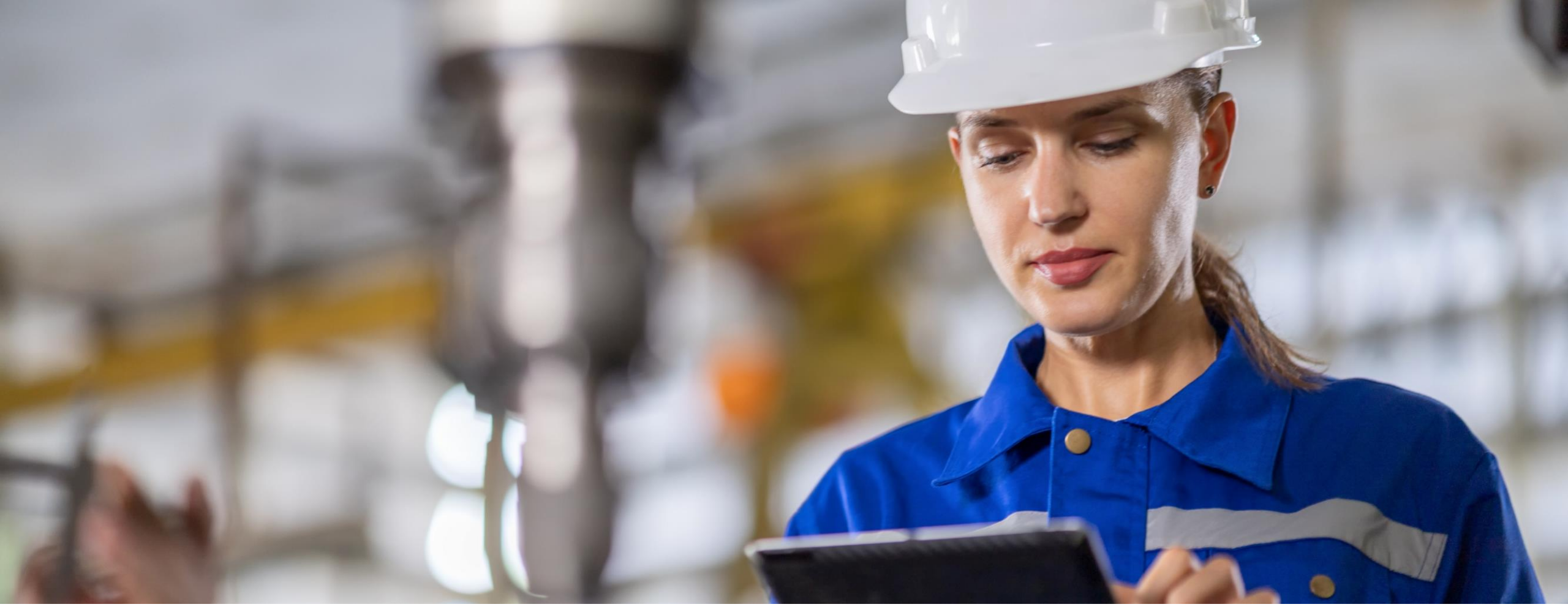

# Process Industry Automation

## Fast-growing market with structural tailwinds and investment opportunities

November 2025

Harris Williams | LEK™

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# The global process industry automation market is expected to see strong growth, reaching c.$160B by 2030 driven by technological innovation and megatrends including regulation, AI and cybersecurity



**Market is expected to grow attractively, driven by emerging applications including AI**

- The global process industry automation market grew from c.$66B (2015A) to c.$106B (2024A) and is forecast to reach c.$160B by 2030. Most of the market (c.85%) is concentrated in six sectors: oil & gas, power, mining, chemicals, food & beverage and pharmaceuticals
- Market growth is underpinned by stricter regulation (including the EU AI Act) and stricter sustainability reporting rules, as well as a technology push (edge AI, private 5G, open control architectures), which together expand spend on data capture, analytics and compliance reporting
- Technological innovations such as digital twins and physics-informed models are accelerating commissioning and elevating predictive maintenance

**Process industry automation is being impacted by several favourable megatrends**

- The regulatory bar is rising, forcing continuous measurement, reporting and control across plants (e.g., EU CSRD requiring ESRS reporting, EU Methane Regulation mandating MRV and LDAR)
- AI is now embedded at every layer of the technology stack, with private 5G enabling real-time feedback loops and open, modular architecture making multi-vendor upgrades practical; wider adoption of digital twin models and distributed automation architectures
- Workforce shortages and increasing regionalisation are accelerating automation and platform standardisation

