IKONA PARTNERS

Waste Management Tech – Market Update

Q2 2024

IKONA At-a-Glance and Key Statistics

At IKONA, we're transparent about our focus areas and excel at partnering with companies that fit our specialized parameters

Sector Expertise

Vertical Software

- Education Technology
- Industrial and Manufacturing
- HCIT
- Media and Entertainment
- GovTech and Non-Profit
- Real Estate and Hospitality
- Waste Management
- Professional Services

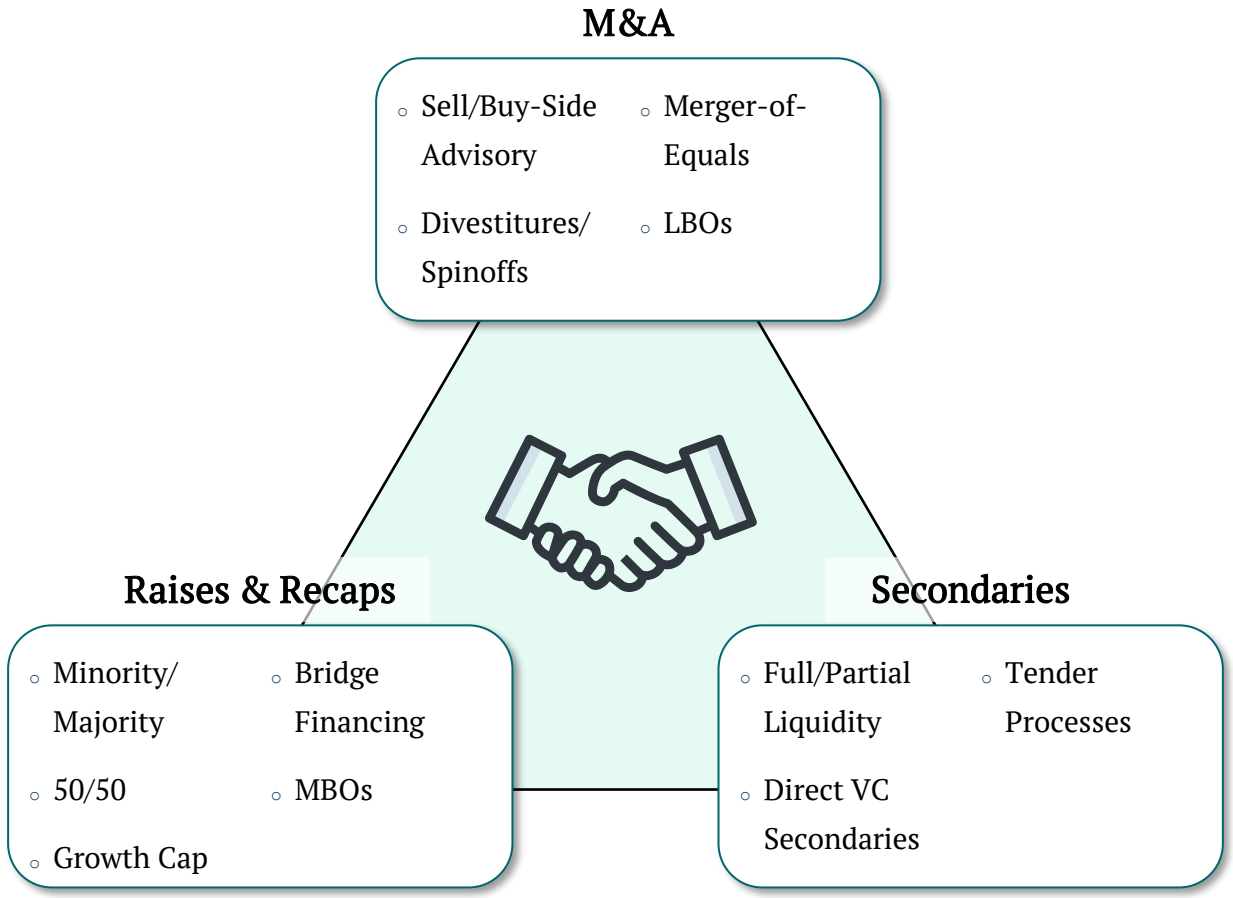
Application Software

- GRC & Cybersecurity
- Supply Chain & Logistics
- HCM, Safety, and Workforce
- Sales Enablement
- Marketing Tech
- Analytics
- Asset Management

