer guaranteed, and the rise of Pudu as a credible alternative makes the contest sharper. For now, the U.S. establishes itself as the global hotspot of cleaning robot fleets — and the race for how this dominance will be organized has only just begun.

More Insights?

Watch the video interview with our Biggest Fleet ambassador for the Americas, Elad Inbar, on YouTube — simply scan the QR code.

Public Institutions: How Transportation, Education, Healthcare, and Public Services Are Building Cleaning Robot Fleets

The Biggest Fleet 2025 ranking shows that the public sector is carving out its own space in cleaning robotics. It remains far smaller than retail, but its growth is unmistakable. Public-sector fleets now reach a combined Radar Score of 1,831, up 145 percent from 747 in 2024.

In other words, the sector operates at almost 2.5 times last year's scale. While still mid-sized operators, these fleets are unusually visible and help shape how the broader public encounters cleaning robots.

Public institutions do not rely on robots designed specifically for schools, hospitals, airports, or community portfolios. Instead, they draw from machines originally developed for retail or general-purpose cleaning. This results in a diverse landscape across suppliers and platforms. Unlike retail, where a few OEM partnerships dominate, public-sector fleets remain widely distributed across multiple brands.

Public Services: A Newly Emerging Pillar

A fourth pillar enters the ranking in 2025 under the broader term Public Services, representing municipalities, public-service operators, and community-focused organisations. This category brings together varied but structurally similar portfolios.

The largest operator is Faxe Kommune (Score: 370). Additional fleets appear at Stadtforum Dresden (Score: 25), Gemeente Enschede (Score: 22), and several Swedish municipal operators with mid-sized microbot deployments.

Public-service portfolios are typically fragmented across administrative buildings, community facilities, and local venues. This structure makes microbots particularly suitable. Although still early, the segment indicates that robotics is beginning to take hold across a wider set of everyday public operations.

Transportation: High Visibility Across Airports and Transit Operators

Transportation remains the most publicly visible strand of adoption. The largest operators in 2025 are Dubai Airports (Score: 150) and Zurich Airport (Score: 130). Transit operators follow with fleets at Shenzhen Metro Line (Score: 75), Incheon Airport (Score: 60), Chongqing East Railway (Score: 35), and Da Nang Airport (Score: 25). Additional fleets appear at Sardar Vallabhbhai Patel International Airport (Score: 20), Pittsburgh International Airport (Score: 20), and Queen Alia International Airport (Score: 20). Smaller but notable fleets are found at Kelowna Airport (Score: 15), Thiruvananthapuram Airport (Score: 15), Chhatrapati Shivaji Maharaj International Airport (Score: 10), and Salzburg Airport (Score: 10).

The spread across regions is wide with Europe, Asia, and North America all represented. Airports continue to use robots both as signals of modernisation and as tools for operational efficiency. The entrance of metro and rail operators suggests movement beyond aviation toward a broader transit segment. Much of the large-scale potential in concourse and high-traffic areas remains only partially automated.

Healthcare and Senior Care:
A Cautious Expansion

Healthcare entered the ranking cautiously in 2024 and continues to grow at a measured pace. The largest operator is Summerset Retirement Villages (Score: 460), followed by a U.S. healthcare network (Score: 147). Other operators include a healthcare provider in Switzerland (Score: 45), Alvaro Cunqueiros Hospital (Score: 10),

and a few more in German-speaking countries.

Robots are used primarily in entrance halls, corridors, and waiting areas. These spaces allow automation to visibly reinforce hygiene standards while clinical zones remain off-limits. Current devices are still not suitable for intensive care, treatment rooms, or surgical environments. As a result, fleets remain focused on front-of-house operations. The year-over-year growth is clear but still conservative compared to other sectors.

Education: From Showcase to Operation

Education expanded from a marginal category in 2024 into a broader, operationally relevant segment in 2025. The institutions appear with clearly measurable fleets. The largest operator is Denver Public Schools (Score: 115). They are followed by Bowling Green State University (Score: 45), the University of British Columbia (Score: 35), Toronto University (Score: 30), Inholland University (Score: 25), and the Rochester Institute of Technology (Score: 15). Additional institutions include Dalhousie University (Score: 19) and Penn State University (Score: 10).

The distribution remains heavily North American with only a small share of Radar Scores originating in Europe. Each institution has selected a different supplier ranging from Tennant and ICE Cobotics to A&K Robotics, Gausium, Avidbots, and CenoBots. Deployments continue to focus on hallways, atriums, and similar public areas. Classroom and dormitory automation remains unresolved and explains why fleets are expanding but still moderate in absolute size.

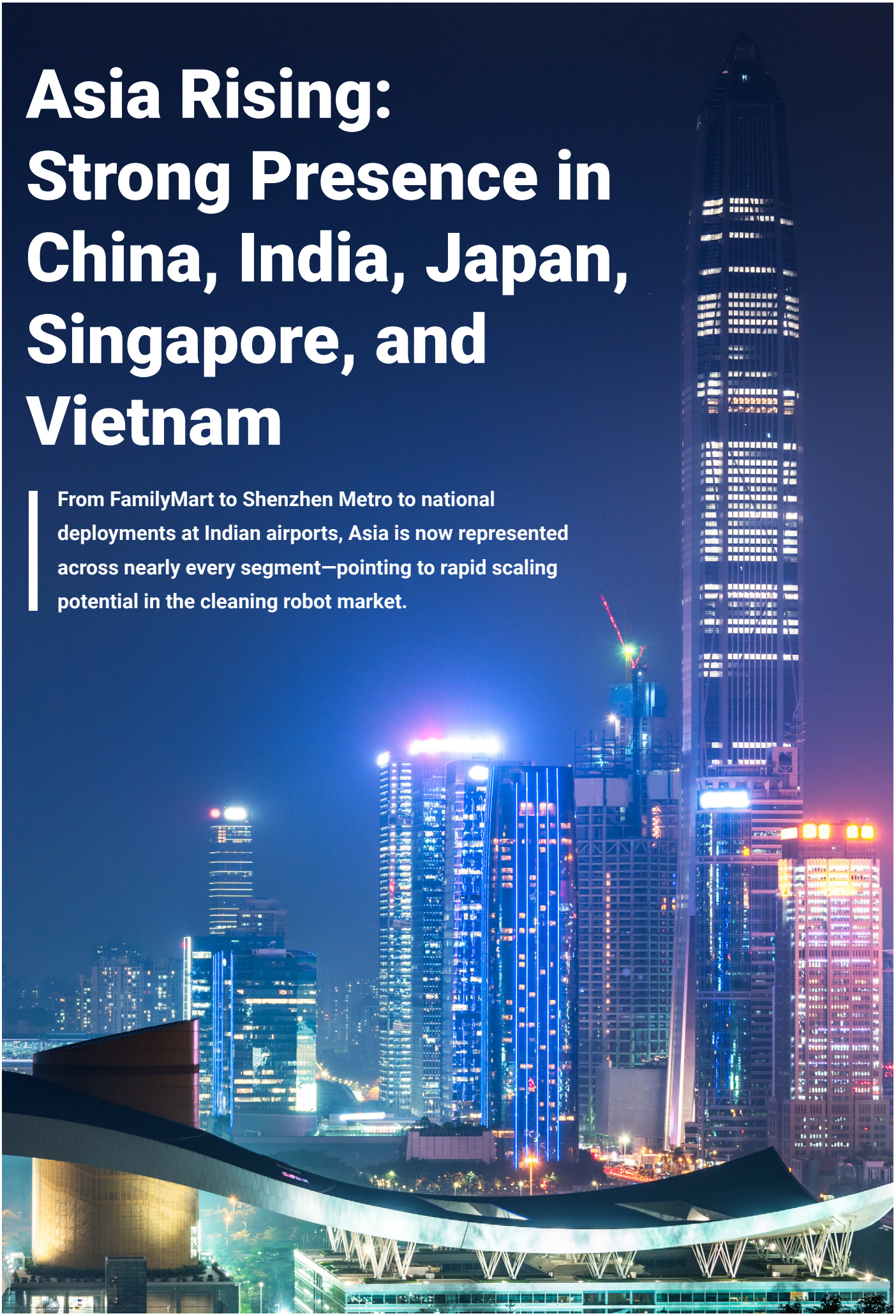
The Shape of Public-Sector Adoption

Education, healthcare, transportation, and public services together form a four-pillar landscape within the public sector. Their combined Radar Score reaches 1,831 in 2025 compared to 747 in 2024, an increase of 145 percent and almost 2.5 times last year's level. Transportation contributes the most visible fleets, education continues to diversify, healthcare expands cautiously, and public-service operators appear in the ranking for the first time.