**Growth is fuelled by emerging applications in the field**

- New smart applications, such as AI-enabled optimisation, predictive maintenance, emissions management, and cyber threat detection, are fuelling growth in the process industry automation market
- Use of digital twins to virtually model the impact of scenarios and operational changes before occurrence reduces downtime, improves yields and de-risks CapEx
- Distributed automation (implementing modular, edge-based architecture) shifts control closer to the process, improving decision speed, flexibility, scalability and resilience

**Profitability and revenue of key players remains favourable**

- IP-rich AI and machine learning-based services enable leading players to defend market positions and capture recurring aftermarket growth as process industry automation remains a top technology investment priority for a majority of manufacturers
- Demand is shifting towards comprehensive and globally deployed intelligent automation solutions, making providers integral to operations within customer value chains
- 650+ M&A deals in the past four years signal continued consolidation, as strategics focus on filling technology gaps in AI, predictive analytics and IIoT

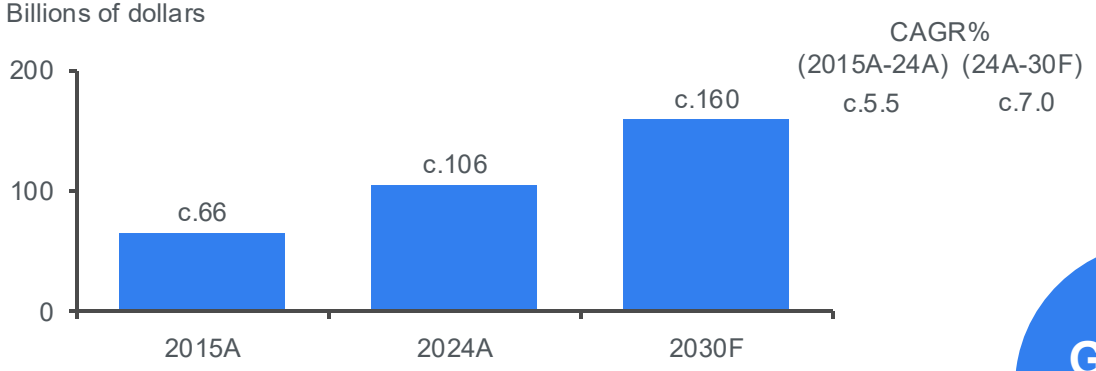
Note: CHIPS – Creating Helpful Incentives to Produce Semiconductors (U.S. Law Act), CSRD – Corporate Sustainability Reporting Standards, ESRS – European Sustainability Reporting Standards, IIoT – Industrial Internet of Things, MRV – Monitoring, Reporting and Verification, LDAR – Leak Detection and Repair; Source: L.E.K. research and analysis

# The global process industry automation market is expected to continue seeing strong growth supported by a range of structural drivers; the market is largely focused around six key sectors



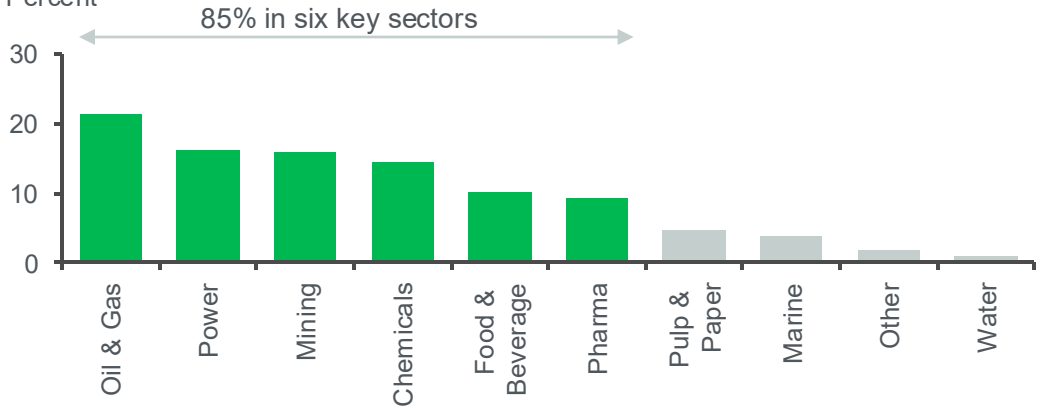
## Global process industry automation market (2015A-30F)

Billions of dollars




## Estimated process industry automation breakdown by sector (2024A)

Percent




**Growing market**

## Market views on process industry automation growth

*"… Climate change, geopolitics, and industrial action are still exerting pressure on global supply chains, but **advanced technologies like AI can help** refine and optimise them."*
*- World Economic Forum*

*"… Order growth has been **especially strong in the Process Industry Automation** business area."*
*- ABB Q2 2025 Results*

*"… Any company performing **high-volume functions will boost their capabilities and save money and time** with process industry automation."*
*- The Institute for Robotic Process Automation*