SMB, Data, and Tech-Enabled Services

- Field Services & Payments
- Data-as-a-Service
- Data Enablement
- Mobile Apps
- Digital Commerce

Transaction Types



IKONA Founders: Passionate Deal-Makers, Strong Track Record

We are **active shareholders that own 100% of the firm.** Every transaction matters to us, and every client is served by multiple experienced decision-makers. We are not a "volume shop," but rather a true boutique, where we are **highly selective and dedicated to a few choice engagements**

David Cho
Managing Partner

IB Experience: 13 years
San Francisco, CA

VPA · WEDBUSH · zynga · Berkeley UNIVERSITY OF CALIFORNIA

Chet Kristy
Partner

IB Experience: 8 years
Charlotte, NC

VPA · SunTrust Robinson Humphrey · NOMURA greentech · USC University of Southern California

Charlie Penner
Partner

IB Experience: 8 years
San Francisco, CA

VPA · DUFF&PHELPS · PowerSchool · UNIVERSITY of WASHINGTON

End-User Market Canvas

The end-user of the product determines the sub-verticals that make up the waste management tech landscape

Solid Waste

Municipal

- Municipal Solid Waste, or MSW, includes a wide variety of residential and commercial materials that would commonly be defined as trash

Industrial

- Generated by industrial or manufacturing processes
- Special classification that is non-hazardous and non-household produced, but still requires proper disposal

Construction

- Commonly referred to as construction and demolition or C&D waste
- Primarily comprised of debris such as steel, wood products, drywall, brick, concrete and more
- Falls outside of the scope of Industrial and MSW

Liquid Waste

Wastewater

- Generated from the contamination of fresh water through domestic, commercial, or industrial use; as well as surface runoff or storm water

Fats, Oils, and Grease

- Known as FOG, includes a combination of fats, oils, and grease used in food preparation and processing
- FOG accumulation in City sewers results in a significantly increased maintenance and replacement costs

Organic Waste

Food Waste

- Food that would be fit for consumption but is instead discarded for various reasons along the supply chain or at the consumption phase
- Estimated to be between 30 and 40% of the total food supply [1]

Green Waste

- Biological waste that generally breaks down over a short period of time or can be composted
- Includes agricultural materials such as cut grass and flowers, leaves, branches, as well as common household waste such as coffee grounds and eggshells

Oil Field Waste

Harmful Substance

- While not technically regulated as hazardous, typical oilfield waste includes materials left behind that have negative impacts on health and the environment
- Includes Emulsions, spent drilling muds, drill cuttings, and more

Produced Water

- Most oil and gas waste by volume is generated by produced water
- Contains components complicating disposal such as dissolved salts, heavy metals, and naturally occurring radioactive substances

Hazardous Waste

Medical

- Generated from all types of healthcare facilities, veterinary clinics, and medical research laboratories
- Includes materials contaminated by blood, bodily fluids, infectious materials, and more

Dangerous Materials

- Encompasses a wide variety of dangerous materials such as ammunition and explosives, radioactive material, harmful chemicals, and asbestos

Recycling

Mechanical

- Most prevalent recycling method globally
- Involves mechanically transforming waste into new materials without altering the chemical structure

Energy

- Commonly known as waste-to-energy
- Diverts waste from traditional disposal sites like landfills to generate energy through combustion

Chemical

- Involves altering the chemical structure of waste materials to reprocess and repurpose them for use as raw material in new industries

Evolving Landscape

Over the past ten years, the waste management software space has rapidly developed as numerous vertical and horizontal players provide specialized solutions across many use-cases

Waste Management Software Subsectors

Solid Waste

ab Embedded Systems Ltd. ROBUST RESILIENT FLEXIBLE SOLUTIONS
AMITY Software
concertive
DISPATCHER
EasyRoute
dumptd
evreka
EVERESTLABS
PEGEX Compliance. Sustainability. Automation.
PARADIGM SOFTWARE
HAULER HERO
Qv21 Technologies
Routeware
((SENSONEO))
SOFT-PAK SOFTWARE SOLUTIONS
TRACK YOUR TRUCK GPS FLEET TRACKING
TRASH FLOW
TRUX WASTE INDUSTRY BUSINESS SOLUTIONS
waste accountant
simpliciti
WASTE HERO
Wastebits
WASTE LOGICS
whitespace work software
WasteWORKS