Although smaller than retail in absolute numbers, the public sector remains disproportionately visible. Robots in airports, schools, hospitals, and local public buildings shape how millions encounter cleaning robotics in everyday life even as the total scale still trails behind retail deployments.

Asia Rising: Strong Presence in China, India, Japan, Singapore, and Vietnam

From FamilyMart to Shenzhen Metro to national deployments at Indian airports, Asia is now represented across nearly every segment—pointing to rapid scaling potential in the cleaning robot market.



The 2025 edition of the Biggest Fleet Ranking shows how Asia has stepped onto the global stage for cleaning robotics. With 19 verified fleets totaling a Radar Score of 1,807 (296 robots and 327 microbots), the region has almost doubled its presence compared to 2024. While North America still dominates in absolute numbers, Asia now covers a much broader geographic spread and reveals highly diverse use cases—from convenience stores in Japan to airports in India.

Data Gaps and Growth Potential

It is important to stress that Asia's numbers in the ranking remain a conservative picture. Researching fleets from outside the region is difficult, with language barriers, fragmented reporting, and uneven OEM transparency limiting what could be verified. Several large Japanese, Chinese, and Korean fleets are known to exist but were not included because data could not be confirmed. This means the apparent doubling of Asia's footprint in 2025 likely underestimates the real growth, and the fleets that have entered are themselves positioned for expansion.

China: Robot-Heavy but Hard to Track

China accounts for 375 Radar Score, built almost entirely on 75 larger robots. The preference for heavy-duty machines in metro systems, malls, and industrial settings reflects China's scale and infrastructure priorities. At the same time, China remains a difficult market to capture in full: several sizeable fleets are suspected but unverified, underlining how data opacity continues to distort the picture compared with North America or Europe.

India and Vietnam: First Entrants

India debuts in the ranking through Peppermint Robotics, now active at three major airports—Mumbai, Thiruvananthapuram, and Ahmedabad—with a total of 9 robots (Radar Score 45). Vietnam also enters with a smaller fleet of 5 robots (Radar Score 25). While modest in scale, these deployments matter: they demonstrate that cleaning robotics is arriving even in lower-cost labor markets and that India, in particular, is not just an adopter but also a supplier of homegrown technology.

Japan: A Culture of Microbots

Japan leads the region with a Radar Score of 795, driven overwhelmingly by FamilyMart's 300-unit microbot fleet—the largest convenience-store deployment outside North America. The country's affinity for compact automation is no accident. With dense retail layouts, high customer expectations for cleanliness, and a cultural openness toward miniaturized solutions, microbots have found their most natural foothold in Japan.

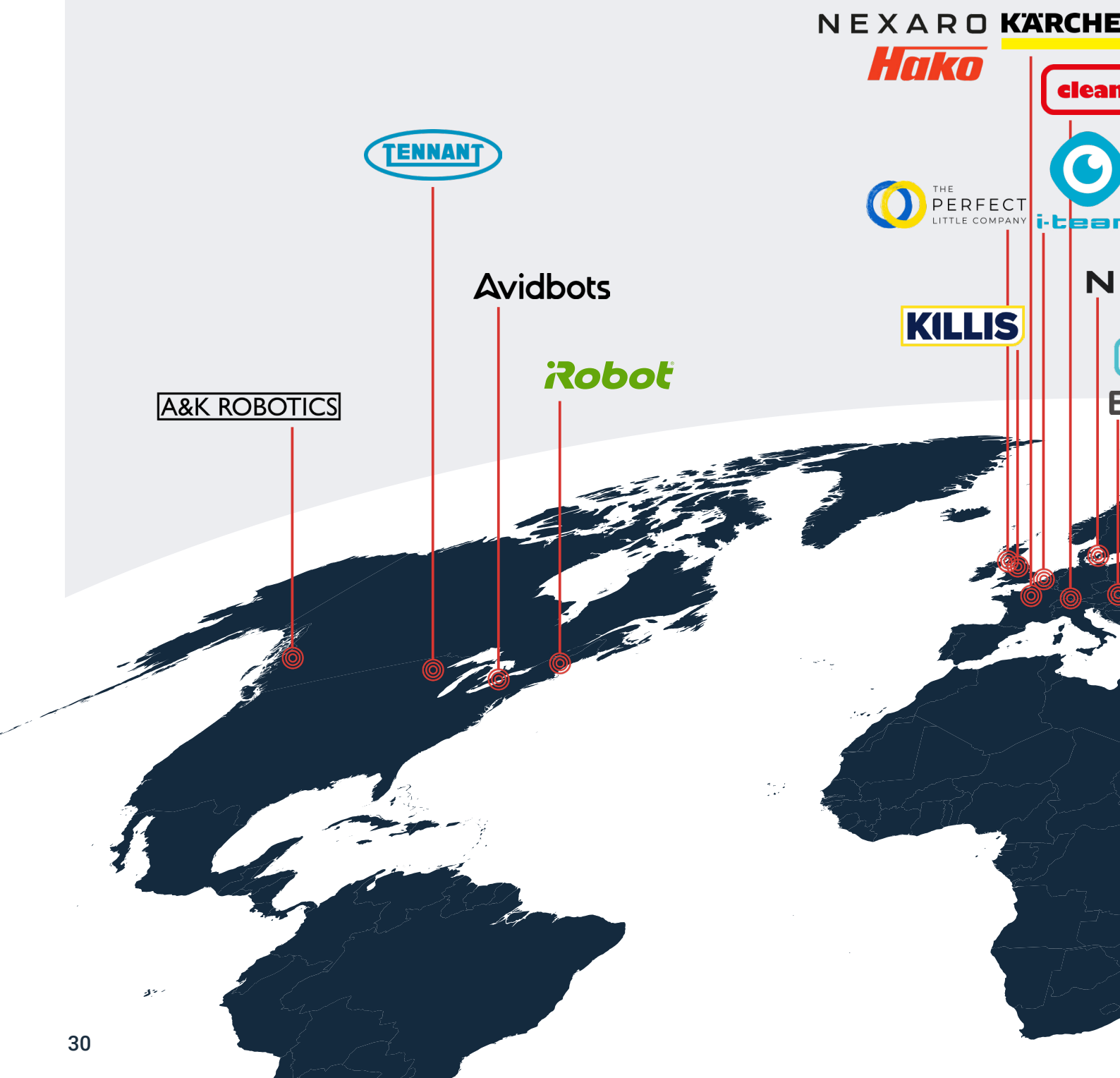
Singapore: Public Sector as Growth Engine

Singapore contributes 507 Radar Score with 96 robots and 27 microbots, centered in public infrastructure and education. Fleets at SMRT, universities, and hotels reflect not only market readiness but also deliberate government support. Programs under the National Robotics Programme have pushed automation into public facilities, making Singapore one of the world's clearest examples of how policy can accelerate adoption.

