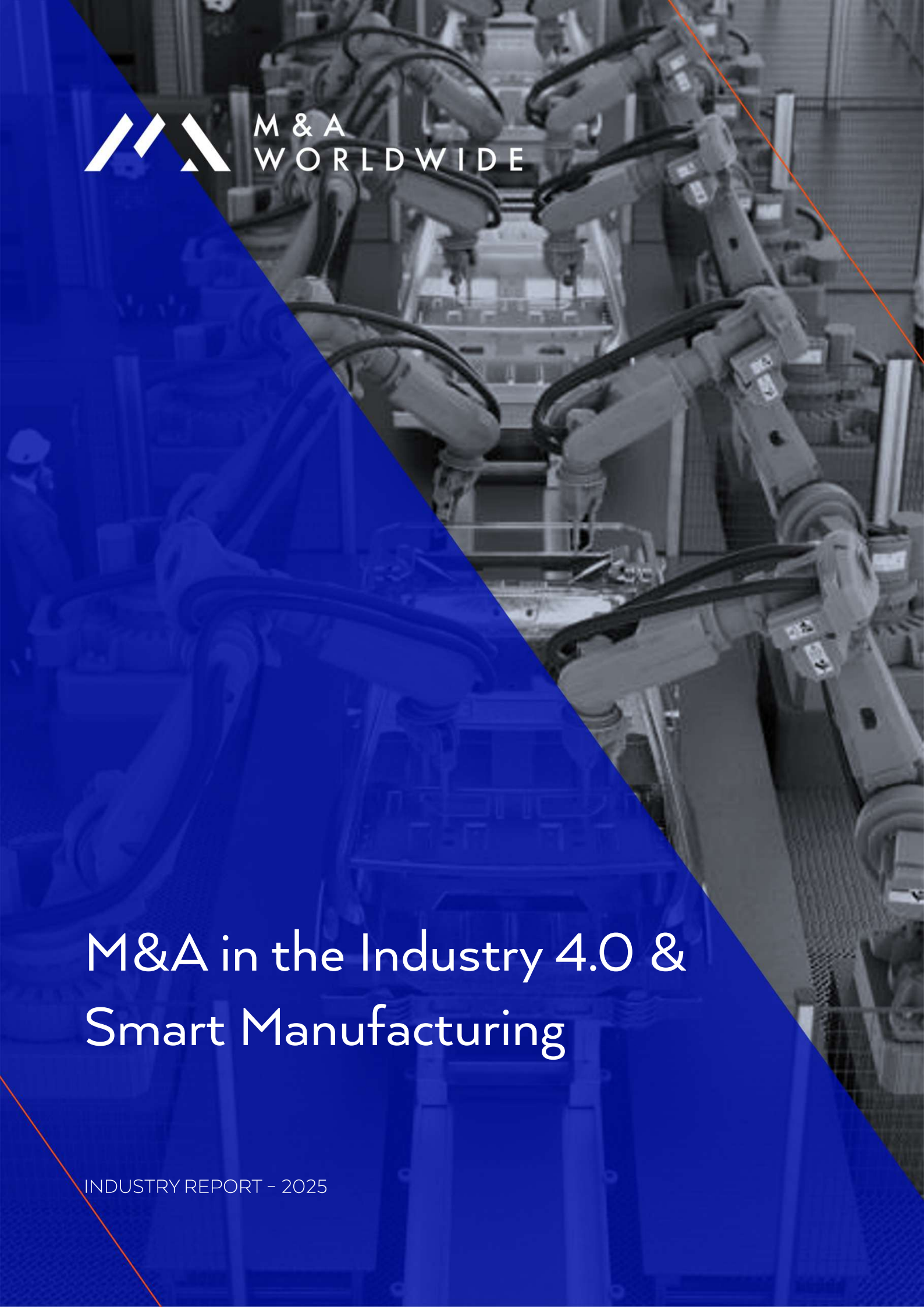

M&A WORLDWIDE

M&A in the Industry 4.0 & Smart Manufacturing

INDUSTRY REPORT – 2025

M&A WORLDWIDE

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1. Executive Summary

This report provides a comprehensive review of global M&A activity in the Industry 4.0 and Smart Manufacturing sector between 2019 and 2024. Over this five-year period, the industrial landscape has undergone rapid transformation, fueled by digital technologies that enhance productivity, resilience, and cost efficiency. As organizations worldwide accelerate their digital transformation efforts, Mergers & Acquisitions have emerged as a critical lever to acquire innovation, expand capabilities, and gain competitive advantage.