Wastewater

ADS
Green Citizen
Cartegraph
AQUATIC INFORMATICS
Cityworks
EnviroSim ASSOCIATES LTD.
GE Digital
Hydromantis Member of the Hatch Group
ICONICS
metasphere make data count
MOBILTEX
Rockwell Automation
Schneider Electric
ServiceCore
WaterTrax

Food Waste

access
AIM2flourish
Betterfly Tourism
whywaste
emizentech Your ideas, our innovations
CompostManager
FloVision SOLUTIONS
evreka
KITRO
Jamix Making Kitchens Work
Lumitics
Leanpath
phood
MarketMan
Too Good To Go
Spoiler Alert
invafresh
TOTALCTRL
winnow
upshop

Medical & Haz Waste

ASI Andrews Software, Inc. A Routeware Global Company
CLOUDPITAL transform health
ENTECH ALASKA'S PREMIER MEDICAL WASTE PROFESSIONALS
EZ Software Systems SHRED
navusoft
OnSite WASTE TECHNOLOGIES
PEGEX Compliance. Sustainability. Automation.
RouteStar SOLUTIONS
Smart Service
WASTELINQ
Wastebits
WORKWAVE
SharpSoft

Recycling

21st Century Programming
cieTrade
cro Software Solutions
cycleLution
Diversys
GreenSpark
NEXUS RECYCLING MANAGEMENT SYSTEM
RECYCLEYE
RecycleSoft
RUBICON
SCRAP DRAGON
SCRAPRIGHT RECYCLING SOFTWARE DONE RIGHT.
SCRAPWARE
WASTE LOGICS

Horizontal Waste Management Software Companies

AMCS
Deltek
EMERSON
FORTIVE
Honeywell
Roper TECHNOLOGIES
SAP
sphera

Recent Notable Transactions

The waste management software space has seen significant transaction volume in the past five years from private equity and PE-backed platforms as well as standalone strategics. We expect continued consolidation as cross-sell, geographic expansion, and economies of scale become even more important to developing category-leading platforms

Growth / Private Equity

simpliciti | Green Citizen / OMNES • 2/22/2024 • Wastewater Treatment Management • EV: N/A • Implied Revenue Multiple: N/A	upshop | LEVEL EQUITY • 1/16/2024 • Fresh Item Management • EV: N/A • Implied Revenue Multiple: N/A	whywaste | invafresh / TAILWIND • 10/3/2023 • Food Waste Management • EV: N/A • Implied Revenue Multiple: N/A	GREENEXT | TeamSystem / Hg • 6/19/2023 • Industrial Waste Management • EV: N/A • Implied Revenue Multiple: N/A		
savvie | PSG / PROVIDENCE STRATEGIC GROWTH • 11/17/2022 • Food Services • EV: N/A • Implied Revenue Multiple: N/A	TITANGPS | AKKR / ACCEL-KKR • 10/11/2022 • Fleet Management • EV: N/A • Implied Revenue Multiple: N/A	LISAM SYSTEMS / Enabling full compliance. | KEENSIGHT CAPITAL • 6/21/2022 • EH&S Documentation • EV: N/A • Implied Revenue Multiple: N/A	AMCS | CLEARLAKE • 5/12/2022 • Business Optimization • EV: N/A • Implied Revenue Multiple: N/A		
edp / by VertiGIS | Battery • 3/2/2022 • IT Systems • EV: N/A • Implied Revenue Multiple: N/A	TES | IMM / IMM Investment, Corp. • 2/18/2022 • Electronics Recycling • EV: $1.0B E • Implied Revenue Multiple: 2.89x	toolsgroup | AKKR / ACCEL-KKR • 12/1/2021 • Supply Chain Waste Management • EV: $284M • Implied Revenue Multiple: 16.8x	navusoft | AMBINA PARTNERS • 11/17/2021 • CRM • EV: N/A • Implied Revenue Multiple: N/A		