Regional Contrasts and Outlook

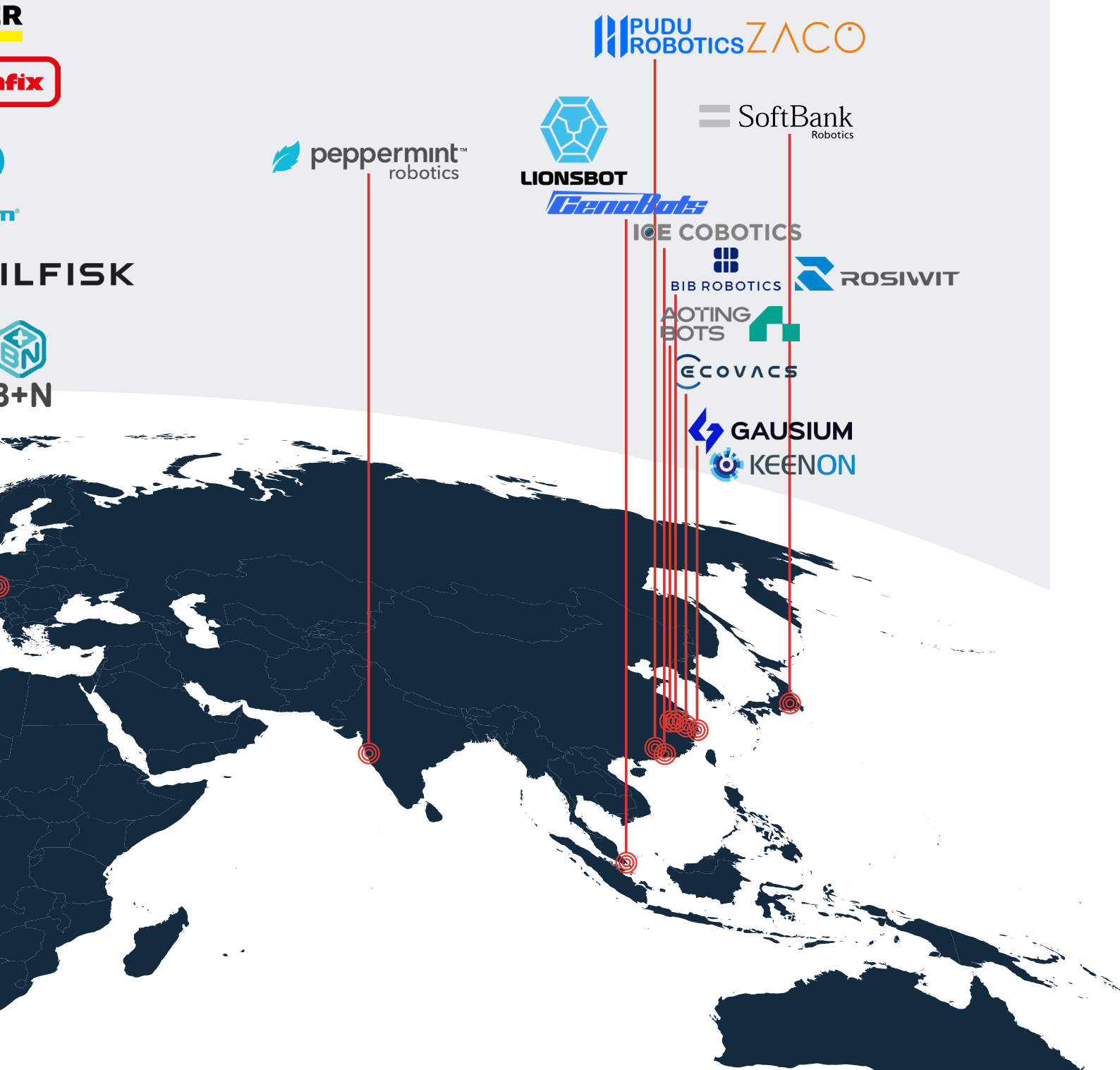
Asia's fleets reveal a clear split: Japan concentrates on microbots, while Singapore, China, and India scale larger robots. This contrast mirrors regional differences in built environments, customer expectations, and regulatory support. Beyond what is already listed, additional fleets are likely to surface in 2026 from Thailand, Hong Kong, and Taiwan, as Biggest Fleet's newly appointed ambassador will help to identify and verify deployments. Taken together, the region has entered a stage of rapid scaling potential—with established players in retail and public infrastructure and first movers in emerging markets paving the way.

A Fragmented Manufacturer Landscape



Biggest Fleet 2025 shows the diversity of cleaning robot makers shaping today's largest deployments

The 2025 ranking does not only highlight the operators of the world's largest cleaning robot fleets. It also reveals the wide variety of manufacturers supplying those fleets. From global equipment giants to nimble start-ups, the field is highly fragmented, with no single vendor dominating across all sectors and geographies. Below, we have profiled every manufacturer that appears in the 2025 ranking, with details on their background, technology, and the fleets in which their robots are deployed.



🇨🇦 A&K Robotics

Founded in 2015 in Vancouver, Canada, A&K Robotics specializes in retrofit autonomy kits that transform manual scrubber-dryers into self-driving units. The company's "Cruz" module was piloted at the University of British Columbia and Vancouver International Airport. In Biggest Fleet 2025, A&K appears in the custodial fleet at the University of British Columbia, listed at position 56 with a Radar Score of 35. This reflects its focus on North American education and large public venues.

🇨🇳 Aoting Bots

Aoting Bots, established in 2017 in Hefei, China, is known for its waterless SW55 robot that can sweep, scrub, vacuum and dust-mop. By eliminating water, it targets factories, malls, and transit hubs where wet cleaning is impractical. In the 2025 ranking, Aoting Bots appears in a smaller Asian fleet with a Radar Score of 35, underscoring its niche position in sustainability-driven markets.

🇨🇦 Avidbots

Avidbots, founded in 2014 in Kitchener, Canada, builds large-format scrubber robots such as the Neo, designed for malls, airports and warehouses. Known for their robustness, Avidbots' machines have been deployed across North America, Europe and Asia-Pacific. In Biggest Fleet 2025, Neo robots appear in Australian shopping centers and Singapore's transit systems, with fleets reaching Radar Scores from 15 to 445. This confirms Avidbots' role as a major supplier for high-traffic, large-scale facilities.

🇨🇳 BIB Robotics

BIB Robotics, founded in 2020 in China, is a newcomer that made headlines with FamilyMart in Japan. The convenience chain deployed 300 BIB robots equipped with displays and product baskets, doubling as both cleaners and promotional tools. In Biggest Fleet 2025, this fleet places prominently with a Radar Score of 300. BIB's specialization in Asian retail settings demonstrates how robot makers can design for tightly constrained, high-density store formats.

🇨🇭 Cleanfix Reinigungssysteme

Cleanfix, a Swiss family business founded in 1975, introduced one of the earliest autonomous scrubbers, the RA660. Cleanfix also made an entrance into microbots in 2022 with the disk-shaped S170 Navi. In the 2025 ranking, Cleanfix robots appear in several healthcare and hospitality fleets in Switzerland, Germany, Singapore and the US, totaling around 250 units. Cleanfix exemplifies how a small European manufacturer can sustain relevance by focusing on specialized, challenging environments.