The sector saw a high deal activity across all major regions, underpinned by strategic and financial buyers eager to capitalize on automation, AI, robotics, edge computing, and data analytics. Valuation multiples peaked in 2020-2022 during a period of investor enthusiasm but moderated slightly by 2023 amid macroeconomic tightening. Even so, the M&A outlook remained bullish due to high demand for scalable, data-driven industrial platforms.

Private equity (PE) played an increasingly prominent role, accounting for over 43% of transactions by 2023, driven by roll-up strategies and platform building. Strategic acquirers such as Siemens, Hitachi, Rockwell Automation, and Schneider Electric actively pursued acquisitions to enhance their smart manufacturing offerings, while AI and cybersecurity firms became prime acquisition targets.

As industrial buyers shift from revenue growth to profitability and operational resilience, the focus has moved to EBITDA-positive targets and post-merger integration excellence. Integration strategies that prioritize IT compatibility, cybersecurity, and cultural fit have proven essential for long-term success.

Some highlights on our analysis:

2022 saw a peak in M&A activity in the sector with a deal value of € 31.4B and 197 deals

Valuation strategies evolved post-2022, with acquirers increasingly prioritizing profitable, cash-flow-generating businesses

Private equity drove more Industry 4.0 deals, with sponsor-backed M&A rising from 36% to 43% (2021-2023)

Rising demand for real-time, decentralized data processing fueled edge computing acquisitions for scalable, autonomous systems

M&A increasingly targeted energy efficiency, with smart systems cutting energy use by 20% and downtime by 25%

Buyers are shifting to future tech quantum, additive manufacturing, blockchain logistics, and 3D printing to build new-gen infrastructure

Source: M&A Worldwide analysis

2. Market Overview

Industry 4.0 refers to the ongoing transformation of manufacturing through the integration of advanced digital technologies such as IoT, AI, robotics, cloud computing, big data, 3D printing, and AR/VR. First introduced by the German government in 2011, it represents the fourth industrial revolution, aiming to improve product quality and reduce costs by connecting physical, digital, and biological systems. The Industry 4.0 market is projected to grow from **$102.3B in 2024 to $309.5B by 2032**, with a **CAGR of 14.8%** during the forecast period.

The Industry 4.0 & Smart Manufacturing sector has emerged as one of the fastest-growing M&A segments in the global industrial landscape from 2019 to 2022, driven by technological advancements and the increasing adoption of digital transformation solutions across industries. This growth is fueled by the convergence of multiple cutting-edge technologies, including: automation, artificial intelligence (AI), robotics, cloud computing, edge computing, and the Internet of Things (IoT). These innovations have created a thriving ecosystem of companies seeking strategic consolidation, partnerships, and market expansion through mergers and acquisitions (M&A).

Global AI revenue expected to increase 18.9% annually from 2024-2032

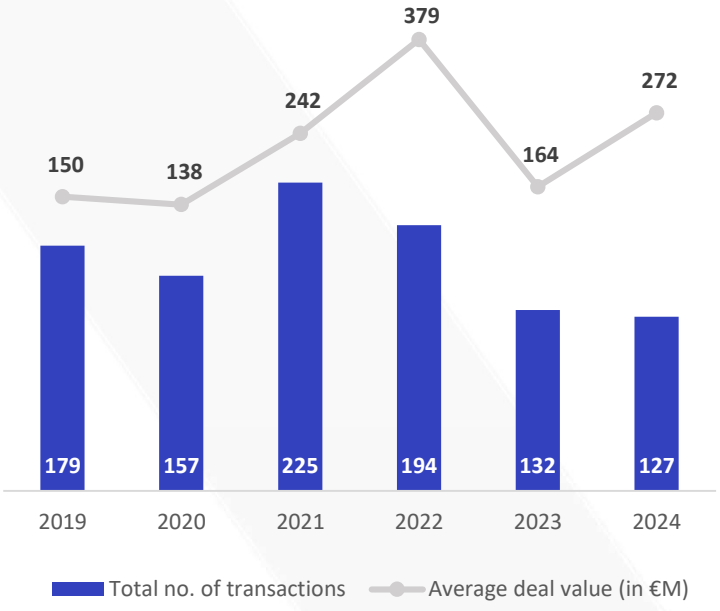
Global additive manufacturing market forecasted to increase 20% per year over 2024-2032