Strategic M&A

CodaBene | Too Good To Go • 11/14/2022 • Food Services • EV: N/A • Implied Revenue Multiple: N/A	utilitycloud | AMCS • 9/13/2022 • Wastewater ops management • EV: N/A • Implied Revenue Multiple: N/A	WASTETRAKR / MANAGING OUR PLANET'S CANNABIS WASTE | GCAC • 7/8/2022 • Green Waste • EV: N/A • Implied Revenue Multiple: N/A	| DISPATCHER • 6/16/2021 • Dispatching/ Logistics • EV: N/A • Implied Revenue Multiple: N/A		
| AMCS • 5/31/2021 • Waste Management Platform • EV: N/A • Implied Revenue Multiple: N/A	PREVISOFT / Prévention des risques professionnels | LEFEBVRE SARRUT • 3/24/2021 • Risk Management • EV: N/A • Implied Revenue Multiple: N/A	Lateral INNOVATIONS | PG Solutions • 1/7/2021 • MSW • EV: N/A • Implied Revenue Multiple: N/A	TRUX / WASTE INDUSTRY BUSINESS SOLUTIONS / An AMCS Company | AMCS • 1/29/2020 • Waste Management Platform • EV: N/A • Implied Revenue Multiple: N/A		
INTELEX | FORTIVE • 7/1/2019 • EH&S • EV: $570M • Implied Revenue Multiple: N/A	RECY SYSTEMS AG / Recycling Software Systems | AMCS • 1/21/2019 • Recycling • EV: N/A • Implied Revenue Multiple: N/A	DESERTMICRO / MOBILE SOFTWARE SOLUTIONS | AMCS • 7/27/2018 • Logistics • EV: N/A • Implied Revenue Multiple: N/A	ab Embedded Systems Ltd. / ROBUST RESILIENT FLEXIBLE SOLUTIONS | CARL • 11/30/2017 • Smart Control Systems • EV: $.2M • Implied Revenue Multiple: N/A		

Target | Investor

Expectations for the Waste Management Tech Industry

The waste management tech space is evolving due to growing concerns about the ever-increasing global waste output

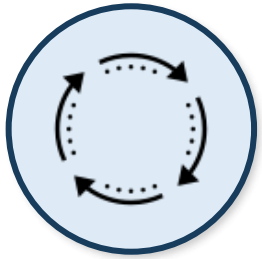
Immediate

Commodity and Energy Prices, Labor Costs, and Circular Economy

- Rising commodity and energy prices make efficient material recycling more profitable, including mechanical recycling of waste into raw materials, energy recycling/carbon capture, biogas capture, resale of rare earth/strategic metals, and more
- Growing volume of landfill trash and associated environmental risks including fire, pollution, and other risks to human health make technological fixes to air and water quality an immediate priority
- The historically labor-intensive waste management industry is rapidly automating, especially in higher income countries where labor is increasingly expensive. Software-based workflows and hardware/robotics will allow for greater operational efficiency
- Increased demand for waste management technologies that facilitate resource recovery and recycling such as material recovery facilities (MRFs), advanced sorting technologies, and decentralized recycling systems to promote the reuse and repurposing of materials

1 – 5 Years

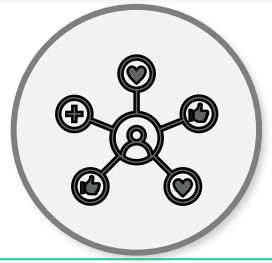
Focus on Regulations and Tech-enabled Efficiency



- Stricter regulations and policies (mainly stemming from CA and the EU) aimed at reducing waste generation and promoting sustainable waste management practices will drive innovation and a need to adapt by companies even far afield from waste management, especially oil & gas, tech, and industrial companies
- AI, Internet of Things, and robotics have already revolutionized many waste management processes through smart sensors for real-time monitoring, predictive analytics for optimizing collection routes, and robotic systems for automated sorting and processing of recyclable materials
- We expect an exponential increase in hazardous waste production as weapons manufacturing ramps up, requiring added resources for proper disposal
- The developed world is on the verge of a generational turnover in wealth and company management; as responsibility shifts to younger, more tech-savvy investors, the waste industry will see greater adoption of efficiency-related technology