🇨🇳 CenoBots

Founded in 2021 in China, CenoBots develops compact, flexible scrubber-dryers suitable for schools, offices and labs. Despite its young age, the company has won customers on three continents. In Biggest Fleet 2025, CenoBots appear at Penn State University in the U.S. and at German industrial sites, giving the firm a Radar Score of 20. The company illustrates how upstarts can win footholds in niche markets with agile deployments.

🇨🇳 Ecovacs Professional

Ecovacs, established in 1998 in Suzhou, China, is widely known for its consumer Deebot vacuums. Its Professional division brings multifunction cleaning to commercial environments, with models like the PRO K1 and PRO M1. In the 2025 ranking, Ecovacs appears in Chinese retail and transport settings, with a combined Radar Score of 90. While still minor in commercial robotics, Ecovacs' global reach and brand recognition suggest growth potential.

🇨🇳 Gausium

Founded in 2013 in Shanghai, Gausium (Gaussian Robotics) offers one of the widest portfolios in the industry, spanning compact vacuums to large scrubbers like the Scrubber 50 and Phantas. The company works with FM providers worldwide, from Atalian in France (55 robots) to Apleona in Germany and Huazhu Hotels in China. In Biggest Fleet 2025, Gausium appears across multiple fleets with combined Radar Score going into the thousands. Its broad base underlines its role as a global backbone of cleaning automation.

🇩🇪 Hako GmbH

Hako, founded in 1948 in Germany, is a long-standing maker of industrial cleaning equipment. Its Scrubmaster line has been adapted for autonomous operation through autonomy kits. In Biggest Fleet 2025, Hako robots appear in German FM fleets, notably Apleona (#18). Hako represents the incremental shift of traditional manufacturers into robotics.

🇨🇳 ICE Cobotics

Founded in 2011 in China, ICE Cobotics has built its reputation on compact autonomous scrubbers, marketed through a subscription-based business model. Its Cobi 18 is a small ride-behind scrubber designed for convenience stores and educational facilities. In Biggest Fleet 2025, ICE appears in several U.S. fleets: Kum & Go operates 400 Cobis (Radar Score 2000), RaceTrac runs 25, and J&H Family Stores 6, with additional deployments at Bowling Green State University. ICE also contributes to mixed fleets in Europe, such as Geiger FM in Germany.

🇺🇸 iRobot

iRobot, established in 1990 in the U.S., is the pioneer of consumer robot vacuums through its Roomba line. While not originally designed for professional use, Roombas occasionally appear in industrial adaptations. In the 2025 ranking, one German pharmaceutical company operates a huge fleet of modified Roombas for office and changing room maintenance (#26). This shows how consumer hardware can sometimes find unexpected roles in professional cleaning.

🇳🇱 i-team Global

Founded in 2015 in Eindhoven, Netherlands, i-team Global is known for its co-botic approach, combining human oversight with (semi-) autonomous machines. The Co-botic 1700 is among its best-selling robotic models. In Biggest Fleet 2025, i-team robots are used by German FM firms like Geiger and Dorfner. One all-i-team fleet stands out in particular: the Faxe municipality (#16) with 370 i-team microbots. i-team demonstrates the appeal of user-friendly, collaborative robots in Europe's FM industry.

🇩🇪 Kärcher

Kärcher, headquartered in Winnenden, Germany, is one of the world's largest cleaning equipment brands. Famous for pressure washers, it entered robotics with the KIRA B50 autonomous scrubber. In the 2025 ranking, Kärcher robots are present in European FM fleets such as Apleona and Dorfner. The company's strength lies in its brand trust and integration into existing service contracts.

🇨🇳 Keenon Robotics

Keenon, based in Shanghai and founded in 2010, is globally recognized for delivery robots in restaurants and hotels. In 2023, it launched the Kleenbot C30, signaling its entry into cleaning robotics. While Keenon does not yet appear in Biggest Fleet 2025, its financial strength and service expertise suggest it may emerge strongly in the upcoming years. Industry observers expect it to leverage its service-robot success into professional cleaning.

🇬🇧 Killis Ltd.

Killis, based in Sheffield, UK, is a cleaning technology provider best known for its RoboVac Buddy, developed for Travelodge hotels. Around 7,500 of these compact vacuums are in service, placing Killis at the top of the 2025 ranking in Europe. This fleet demonstrates the viability of hotel-specific cleaning robots at scale, with Killis carving out the hospitality sector as its specialty.

🇸🇬 LionsBot International

Founded in 2018 in Singapore, LionsBot is known for its debut model "LeoBot," designed with an expressive personality and multifunction cleaning capabilities. One of the early players in the field partnerships span FM providers and transport operators. In the 2025 ranking, LionsBot robots appear in Singapore's SMRT transit system, in British healthcare catering (Medirest), and with FM operators like Apleona Infra Services FM in Germany and Mitie in the UK. Combined, these fleets account for impressive Radar Scores. LionsBot's rapid expansion illustrates how design-focused Asian start-ups can scale globally.

🇩🇪 Nexaro

Nexaro, founded in 2020 in Wuppertal as part of Vorwerk, focuses on autonomous vacuum robots for offices and hospitality. Its NR 1500 and 1700 models are is linked to the cloud-based Nexaro HUB. In Biggest Fleet 2025, Nexaro appears prominently in the German market, including Vebego Deutschland's 160-unit deployment and other building service contractors. Nexaro highlights the rise of German mid-market innovation in Microbots.

🇩🇰 Nilfisk

Nilfisk, founded in 1906 in Denmark, has expanded from traditional equipment into autonomous scrubbers through its Liberty line. In Biggest Fleet 2025, Nilfisk appears in U.S. airports and European cleaning companies. Its integration of AI with a century-old brand positions Nilfisk as a global heavyweight in cleaning with big future potential.

🇮🇳 Peppermint Robotics

Peppermint Robotics, founded in 2019 in Pune, India, develops autonomous scrubbers for high-traffic environments like airports. In the 2025 Biggest Fleet ranking, the company operates 9 robots across three Indian airports—Mumbai, Thiruvananthapuram, and Ahmedabad—giving it a combined Radar Score of 45. This presence marks Peppermint as a strategic national player in showcasing Indian cleaning robotics.

🇨🇳 Pudu Robotics

Founded in 2016 in Shenzhen, China, Pudu is best known for its delivery robots but has rapidly expanded into cleaning with the CC1 and MT1. In Biggest Fleet 2025, Pudu is represented by several major operators: QuikTrip in the U.S. leads with 1,200 robots (Radar Score 6,000), Denner in Switzerland runs 200 units (Radar Score 1,000), and Aramark in the U.S. adds another 70 (Radar Score 350). Smaller fleets include Blechschmidt Induka in Germany and Marktkauf Prenzlau with 5 Pudu robots. Altogether, Pudu's presence drives Radar Scores well above 7,000, making it one of the single most influential manufacturers in this year's ranking.

🇭🇺 Robin (B+N Referencia Zrt.)

Robin is the proprietary cleaning robot of Hungarian FM provider B+N Referencia. Developed in-house since 2020, Robin is optimized for large public buildings. In the 2025 ranking, B+N operates 176 Robin units across hospitals and airports in Central Europe, yielding a Radar Score of 880. As an in-house fleet, Robin illustrates how FM companies can become robot OEMs in their own right.

🇨🇳 Rosiwit

Rosiwit Cobotics, founded in 2021 in China, is a fast-rising start-up with a diverse range of scrubbers, from compact Skywalker units to heavy-duty Titan machines. It has expanded into Eastern Europe with a Polish branch. In Biggest Fleet 2025, Rosiwit appears in one German fleet.
The company exemplifies the new generation of challengers looking to gain international credibility through aggressive expansion.