## Structural growth drivers

- Edge AI and private 5G enabling higher autonomy, quality and uptime
- Plug-and-play automation capabilities accelerating upgrades and expansions
- Workforce scarcity
- Capacity build-out
- Emissions and product reporting regulation
- AI / cyber compliance
- Reshoring to primary markets
- Energy cost pressure
- Decarbonisation initiatives

Sources: L.E.K. research and analysis, Markets and Markets

# Process industries are being impacted by overarching megatrends that create a range of opportunities and challenges for businesses



| Relevant megatrends | | Impact on process industries |
|---|---|---|
| **Geopolitics & regionalised supply chains** | *Geopolitical tensions and economic nationalism are reshaping supply strategies and production footprints* | Deploy **modular process units** for rapid setup and relocation across regions<br>Build **regionalised value chains** with digital twins for sourcing, logistics and compliance traceability<br>Use **AI-powered scheduling** and supply risk engines to dynamically balance loads/respond to disruption |
| **AI-driven process & workforce transformation** | *Enabling human-machine collaboration across operations and applying AI to optimise production, maintenance and decision-making* | Rely on more **remote/automated monitoring** and AI assistants to stretch teams<br>**Capture expert know-how** with digital SOPs, AR/ VR and analytics<br>**Integration of AI and digital twin systems** to simulate, forecast and optimise process operations |
| **Decentralised control systems** | *Shift from traditional, hierarchical automation architectures (central DCS and SCADA) towards modular and decentralised control* | Enable **modular operations** by deploying process units faster through plug-and-produce architectures<br>**Distribute control logic** to the edge for faster, more autonomous and resilient process optimisation<br>Reduce **single-point failures** through segmented control domains and secure-by-design architectures |
| **Health & safety** | *Rising safety standards (such as IEC 61511, ISA 84) are driving adoption of real-time monitoring and AI-based hazard detection* | Find hazards and set the right protection level for each safety function<br>**Auto-schedule and record** proof tests; control and log any overrides<br>Run **online checks** to catch hidden faults early |
| **Decarbonisation & energy efficiency** | *Regulators and customers demand active decarbonisation (e.g.,electrification) and transparent emissions accounting* | **Provide continuous emissions proof** through always-on measurement and automated reporting<br>**Optimise energy and electrify heat** to cut $CO_2$ and fuel use<br>Embed **product-level carbon accounting** to evidence footprints across the supply chain |
| **Cybersecurity, resilience & compliance** | *Protecting increasingly connected and autonomous operations and ensuring system integrity* | Ensure **CPS protection** and OT network hardening<br>Comply with data sovereignty and **digital trust frameworks** |

Note: AR – Augmented Reality, CPS – Cyber-Physical Systems, DCS – Distributed Control System, IEC – International Electrotechnical Commission, ISA – International Society of Automation, OT – Operational Technology, SCADA – Supervisory Control and Data Acquisition, SOP – Standard Operating Procedure, VR – Virtual Reality

# These megatrends are enabled by advances in digital technologies and are resulting in several emerging process industry automation applications



| | Megatrends | | | | | | |
|---|---|---|---|---|---|---|---|
| **Process Industry Automation Applications** | **Geopolitics & regionalised supply chains** | **AI-driven process & workforce transformation** | **Decentralised control systems** | **Health & safety** | **Decarbonisation & energy efficiency** | **Cybersecurity, resilience & compliance** | **Comment** |
| **Decentralised, modular production setup** | ■ | | ■ | | | | Enabling rapid setup and relocation across regions |
| **AI-powered scheduling** | ■ | | | | | | Dynamically balance loads/respond to disruption |
| **AI-augmented workforce assistants** | | ■ | | | | | Embedded assistants that guide decision-making, surface anomalies and reduce cognitive load |
| **Digital twin process optimisation** | | ■ | | | | | Digital twin models for real-time resilience testing and scenario planning |
| **Condition-based/predictive maintenance** | | ■ | | | | | Leveraging sensor data and analytics to optimise when to service or replace an asset |
| **Smart production processes (incl. distributed automation)** | | ■ | ■ | | | | Modular, resilient control enabling faster decisions, easier scaling and reduced downtime |
| **AI-powered health & safety automated systems** | | ■ | | ■ | | | Predict risks and autonomously prevent incidents by using AI, computer vision and IoT sensors |
| **Advanced instrumentation and monitoring** | | | | ■ | ■ | | Using sensors and software for critical process monitoring and control applications |
| **Product-level carbon accounting/analytics** | | | | | ■ | | Carbon footprint evidence across the supply chain |
| **Threat detection and incident response** | | | | | | ■ | Identify cyber and operational threats early, automate responses, and strengthen resilience |