5 – 10+ Years

Complete Cost-Effective Automation



- Next generation technologies will fully automate the waste management space, including nanomaterial-based filters for removing harmful chemicals and microplastics from wastewater and enzymes for the breakdown of organic pollutants into harmless byproducts
- Driverless car technology for solid waste pickup has not yet been perfected, but will be a catalyst for municipal cost containment in the future
- Increasing public awareness about the environmental and social impacts of waste will influence innovation in waste management technologies. There will be a greater emphasis on transparency, accountability, and community engagement in waste management practices, driving the development of solutions that are transparent and allow for long-term solutions looking 100+ years into the future

Top Acquirers

Investment for software companies in the waste management industry is varied, with many one-off transactions and a handful of repeat players making acquisitions (both strategic and buyout) or providing capital

AKKR
ACCEL-KKR

Dry powder:	Active portfolio:
$8.9B	70

Focus Areas: Logistics, fleet management

TITANGPS toolsgroup

AKKR works exclusively with mid-market enterprise software and technology-enabled services companies to drive growth and create value

AMCS | CLEARLAKE

EV: ND	20 acquisitions
Clearlake Capital	FTEs: ~1,000

Focus Areas: Horizontal waste management software

RECY SYSTEMS AG Recycling Software Systems · DESERT MICRO MOBILE SOFTWARE SOLUTIONS · TRUX WASTE INDUSTRY BUSINESS SOLUTIONS An AMCS Company

AMCS offers software and technology solutions that streamline logistics- With a specific focus on the waste and recycling industries they drive efficiency through process standardization and optimization

Hg

Dry powder:	Active portfolio:
$19.3B	52

Focus Areas: Logistics, food waste, waste management platform

Envidan · isys DELIVERING SOLUTIONS · GREENNEXT · access

HG Capital Partners is one of the largest investors in the software and service business space, targeting numerous verticals that include fleet management/ logistics and food waste management

Banneker Partners

Dry powder:	Active portfolio:
$481M	17

Focus Areas: Fleet management, process optimization

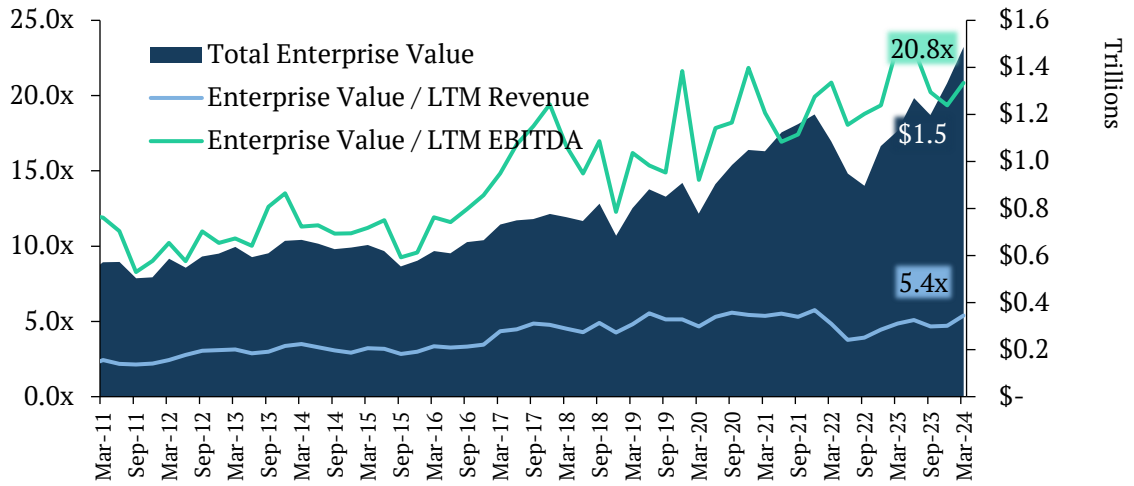
Routeware · RouteOptix · EasyRoute · ReCollect · Webaspx

Banneker Partners makes investments in growth-oriented software companies, including multiple stakes in fleet management/ logistics-oriented firms