🇯🇵 SoftBank Robotics

SoftBank Robotics, launched in 2014 in Japan, is known for its humanoid Pepper but found some commercial traction with its Whiz autonomous vacuum. Whiz robots are widely used in offices and supermarkets. In the 2025 ranking, Flagship Facility Services in the U.S. operates 100 Whiz units, and Japan's Daiei supermarket chain fields 79, with smaller fleets in Europe. Together, they contribute substantial Radar Scores. Despite its strategic shift to an integrator, SoftBank Robotics' hardware remains a benchmark in autonomous vacuuming for commercial sites.

🇺🇸 Tennant Company

Tennant, based in Minneapolis and founded in 1870, is a global cleaning machine manufacturer. In robotics, it partners with Brain Corp for autonomous ride-on scrubbers like the T7AMR. In Biggest Fleet 2025, Tennant is heavily represented: Walmart alone fields 1,850 units, Sam's Club hundreds more, and Schnucks adds dozens. These deployments make Tennant one of the single most widespread OEMs in large-scale retail fleets, with Radar Scores in the thousands.

🇬🇧 The Perfect Little Company (TPLC)

TPLC, founded in 2015 in Oxfordshire, UK, builds micro-vacuum robots branded as "Abbee." These are designed for swarm operation, replacing manual vacuuming in offices and schools. In Biggest Fleet 2025, Mitie integrates 800 TPLC units alongside larger scrubbers, creating one of the few mixed fleets. TPLC demonstrates the scale potential of microbot swarms in FM contexts.

🇨🇳 Zaco

Zaco (ILIFE), founded in 2010 in Shenzhen, China, has evolved from a consumer vacuum pioneer into a versatile developer of compact cleaning robots. Known for cost-efficient design and global market reach, Zaco is now entering professional facility sectors with lightweight autonomous vacuums suited for small-to-medium spaces.

Hospitality as a Third Growth Frontier

Hospitality has emerged in Biggest Fleet 2025 as a small but visible third growth frontier for cleaning robots, after retail and the public sector. The sector now spans hotels, resorts, convention centers, and cruise ships. Travelodge still dominates the scene but now shares the scene with five other operators. Hospitality is beginning to show the contours of a market that could eventually scale.

The UK Cradle of Hospitality Robotics

The British hotel sector remains the birthplace of cleaning robots in hospitality. Travelodge retains one of the largest fleets in the entire ranking, operating 7,500 Killis RoboVac Buddies. At position #2 overall in 2025, the chain is still the only hotel group to have scaled room-level microbot cleaning across its estate. This makes the UK the cradle of the sector. Rumors point to other hotel brands preparing to follow suit, partly driven by persistent labor shortages after Brexit. With new models such as the i-team cobotic 1700, Nexaro NR 1500 and 1700, Cleanfix S170 Navi, and the newly launched Genius Swift now available, the range of options for hotel deployment has widened.

Germany Adds McDreams as a Hybrid Case

McDreams Hotels in Germany joined the ranking at position #48. Unlike most other operators, the budget chain deploys Nexaro units in a dual role: the same devices are used in Drop-and-Go room cleaning as well as in lobbies and corridors. This combined approach makes McDreams one of the few hospitality operators to apply a single robot type across both guest rooms and public areas.

China Joins with Huazhu Group

A major returning entrant is Huazhu Hotels in China, ranking at position #22 in 2025 with a Radar Score of 250. The group already appeared in the 2024 list at position #15. As one of Asia's largest

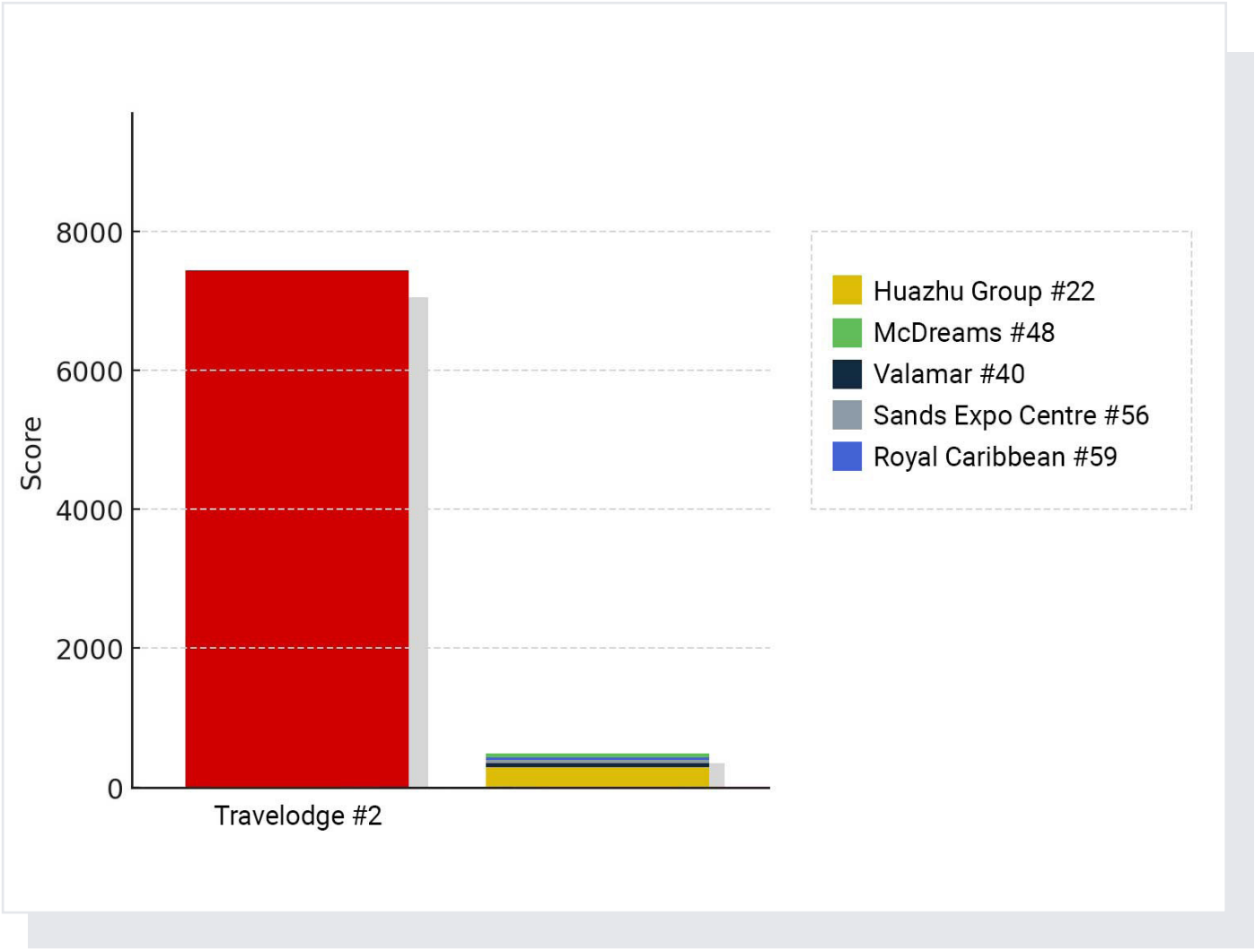


Chart 2: Hospitality in 2025: Travelodge's #2 Fleet vs. Five Smaller Signals Combined.

hotel groups, Huazhu demonstrates that robot adoption in hospitality is no longer confined to Europe. Huazhu's size suggests that further scaling across its network could make hospitality a much bigger vertical in the years ahead.