IoT connected devices expected to increase by 10% annually from 2024-33

The global push toward digital transformation has prompted both strategic investors and private equity funds to take a keen interest in companies operating in the Industry 4.0 space. The market's evolution is also being accelerated by the increasing importance of data-driven decision-making, predictive maintenance solutions, and smart factories, which have become essential in maintaining competitiveness in the industrial sector.

3. M&A Analysis

3.1. Deal Value & Volume



- M&A activity in the Industry 4.0 space tends to mirror shifts in investor sentiment and macroeconomic conditions, rising during periods of low interest rates and tightening as financial conditions harden
- Deal volume peaked at 225 transactions in 2021 but declined to 127 by 2024, reflecting a strategic shift from quantity to quality in dealmaking.
- Despite fewer deals, average deal value increased from €164M in 2023 to €272Min 2024, signaling a focus on larger, more impactful acquisitions.
- The combination of fewer deals and higher values highlights a maturing M&A environment, where integration success and tech alignment are critical to unlocking value.

Source: M&A Worldwide analysis, Capital IQ pro, Statista,

3.2. M&A Trends & Outlook

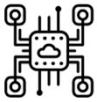
3.2.1. BPO M&A Trends

Several factors have contributed to this surge in M&A activity:

Strong Demand for Automation Solutions:

The automation market has grown rapidly, driven by the need for operational efficiency and reduced dependence on human labor in critical production areas. This trend has fueled acquisitions aimed at integrating automation into traditional manufacturing processes.

Adoption of IoT and AI Technologies:



Companies are increasingly adopting IoT-based solutions to monitor and optimize production in real-time. M&A transactions have been particularly active in this sub-sector, with AI-driven analytics companies becoming prime targets for industrial giants seeking predictive and prescriptive analytics capabilities.

Supply Chain Disruptions and Resilience Building:

The disruptions caused by the COVID-19 pandemic exposed significant vulnerabilities in global supply chains. In response, companies have sought to improve their supply chain resilience through acquisitions of digital twin solutions, inventory optimization software, and supply chain visibility platforms.

3.2.2. Biggest Disclosed Transactions

Date	Target	Country	Deal type	Buyer	Transaction Value (€M)
Oct-24	Barnes Group Inc.	USA	Majority	Apollo Global Management, Inc. (NYSE:APO)	3,356.1
Aug-24	ZT Group Intl, Inc.	USA	Majority	Advanced Micro Devices, Inc. (NASDAQGS:AMD)	4,523.7
Sep-22	AVEVA Group Plc	United Kingdom	Majority	Schneider Electric S.E. (ENXTPA:SU)	4,522.9
Jul-22	Tsinghua Unigroup Co.,Ltd	China	Majority	Beijing Zhiguangxin Holding Co., Ltd	8,051.5
May-22	National Instruments Corporation	USA	Majority	Emerson Electric Co. (NYSE:EMR)	8,070.5
Jan-22	Wind River Systems, Inc.	USA	Majority	Aptiv PLC (NYSE:APTV)	3,303.3
Nov-21	Inmarsat Group Limited	United Kingdom	Majority	Viasat, Inc. (NASDAQGS:VSAT)	5,644.6
Jun-21	Cloudera, Inc.	USA	Majority	Clayton, Dubilier & Rice, LLC; KKR & Co. Inc. (NYSE:KKR)	3,965.5
Mar-21	Globallogic Inc	USA	Majority	Hitachi Ltd	8,186.2
Feb-21	Dialog Semiconductor Plc	United Kingdom	Majority	Renesas Electronics Corporation (TSE:6723)	4,829.8