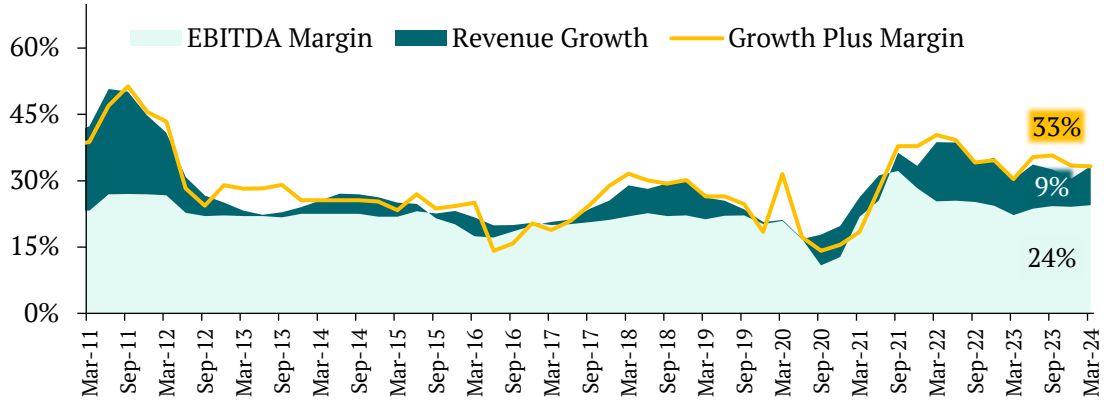
Waste Management Tech Trading Comps

Waste Management Trading Comps

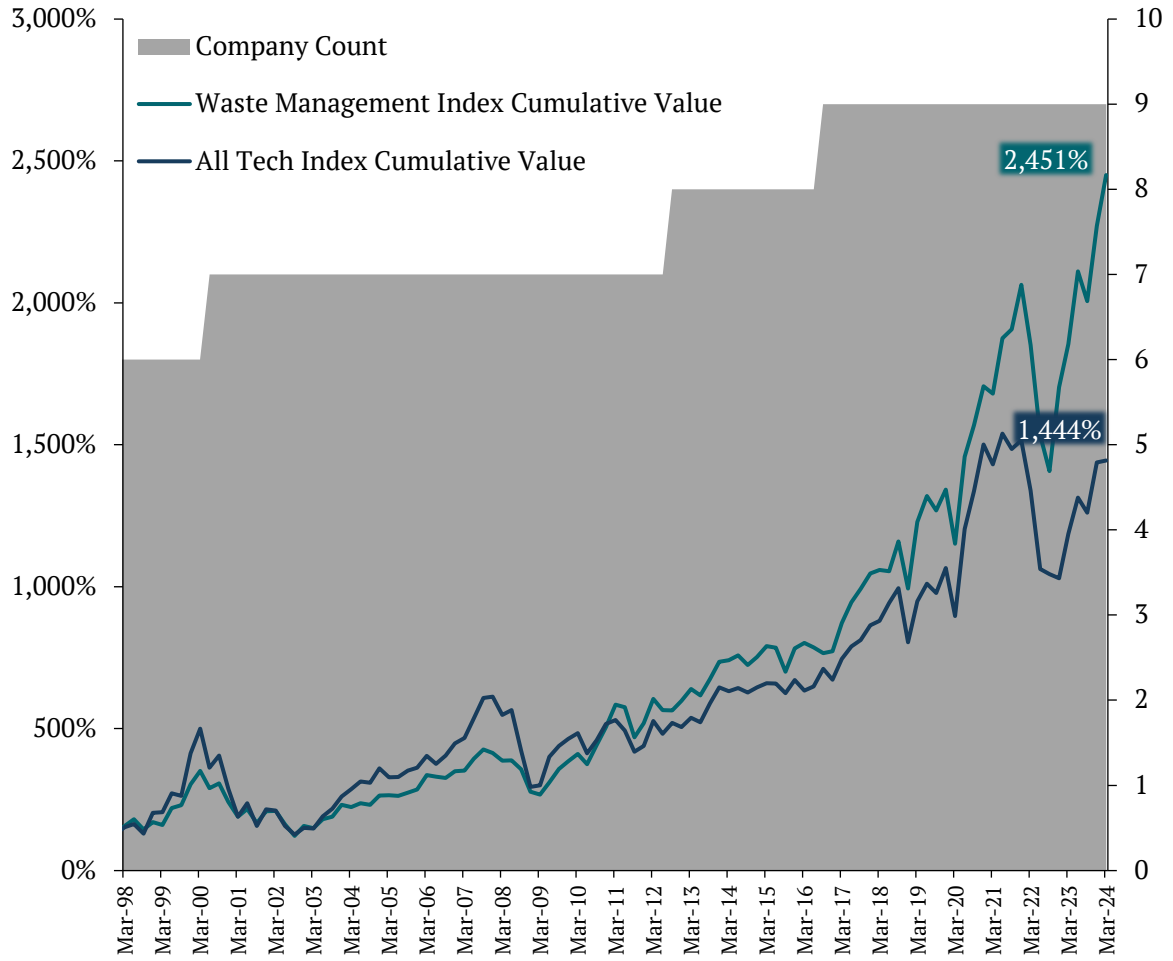
Median Subsector Trading Multiples



Subsector Growth + Margin



Company Count and Subsector Index vs. All Tech Index



Waste Management Trading Details

Comparable Public Companies

(USD, in millions, except stock price) Company	Stock Price 4/16/2024	Market Cap	Cash	Enterprise Value	Revenue NTM	Revenue LTM	Revenue Last FY	EBITDA NTM	EBITDA LTM	EBITDA Last FY	EV / Revenue NTM	EV / Revenue LTM	EV / Revenue Last FY	EV / EBITDA NTM	EV / EBITDA LTM	EV / EBITDA Last FY	Revenue Growth NTM	EBITDA Margin NTM	Growth + Margin NTM	Gross Margin LTM
Waste Management Technology																				
Oracle	$ 119.88	$ 329,492	$ 9,904	$ 408,127	$ 56,417	$ 52,510	$ 49,954	$ 29,857	$ 20,345	$ 18,454	7.2x	7.8x	8.2x	13.7x	20.1x	22.1x	7%	53%	60%	72%
International Business Machines	181.25	166,160	13,441	212,734	64,053	61,860	61,860	15,776	14,023	14,023	3.3x	3.4x	3.4x	13.5x	15.2x	15.2x	4%	25%	28%	55%
SAP	180.23	213,337	12,677	210,654	37,469	33,768	33,768	10,034	7,602	7,602	5.6x	6.2x	6.2x	21.0x	27.7x	27.7x	11%	27%	38%	72%
ServiceNow	735.81	151,122	4,877	148,529	11,405	8,971	8,971	4,006	1,292	1,292	13.0x	16.6x	16.6x	37.1x	NM	NM	27%	35%	62%	79%