Cruise Lines Enter the Ranking

Royal Caribbean became the first cruise operator to appear in Biggest Fleet, entering the 2025 ranking at position #59 with a fleet of 6 robots (Radar Score 30). The scale is modest, but the setting is unique. Cruise ships pose challenges unlike any land-based facility: connectivity gaps at sea, mechanical stress from constant vibration, and the need to cover both casino carpets and outdoor decks. Royal Caribbean's deployment is therefore less about size than about proving feasibility, signaling that maritime environments may soon form part of the robotics landscape.

Public Areas Take the Lead

Outside the UK's room-cleaning fleets and Germany's hybrid case, most hospitality deployments remain focused on public spaces. Valamar Resorts in Croatia appear at position #53 with a Radar Score of 40, reflecting a similar pattern in European resorts, where lobbies, corridors, and event halls are the first targets for automation. Sands Expo & Convention Centre in Singapore appears at position #56 with a Radar Score of 35, showing how convention centers are using cleaning robots in highly visible, high-traffic environments.

A Sector on the Verge

The hospitality industry's representation in Biggest Fleet 2025 now spans six operators: one mega-fleet in the UK, one hybrid in Germany, and four smaller but significant fleets across China,

Cruise ships offer floor plans that are quite interesting for robotics.

Singapore, Croatia, and the cruise sector. Yet the signals are important. Contracts between robotics vendors and hotel groups are being signed, and the first generation of deployed robots is already reaching replacement cycles. The split between room-focused microbots (Travelodge), hybrid deployments (McDreams), and corridor-focused scrubbers and vacuums (Huazhu, Sands Expo, Royal Caribbean, Valamar) mirrors the sector's dual needs. If just one additional hotel chain in Europe, North America, or Asia decides to scale, hospitality could rapidly expand its footprint in the ranking.

Ambassador for the Americas: Elad Inbar

Elad Inbar, CEO of RobotLAB, leads one of the world's most experienced robotics companies with 18 years at the forefront of automation. Inbar discusses the rapid maturity of service robots, the shifting global market, and the company's role as exclusive provider for major brands like Hilton. He also shares insights on the hype and reality of humanoid robots—and why he believes a fully functional household humanoid could emerge before 2030. The conversation highlights the explosive growth of the robotics sector and the labor-driven demand in the USA.

Elad, thank you for joining me today. Could you briefly introduce yourself?

Of course, and thank you for having me, Alexander. My name is Elad Inbar, and I'm the CEO of RobotLAB. We are probably the largest and most experienced robotics company out there, operating for the past 18 years. I started the company back then, and today we serve almost every market you can imagine: restaurants, hotels, assisted living facilities, warehouses, supermarkets, schools, colleges, hospitals, you name it. We now have multiple locations nationwide. RobotLAB is also the only robot franchise. That means we open locations across the U.S. and internationally. Our franchise partners receive full training on all our products, as well as our playbooks. They open RobotLAB locations in their metropolitan areas and become the local "last mile" for customers. This is crucial because, as many know, the last mile of robotics and AI is the biggest challenge. Customers worry: What happens if the robot breaks? Do I need to ship it back? Wait weeks for a technician? We solve that by having local RobotLAB teams in each area who can sell, service, and support robots on-site. That's a 10,000-foot overview of who we are.

Elad Inbar
RobotLAB Inc.

Elad Inbar is a seasoned executive with a rich, multi-disciplinary background in the high-tech industry, spanning online content publishing, e-commerce, affiliate marketing, machine-learning algorithms, and robotics. As the founder of RobotLAB, the world's only robot franchise, he has established himself as a true pioneer in service and cleaning robotics. With nearly two decades of hands-on experience, Elad brings a unique perspective on how automation is reshaping industries across the world.

A very unique and exciting concept. So, you're the founder and CEO, running a fast-growing franchise system with many services and markets across the Americas and beyond. Why did you decide to become the ambassador for the Biggest Fleet campaign in the Americas?

We need all hands on deck. For the first time, after so many years in the industry, we now have robots that deliver a clear return on investment. At the same time, businesses face real labor shortages, people simply don't want to push a vacuum cleaner for eight hours, run dirty dishes in restaurants, or move heavy boxes in warehouses. These two forces are converging, creating a huge opportunity.

This isn't something I can solve alone. That's why I appreciate initiatives like the Biggest Fleet campaign—it brings awareness to what's happening in this market. It helps show businesses that the solutions are real and available now.

What was your very first touchpoint with service robotics?

It goes back about 18 years. I've loved robots since childhood-programming, tinkering, soldering electronics. For many years, robotics was mostly a hobby for geeks like me. Around 2004–2005, while living in Taiwan, I spent weekends exploring the "gray markets" under bridges, where people sold motors, boards, sensors—everything you could imagine.

At first, it was just components. But then I began noticing ready-made products: small drones, remote-controlled cars, and early smart devices. The first smartphones, even before the iPhone in 2007, were powerful enough to control robots. That was a turning point.

I sold my shares in my previous company and founded RobotLAB in 2007. Back then, service robots like cleaning or delivery robots didn't exist. We started with education, leveraging robots to make learning engaging. Coming from a family of teachers, that felt natural. For example, we used drones in math classes to bring quadratic equations to life. Suddenly students were excited.

For about a decade, we focused on education, creating curricula and programs, and winning awards. We reached two-thirds of school districts in the U.S. Over time, as manufacturers built more capable robots, they approached us. At first, most weren't reliable enough. But around 2020, a real shift happened. Serious R&D, serious funding, and robots that finally delivered real value. That's when we expanded into cleaning, delivery, cooking, security, and customer service robots.

Fascinating journey. How do you decide today which robots make it into your portfolio?

We test everything. Just because a robot exists doesn't mean it's ready for the real world. A good example is Segway's food delivery robot. Segway is a reputable company, so we tested it. But it failed: no suspension (so soup spilled over small floor gaps), and no downward-facing camera (so it missed objects under 20 cm and just bumped into them). We gave feedback, and they're working on version two.

The last thing we want is to put a robot in a customer's business, only to get a call saying it doesn't work. That would hurt not only us but also the industry, because customers are still cautious. Our responsibility is to protect them from

half-baked solutions.

Every week we get two or three pitches from startups. Many are projects, not products—like the viral video of a robot cleaning public toilets. It looked amazing online, but in reality, it was a remote-controlled prototype stitched together for fundraising. If we rolled that out prematurely, we'd kill customer trust.

Let's talk about your markets. With many robots coming from Asia, how do tariffs and trade uncertainties affect you?

No one likes tariffs, but the economics still make sense. Take an entry-level delivery robot: on a three-year contract, it costs about $15 per day. Even with $20 per day. A robot can work 10–12 hours straight—far cheaper than hiring even one human runner at $15 per hour.

The same applies to cleaning robots. A janitor can cover 55–65,000 square feet per day; a robot can clean 120,000 square feet, autonomously, for about $27 per day. That's a fraction of labor cost, plus savings on consumables. We've even created a masterclass on ROI calculations for robots. So yes, tariffs hurt, but the business case still holds strong.

Which sectors in the U.S. hold the biggest potential for cleaning robots beyond retail?

Across our six categories—cleaning, delivery, cooking, security, customer service, and firefighting—cleaning currently makes up about half of our sales, delivery about 35–40%, and the rest are emerging. Importantly, the whole pie is growing. So when cooking robots gain traction, it's not at the expense of cleaning, it's an addition. Right now, cleaning and delivery dominate, but all categories are expanding.

You've worked in Asia, now the U.S., and have franchises in Latin America. How do these markets differ?

In developed markets, Western Europe, the U.S., Japan, the drivers are labor cost and labor availability. In assisted living facilities, for example, it's not just expensive, it's nearly impossible to find staff willing to do the work. That creates strong demand for automation.