Source: M&A Worldwide analysis, Capital IQ Pro

M&A in Industry 4.0 & Smart Manufacturing are primarily driven by strategic acquirers looking to modernize their operations and private equity firms aiming to build scalable, high-margin industrial technology platforms. Industrial technology giants have been actively acquiring Industry 4.0 firms to accelerate digital transformation and automation capabilities. Large manufacturers are prioritizing industrial AI, robotics, digital twins, and IIoT to enhance factory efficiency, lower costs, and reduce reliance on manual processes.

Some relevant transactions are:

- Siemens AG's acquisition of Brightly Software for €1.77B (2022) to expand its capabilities in building automation and energy management. This move aligns with Siemens' broader digital transformation strategy in industrial automation.
- Rockwell Automation's €1.59B acquisition of Plex Systems in 2021 to enhance its cloud-based manufacturing execution systems (MES). This acquisition reflects the growing demand for cloud solutions in smart manufacturing.
- Hitachi's acquisition of GlobalLogic for €6.97B (2021), one of the largest transactions in the sector, aimed at boosting its IoT and digital transformation services in industrial and automotive markets.

3.2.3. Valuation Multiples Evolution

Over the last six years, valuation multiples for Industry 4.0 transactions have evolved significantly, with peak valuations occurring in 2020–2022 due to investor enthusiasm for digital transformation in manufacturing. However, recent economic pressures have led to a moderate adjustment in multiples.

Year	EV/Revenue Multiple[1]	EV/EBITDA Multiple[1]	Key Market Trends
2019	3.4x	18.4x	AI-driven predictive maintenance gaining traction
2020	2.4x	27.2x	Surge in investor interest amid digital transformation boom
2021	3.9x	15.6x	Revenue-driven growth in automation; profitability under pressure
2022	3.4x	19.3x	Focus shifts to profitability & cost efficiencies
2023	3.4x	18.6x	Normalization of M&A multiples
2024	2.0x	17.9x	High interest rates impact leverage, select premium deals remain

- M&A premiums are now shifting toward EBITDA-positive firms, with acquirers favoring companies that demonstrate sustainable cash flow rather than just growth.
- Private equity (PE) firms are leading the charge in acquiring EBITDA-positive mid-cap automation firms, focusing on operational efficiencies.

3.2.4. M&A Activity by Region

The M&A landscape for Industry 4.0 is highly dynamic, with different regions demonstrating unique characteristics and strategic priorities:

- **North America** – Dominates the market in both deal value and volume, driven by the high concentration of advanced technology firms and strong demand for automation and IoT solutions. The United States, in particular, has seen significant private equity activity, with numerous technology-focused funds investing in mid-cap industrial tech companies.
- **Europe** – A global leader in smart manufacturing initiatives, with countries like Germany, France, and the UK focusing on Industry 4.0 strategies. Cross-border deals have become increasingly common, particularly in acquiring niche technology providers. Germany's "Industrie 4.0" initiative has played a pivotal role in positioning the country as a hub for M&A activity in the sector. European firms (Siemens, ABB, Schneider Electric) continue acquiring AI & software-driven industrial firms.

Source: M&A Worldwide analysis, Capital IQ Pro

- **Asia-Pacific** – The fastest-growing region, fueled by strong industrial development in China, Japan, and South Korea. The Chinese government's emphasis on "Made in China 2025" has led to significant domestic and outbound M&A transactions aimed at acquiring Industry 4.0 technologies.