Honeywell	194.02	126,356	8,095	140,382	38,962	36,662	36,662	10,123	8,779	8,779	3.6x	3.8x	3.8x	13.9x	16.0x	16.0x	6%	26%	32%	37%
Schneider Electric	225.83	126,085	5,191	137,076	41,706	38,849	38,849	8,763	7,820	7,820	3.3x	3.5x	3.5x	15.6x	17.5x	17.5x	7%	21%	28%	42%
Roper Technologies	528.26	56,536	214	62,695	7,046	6,178	6,178	2,887	2,663	2,663	8.9x	10.1x	10.1x	21.7x	23.5x	23.5x	14%	41%	55%	70%
Rockwell Automation	285.90	32,762	440	36,245	9,367	9,129	9,058	2,097	1,791	1,985	3.9x	4.0x	4.0x	17.3x	20.2x	18.3x	3%	22%	25%	41%
Fortive	81.60	28,673	1,889	30,600	6,549	6,065	6,065	1,866	1,571	1,571	4.7x	5.0x	5.0x	16.4x	19.5x	19.5x	8%	28%	36%	59%
25th Percentile											**3.6x**	**3.8x**	**3.8x**	**13.9x**	**17.1x**	**17.1x**	**6%**	**25%**	**28%**	**42%**
Median											**4.7x**	**5.0x**	**5.0x**	**16.4x**	**19.8x**	**18.9x**	**7%**	**27%**	**36%**	**59%**
75th Percentile											**7.2x**	**7.8x**	**8.2x**	**21.0x**	**21.1x**	**22.5x**	**11%**	**35%**	**55%**	**72%**
Mean											**5.9x**	**6.7x**	**6.8x**	**18.9x**	**20.0x**	**20.0x**	**10%**	**31%**	**41%**	**58%**

LTM = Last Twelve Months NM = Not Material FY = Calendar Year
Sources: PitchBook, Company Filings, and IP Estimates
Sorted by Enterprise Value

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