In Latin America, labor is cheap and abundant. Robots cost the same everywhere, so the business case is weaker. There, demand often comes from novelty-businesses wanting to impress customers—or from government grants. We've sold robots in Colombia, Brazil, even Mauritius, but often through government programs or prestige projects.

Looking ahead, what about humanoid robots? Are they part of your strategy?

Humanoids are the holy grail. The world is built for human form-door handles, kitchens, plumbing—so humanoid robots would integrate seamlessly. But we're not there yet.

Right now, much of what you see is hype. Some companies showcase boxing robots or short factory trials. Elon Musk's Optimus is impressive but still limited, it's essentially Alexa in human form.

That said, progress is exponential. Neural networks, sensor fusion, and computing power are advancing fast. We even have a bet in the company: I believe that by 2030, we'll have a humanoid robot plumber—able to crawl under a sink, unclog drains, and fix a dishwasher. Not a service you call, but a robot you own that downloads new "skills."

It sounds bold, but if you look at the leap in AI over the past two years, it's not unrealistic. Our role will be to provide the last mile-deployment, service, and support.

And for the nearer future, say Biggest Fleet 2026, where will we stand?
We've signed major agreements with the largest hospitality groups, including Hilton. We're their exclusive robot provider until the end of the decade. We already have robots running in Hilton properties, and now we're scaling. By 2026, I expect hundreds, if not thousands, of robots deployed across their hotels.

Final question—do you have robots at home?
Absolutely. My kids grew up with them, so for them it's normal. We have various cleaning robots, floor, window, you name it. For our Christmas party, we even brought delivery robots to serve cocktails. So yes, robots are very much part of our home life.

Elad, thank you very much for your insights, your time, and for being the ambassador of the Biggest Fleet campaign in the Americas. It's exciting to see where this industry is headed—2025, 2026, and toward 2030.
Thank you, Alexander. Always a pleasure.

No time to read?

Watch the video interview with our Biggest Fleet ambassador for the Americas, Elad Inbar, on YouTube — simply scan the QR code.

Ambassador for Europe: Rainer Kenter

For The Biggest Fleet 2025, understanding the perspectives of leading industry figures is essential, especially at a time when robotics is reshaping professional cleaning at high speed. Europe remains one of the most dynamic yet cautious regions in the sector, and few people understand this tension better than Rainer Kenter, long regarded as a forward-thinking voice in cleaning innovation. As the newly appointed European Ambassador for The Biggest Fleet 2025, he offers insights into how robotics is evolving, where the industry is heading, and why embracing change is more important than ever.

Today I'm joined by Rainer Kenter, ambassador for The Biggest Fleet 2025. Rainer, you are known in the industry as what you once described as an innovation trendsetter. Could start by briefly introducing yourself. Many people in the German-speaking world know you already, but this interview will also be published internationally to North America and Asia.

Alexander, thank you very much for the invitation. I'm Rainer Kenter, and I've had the opportunity to help shape the industry for many years. I don't describe myself as a driving force for innovation; that term actually came from a customer. But I liked it, and perhaps that has always been my motivation to continue changing things.

You are now the new ambassador for The Biggest Fleet in Europe. Why did you decide to support an initiative like The Biggest Fleet?

I see myself as one of the pioneers of robotics in Europe, and it quickly became clear to me that robotics will play a decisive role in the future of cleaning. This is driven particularly by the growing shortage of skilled workers and labor in general. To gain more transparency into the progress being made and the integration of robotics into the industry, The Biggest Fleet is an excellent tool. I take my hat off to whoever came up with this idea.

How did you personally become involved in cleaning robotics?

My company and I have always looked at global markets to understand which disruptive methods and technologies might become important in the future. With robotics, things were a bit different. The first steps were already taken around 1998 when three or four established manufacturers entered the market, including Kärcher, Comac, and Hako.

But the technology wasn't ready. I had just taken over my father's company at a young age and was convinced that once the technology matured, it would become decisive. Then, around the middle of 2014, the Fraunhofer Institute approached me to join a research consortium on cleaning robotics focused on office cleaning. It was immediately clear to me that we would participate and really dive deep into the subject to unders-

Rainer Kenter
Kenter Gebraucht- und Mietmaschinen

Rainer Kenter is the European Ambassador of The Biggest Fleet 2025. With his companies, he has been driving technological progress in the cleaning industry for many years. As one of the early adopters of cleaning robotics, he gained a pioneering edge while also facing significant challenges along the way. We are delighted that, with his expertise, experience, and extensive network, he is helping to raise further awareness of our initiative within the industry.

and where we were and where things could go.

And from there, you included one or two manufacturers in your product range and helped push these products toward market readiness. I assume that didn't work out as smoothly as expected from the beginning.
That's correct. I went through some painful experiences, and they still affect me today as one of the early adopters. The technology wasn't ready, but we brought manufacturers to the market and supported them as much as we could. Still, the beginning was difficult. Today we benefit from robotics being so far developed that we now talk about rollout strategies rather than whether robotics has any chance at all in professional cleaning.

How is it for you personally? Do you also have robots at home?
At home, I've always tried to make things as easy as possible for myself. I have three complementary robots: one for the garden, one for indoors, and one for the pool.

That's an interesting example of how consumer electronics influence professional cleaning. There is clearly crossover both ways. Are you still actively observing the market today, especially developments from Asia, to identify and test technologies that could work in Europe?
Yes. When we started with robotics, the market was still very small. The large established manufacturers had no solutions yet and struggled to bring any to market. A few start-ups from Asia emerged and grew significantly. In the USA and Canada, some interesting solutions were already used in larger rollouts, but many weren't suitable for Europe due to data protection issues like GDPR. It was easy to see that what worked in Asia didn't always work in Europe. We also evaluated whether these start-ups had long-term viability or were simply short-lived. The risk was high then and is even higher now because there are so many players. We had to assess who was behind the company, whether there was capital, and whether the manufacturer had a long-term strategy. Of course, I also made some misjudgements. Today things are much more complex.

At the CMS in Berlin two weeks ago, we saw countless brands unknown in Europe with no sales or service structures. It takes a very different strategy to scan the market now.

Let's stay with strategy. Many companies in Europe have tried pilot projects with robots and ended up with one or two machines standing unused in a corner. What should these companies do to move from pilot phase to productive deployment?

It starts with mindset. You must understand where investments in robotics make sense. You need to identify the right properties, calculate ROI, and understand where efficiency gains are realistic. With the right objects and the right robots, ROI can come very quickly. You also need to involve employees and customers and rethink your business model. No one should fear this; it's an opportunity.

The Biggest Fleet results for 2025 show strong adoption in retail, as well as in infrastructure. Which other sectors have high automation potential?

The hotel industry will become a major market, and logistics already has strong adoption. I also believe winter services will become important, although implementation varies by region. There are already exciting solutions.

We'll see which sectors show up in the next rankings. Looking internationally, Europe is often considered slower. How do you see the differences between Europe, North America, and Asia?

Europe is indeed slower than North America and much slower than Asia. There is also a north-south divide: Scandinavia embraced robotics earlier, and the Baltic countries are very tech-savvy. But ultimately robotics will play a major role across Europe. Europe is simply a bit slower.

What makes Europe slow? Investment decisions? Reluctance to move from pilots to fleets? Mindset? Business model changes?

All of the above. In Europe, we are in a comfort zone. That goes from frontline workers to managers. The willingness to change is not intrinsic. But the labor shortage increases pressure, and we already see the domino effect.

Let's talk about the robots themselves. What developments will we see in the coming years?

Robots will become even more autonomous and simpler to use. If something isn't simple, it won't work. And they will be far more efficient.