Region	Key Drivers of BPO M&A
North America	AI-driven automation, predictive maintenance acquisitions
Europe	Industrial IoT software & robotics investments
Asia-Pacific	China and Japan leading AI & smart factory acquisitions
Latin America	Emerging automation hubs, supply chain nearshoring

3.3. Most Active Buyers

3.3.1. Top 10 most Active Buyers in the 4.0 Industry

Buyer	Country	Description	Deals from 2019-2024
HMS Networks AB (publ) (OM:HMS)	Sweden	Software company in the field of industrial information and communication technology	6
Microsoft Corporation (NASDAQGS:MSFT)	USA	Technology conglomerate in operating systems and cloud computing markets	5
ATS Corporation (TSX:ATS)	Canada	Factory automation solution provider	4
Prima Industrie SpA	Italy	Technology company for sheet metal and additive manufacturing automation	4
Thoma Bravo, L.P.	USA	Private equity firm	4
Nano Dimension Ltd. (NASDAQCM:NNDM)	Israel	Technology company in the field of additive manufacturing and 3D printing	4
Montagu Private Equity LLP	United Kingdom	Private equity firm	4
Siemens Aktiengesellschaft (XTRA:SIE)	Germany	Technology conglomerate focused on industrial automation, distributed energy resources, rail transport and health technology	4
Vinci SA (ENXTPA:DG)	France	Concessions and construction company	4
Accenture plc (NYSE:ACN)	Ireland	Provider of IT services and management consulting	4

3.3.2. the Role of Private Equity in the 4.0 Industry

Private equity (PE) firms have increased their presence in Industry 4.0 M&A, focusing on aggregating mid-cap automation firms to drive efficiency and scale operations. Sponsor involved deal passed from 36% in 2021 to 43% in 2023.

Private equity roll-up strategies:

- Acquiring multiple mid-cap automation providers and integrating them into a scalable industrial technology platform.
- Focusing on high-margin businesses such as predictive analytics, AI-driven robotics, and cybersecurity.
- Driving operational efficiencies by centralizing R&D, supply chain management, and software development.

Source: M&A Worldwide analysis, Capital IQ Pro

3.4. M&A Driver Behind Industry 4.0 & Smart Manufacturing

3.4.1 The Role of Robotics & AI in M&A Strategy

Artificial intelligence (AI) and robotics have emerged as primary M&A drivers in the Industry 4.0 space. Companies that integrate robotics into their production have an average increase of 10-15% in production capacity and a 5-7% reduction in production costs.

Case Studies of robotic and AI-Driven acquisitions:

- January'24, ABB's acquired of Sevensense Robotics (undisclosed consideration), expanding leadership in next-generation AI-enabled mobile robotics.
- October'23, Rockwell Automation completed the acquisition of Clearpath Robotics (€586M), strengthening Rockwell's position in the growing field of autonomous technology.
- June'21, Keysight Technology acquired, Eggplant (€293M), enabling Keysight to expand the scope of its testing portfolio beyond hardware.

3.4.2. Cybersecurity & Industrial IoT (IIoT) as M&A Hotspots

The increasing interconnectivity of smart factories has resulted in a surge in cybersecurity-related M&A activity. As cyber threats targeting industrial automation increase, large industrial firms are acquiring IIoT security companies to enhance resilience and compliance with global cybersecurity regulations.

Case Studies of Cybersecurity and IoT acquisitions:

- July 2023, Honeywell acquired Scadafence (€47M), strengthening its cybersecurity software portfolio.
- October 2021, Clavister Holding AB, acquired Omen Technologies (€9M) enhancing the company's portfolio and to tap into the fast-growing AI market.
- March 2021, Scryb acquired Cybeats Technologies Inc. (€10M), scaling the high-growth potential of Cybeats.

3.4.3. Sustainability & Green Manufacturing Driving M&A Activity

Governments and investors are increasingly prioritizing energy-efficient manufacturing as AI-powered systems can predict and prevent equipment failures, reducing downtime and maintenance costs by up to 25% and AI can optimize energy usage by up to 20% by identifying and mitigating energy-wasting patterns. This lead to a rise in green-tech and smart energy acquisitions.

Case Studies of green manufacturing acquisitions:

- May 2022, Schneider Electric, acquired Autogrid (undisclosed consideration), delivering cutting-edge technologies to drive adoption of smart grids and reduction of carbon emissions.
- September 2021, Nano Dimension acquired Meta Additive (€13M), evolutionizing additive manufacturing while protecting the planet's future.

3.4.4. Consolidation in Smart Factories & Edge Computing

With the growing adoption of edge computing and AI-powered industrial analytics, M&A activity in smart factories has increased. Companies are acquiring edge computing firms to enhance real-time data processing in industrial automation.
Case Studies of Edge computing acquisitions:

- March 2023, IBM acquired Uptake Technology (undisclosed consideration), advancing IBM's hybrid cloud and AI strategy.
- January 2022, Johson Controls, has completed the acquisition of FogHorn (€780M), accelerating the pace towards It's vision of smart, autonomous buildings and automatically respond to the needs of the environment and people.
- June 2018, Rockwell Automation has made €848M an equity investment in PTC, driving industrial innovation and accelerating growth.

Source: M&A Worldwide analysis

3.5. Risks, Challenges, & Regulatory Compliance

3.5.1 Post-Merger Integration Risks in Industrial Technology M&A

M&A transactions in Industry 4.0 come with significant post-merger integration (PMI) challenges, particularly when merging legacy manufacturing systems with AI-driven automation platforms. Poor integration planning can erode deal value, resulting in lower-than-expected ROI.

Key Challenges in Merging Legacy Systems with AI/Automation

Challenge	Impact on M&A Success	Case Study Example
Incompatible IT Infrastructures	Integration failures lead to prolonged downtime	Siemens struggled with Senseye integration due to incompatible legacy platforms
Cultural Resistance to Automation	Slows AI adoption & workforce optimization	ABB faced operational pushback after ASTI Mobile Robotics acquisition
Data Silos & Cybersecurity Risks	Vulnerabilities in smart factory networks	Honeywell's SCADAfence integration required significant cybersecurity upgrades

Case Study: Schneider Electric's Acquisition of AVEVA (€4.6B, 2023)

- Deployed AVEVA Discrete Lean Management across 70+ sites in 2 years, replacing paper-based processes with digital workflows.
- Achieved a 10% productivity increase by reducing downtime and improving line efficiency.
- Enabled 70% faster issue response through real-time data and automated escalation.
- Standardized operations globally, supporting Schneider's Smart Factory goals and continuous improvement initiatives.

Best Practices for Managing Post-Merger Integration in Industry 4.0 M&A

- Conduct comprehensive IT audits before acquisition to assess compatibility.
- Retain key leadership teams post-acquisition to ease technology transition.
- Implement cybersecurity protocols to protect IoT-based smart factories from cyber threats.

3.5.2 Regulatory Challenges & Compliance Risks in Industrial M&A

Regulatory challenges are becoming a major financial consideration in Industry 4.0 M&A, particularly around data privacy, cybersecurity, and energy efficiency mandates. Companies that fail to address these issues during due diligence may face legal fines, integration delays, or valuation downgrades.

Major Compliance Risks in Smart Manufacturing M&A

Regulation	Key Compliance Requirements	M&A Implications
GDPR (EU)	Data protection rules for IIoT and smart factories	Requires compliance audits before cross-border acquisitions
NIST Cybersecurity Framework (U.S.)	Industrial cybersecurity best practices	Due diligence needed for cyber-vulnerable automation firms
Energy Efficiency Mandates (Global)	Sustainability requirements for manufacturing plants	ESG-compliant firms attract higher M&A valuations

Case Study: Honeywell acquisition of SCADAfence (€47M, 2023)

- Honeywell acquired SCADAfence in July 2023 to close a critical gap in its OT cybersecurity portfolio. SCADAfence's solutions—covering asset visibility, threat detection, vulnerability management, and compliance—were integrated into the Honeywell Forge Cybersecurity+ suite. This move strengthened Honeywell's ability to offer end-to-end cybersecurity services, reduced dependence on third-party vendors, and enhanced overall product margins.

Source: M&A Worldwide analysis

- SCADAfence had strong product offerings but limited capital and market penetration. Honeywell's global reach enabled rapid scale and deployment. Within just three months post-acquisition, Honeywell launched two integrated cybersecurity products:
    - Cyber Insights for site-level asset visibility and threat detection.
    - Cyber Watch for enterprise-wide oversight across multiple OT sites.
- SCADAfence's Tel Aviv headquarters became a key addition to Honeywell's Cybersecurity Center of Excellence. This strengthened Honeywell's global cybersecurity R&D footprint and reinforced its commitment to innovation in OT and IoT security.