What does more autonomy mean?
For example, I haven't yet seen robots measure dirt levels on cleaned surfaces or detect residual water. Human operators often miss such issues. Robots must detect them to ensure real quality, not just visual performance.

Finally, we're all curious about the results of The Biggest Fleet 2025. Rumor has it we have nearly twice as many participants as last year. If we look ahead not to 2025 but to 2030 or 2035, where do you see the industry?
There will be a massive increase. I don't know the exact numbers, but a tenfold rise seems certain.

Thank you very much for your time. We are pleased that you support this initiative and help encourage others to participate.
Thank you, Alex, and thank you for this wonderful initiative.

No time to read?

Watch the video interview with our Biggest Fleet ambassador for Europe, Rainer Kenter, on YouTube — simply scan the QR code.

Ambassador for Asia: Lambert Zhang

This interview with Lambert Zhang, General Manager of Vortex and Asia Ambassador for The Biggest Fleet 2025, offers a rare inside view into one of the most important regions shaping the future of robotics. As China continues to set the pace in innovation, manufacturing, and large-scale deployment, understanding its perspective has become essential for anyone working in professional or consumer robotics.
Lambert shares insights into market dynamics, technology trends, and why China plays a defining role in the global evolution of cleaning robots and beyond.

Today we speak with Lambert Zhang, General Manager of Vortex and the new ambassador for The Biggest Fleet 2025 in Asia. Thanks for joining, Lambert. Can you briefly introduce yourself?
Yes. I'm Lambert from Suzhou, China. Since graduating in 2005, I've spent nearly two decades working in overseas sales and business development in the garden tools and floor-care appliances industries. It's a pleasure to be here with you today, Alex.

Thank you. You mentioned garden tools and floor cleaning. Does your work also involve robotics? Do you use any robots at home?
Yes, absolutely. I use robotic cleaners at home, brands like Dreame and Roborock. They're not just products I work with; they've become part of

Lambert Zhang
SUZHOU VORTEX TECHNOLOGY CO., LTD

VORTEX
DREAME

Lambert Zhang is a leading Chinese expert in cleaning robotics, with a career spanning several influential companies in the industry. He has held key positions at 3iTech and Borine, where he contributed to the advancement of intelligent cleaning technologies and robotic product ecosystems.

Today, as Managing Director, he is building Vortex, a subsidiary of Dreame. Vortex operates as a strategic OEM partner, providing a wide product range from a single source and offering tailored customization to meet diverse customer needs.

my daily life. And their cleaning performance is truly impressive.

So you work with robots all day and then go home to more robots—always a robot around you. We recently met in Suzhou where you also beat me at table tennis. Maybe you felt a bit guilty afterwards. But beyond that: why did you decide to support The Biggest Fleet campaign and become the ambassador for Asia? It does require a bit of time and commitment.

Well, beyond our table-tennis rivalry, there were three reasons. First, I'm genuinely passionate about advancing the microbot category. Second, I wanted to support you, Alexander, and the Biggest Fleet team. And third, our industry is quite close-knit-collaboration is essential, and we grow by supporting each other.

Very nice. Let me know if I can return the favor one day. Hopefully you'll let me win next time. You mentioned you started with garden tools. How did you personally get into cleaning robotics? That's quite a shift.

My journey into cleaning robotics began through my long-term involvement in the floor-care appliance industry. Over the past 20 years, I've watched the evolution from traditional cleaning tools to smart, intelligent solutions. What truly sparked my passion was seeing how robotics solve real-life problems, saving families time, improving cleaning efficiency, and integrating seamlessly into smart homes. At Vortex, our focus is on making these technologies accessible and reliable, which has strengthened my commitment even further.

When I was in China, I felt that China plays a special role in robotics and new products. Do you agree? How would you describe China's role in the world regarding microbots?

This is a big topic. In my view, China plays a critical and unique role in the global robotics landscape. It has become the world's manufacturing powerhouse, but more importantly, it's now a major innovation center. China excels at rapid iteration, cost-effective scaling, and the integration of advanced AI into practical applications—including robotics. China is not only supplying the world, it is setting the pace for innovation and defining what's possible in smart-home ecosystems.

At Vortex, you develop microbots for households. Do you think these machines—or similar ones—are ready for professional use?

Yes, I strongly believe so. Even if not everyone is fully convinced yet, customer demand is increasing. The build quality is already very high. In certain scenarios—hotels, small meeting rooms, or living-room-like environments—these products can work effectively.

So everywhere that resembles a home environment. What developments do you see in the industry in the coming years? We already have vacuuming and wet cleaning. What comes next?

During your visit to China, you probably sensed some of this. Manufacturers of professional cleaning robots are moving into the consumer segment, while consumer manufacturers are moving upward. This convergence is fascinating to watch. For household robots, the next steps after floor cleaning are difficult- Right now we mostly see niche ideas or gimmicks, like robotic arms for handling socks.

Yes, I saw that one.

You may also have seen it again at the IFA show

this year.

We will see what becomes useful for professional applications. You mentioned hotels and other small spaces. Where do you see the biggest use cases for small robots in professional cleaning?

In my view, hospitality is a major area. In the UK, for example, a significant portion of robotic fleets already consists of small robots—around 50%. Especially in the UK and parts of mainland Europe, floor spaces are often small and labor shortages are severe. These markets really need such solutions.

Interesting. The ranking also highlights retail spaces and educational infrastructure. Which other sectors have strong automation potential? Are there segments that already work very well in China?

Yes. China began with security and indoor delivery robots and later expanded into cleaning, outdoor logistics, surgical applications, and more. Now the question in China is less about inventing new categories and more about which categories will succeed in Europe and North America.

So still plenty to roll out in your target markets. How would you describe the Chinese market compared to Europe or North America, especially in your role at Vortex?

The Asian market, especially China, is characterized by rapid adoption and fierce competition. Consumers are tech-savvy and expect innovation at an affordable price. If they want it, they buy it quickly. In contrast, Europe and North America place more emphasis on reliability and data security, especially when integrating with existing smart-home ecosystems. But we are seeing convergence: Asian manufacturers increasingly design products to meet global standards, while Western markets are embracing the innovation and scalability coming from Asia.

Talking about innovation: we've discussed cleaning robots, which have a decade of development behind them. But what about humanoid robots? Your parent company is experimenting in this area. What are your expectations?

Humanoid robotics is an exciting frontier, but we are still in the early stages of practical, widespread use. At Vortex, we monitor developments closely and collaborate with tech partners on potential use cases. But our main focus remains on perfecting specialized robots, like vacuum cleaners, that deliver clear, tangible value. In the near future, humanoids will likely find niches in customer service or healthcare. But for household and commercial cleaning, purpose-built robots will continue to dominate.

Good to hear. I'm not ready to be beaten at table tennis by one of your robots.

Finally, The Biggest Fleet is a yearly benchmark. Looking ahead to 2030: what do you expect for professional cleaning fleets?

From a Chinese manufacturing perspective, no matter how robots evolve, innovation cycles will stay short and the supply chain will remain strong. The key question is how big the opportunity becomes. The Biggest Fleet helps us understand this. Both in the number of robots deployed and, more importantly, in the size of the fleets. That growth will benefit the entire industry.

Wise words to end on. Lambert, thank you again for your time, and for serving as the Asia Ambassador this year. It's extremely valuable to hear the Chinese perspective. I'm already looking forward to our next table-tennis match.

Thank you. Maybe next time we'll even bring a robotic arm to play table tennis with you.

I want to see that. Thank you very much!

No time to read?

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FieldBots™ Radar

An initiative of FieldBots Radar for the cleaning robotics industry

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