3.5.3 Best Practices for Industry 4.0 M&A Transactions

Best Practice	Key Benefit
Conducting Cybersecurity Due Diligence	Reduces regulatory and operational risks
Prioritizing EBITDA-Positive Targets	Increases post-merger ROI
Aligning AI and ERP Systems Before Acquisition	Prevents integration delays and inefficiencies
Securing Local Supply Chain Partners	Reduces geopolitical risks and logistics costs

3.6. The Future of the 4.0 Industry M&A

By 2030, M&A in Industry 4.0 will be driven by automation and data-driven intelligence, with smart industrial firms becoming highly attractive acquisition targets.

Emerging Technology Hotspots: Quantum computing, blockchain, and additive manufacturing will be key M&A areas, offering opportunities for firms to integrate next-gen technologies into their portfolios.

3D Printing & On-Demand Production: The rise of 3D printing acquisitions will continue, as manufacturers increasingly adopt on-demand production to improve efficiency and flexibility.

Blockchain-Driven Logistics: Acquisitions focused on blockchain-driven supply chains will accelerate, particularly for enhancing the security and efficiency of industrial logistics systems.

4. Conclusion

Between 2019 and 2024, M&A became a cornerstone of strategic growth in the Industry 4.0 and smart manufacturing ecosystem. Amid ongoing disruption and technological innovation, dealmaking provided both scale and speed essential in a landscape where time-to-market and operational agility are critical.

The data shows a maturation in investor behavior: while early years saw high enthusiasm for growth-stage automation firms, recent years have favored mature, cash-flow-positive businesses with proven technologies and scalable models. This shift has recalibrated valuations and elevated the importance of disciplined deal execution.

Looking ahead, M&A will remain pivotal as industrial players race to integrate AI, robotics, IIoT, and sustainable energy solutions into their operations.

To succeed, acquirers must look beyond technology and focus on integration planning, talent retention, and regulatory compliance. The most successful deals will be those that not only secure new capabilities but also unlock synergies and deliver measurable improvements in productivity and customer value.

In short, M&A is no longer just an expansion toolit is the strategic engine driving the evolution of the industrial world.

Source: M&A Worldwide analysis

5. Notable Transactions

Germany 02/2025	Ireland 01/2025	Peru 11/2024
Annapurna Holding GmbH has acquired HORNEX	Hollybow Limited has acquired ABREL	Sika has acquired Chema Calidad que Construye
Sell-side	Buy-side	Sell-side
Ireland 11/2024	Italy 10/2024	Germany 09/2024
PCP Debt (re)finance for MTD®	Munters has acquired GEOCLIMA Smart HVAC Solutions	Jowat Klebstoffe has acquired PETEC Compounding Solution
Debt advisory	Sell-side	Sell-side
USA 09/2024	Norway 07/2024	Ireland 07/2024
PRECISION has acquired MSK	Ernströmgruppen has acquired NORSAP	Glanua For a cleaner planet has acquired aquaoperations A Glanua Company
Buy-side	Sell-side	Buy-side

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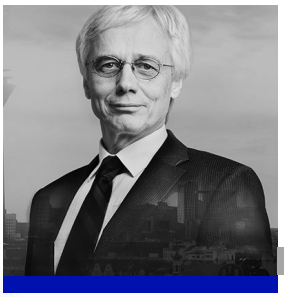

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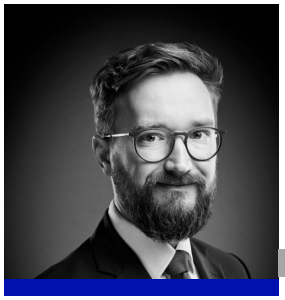

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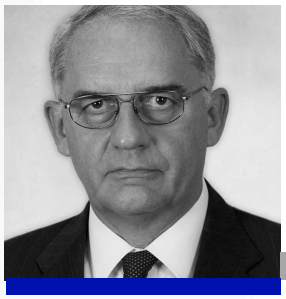

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