**Key:** ■ Main megatrend driving each process industry automation application ▭ *Deep dive on following slides*

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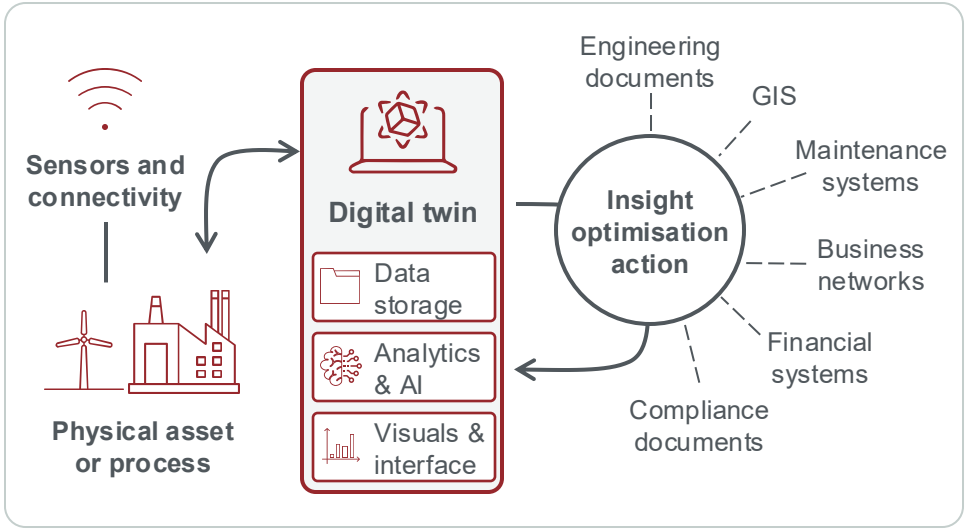
# Digital twins are real-time virtual simulations of physical systems that integrate physics-based and AI models to predict performance and optimise process operations



## What are digital twins?

*A digital twin is a **virtual replica** of a physical system (such as an asset, process or full factory) that combines **physics-based and AI models** alongside IoT connectivity with **live feed of data** from sensors, MES/SCADA and ERP systems to enable **real-time simulation***




Digital twins enable operators to test risk-free and **optimise performance before making real-world changes,** prioritise **maintenance schedules,** support **regulatory compliance,** and form digital control loops for **automated adjustments**

## Key benefits of digital twins

*Cost savings*

- **Reduce downtime and maintenance costs**
- **Optimise energy efficiency & operating costs**
- **De-risk capital projects**

*Output speed & quality*

- **Accelerate process design & scale-up**
- **Improve product quality & yield**

*Regulatory compliance*

- **Ensure regulatory compliance & ESG reporting**
- **Enhance workforce training**

Sources: OpenText, L.E.K. research and analysis

# Case study: Chemical product manufacturer deployed a digital twin to optimise its energy-intensive spray drying process, achieving double-digit efficiency gains and an ROI within 12 months



## Background

- Chemical product manufacturer had a **spray drying process that was very energy intensive and difficult to optimise**
- Spray drying is **traditionally run conservatively** to avoid off-spec product, but this leads to **significant water energy and lower throughput**, amounting to hundreds of thousands of dollars per dryer annually
- The producer needed a way to **improve dryer performance** without compromising product quality or requiring expensive new equipment


Digital twin dashboard of spray drying process

## Digital twin implementation

- The producer developed a **digital twin** to continuously **ingest sensor and control data** from the plant to **simulate the live drying operation**
- **AI algorithms predict** optimal process parameters (e.g. inlet temperature, airflow, feed rate) and **either suggest adjustments** to operators **or automatically implement** them in 'closed-loop' mode
- Operators interact with a **unified dashboard** showing live key performance indicators (e.g. moisture content, energy use)

## Impacts

- **Double-digit energy savings**
- **ROI within 12 months**
- **Throughput increased 1.5%**
- **35% reduced powder waste**

Source: L.E.K. research and analysis

# Growth in digital twin applications creates multiple potential investment pathways focused around specific technology areas and scalable business models



## How companies can invest behind the theme of digital twins


**Strong market outlook driven by AI adoption**

- The global digital twin market* is set to rise from **c.$21B (2025) to c.$150B (2030)**, with a **45% – 50% CAGR**
- Healthcare and manufacturing segments lead adoption, with **North America showing strongest growth** driven by tech innovation and investment

**Attractive digital twin capabilities combine scale, resilience and recurring value**

- Core digital twin enablers such as **simulation engines** and **vertical twin SaaS platforms** provide domain-specific value, resilient ARR and strong customer lock-in
- Connected **IoT devices and edge computing platforms** form the foundation for real-time analytics, scalable automation, and the seamless use of AI and extended reality technologies across process industries

**Attractive businesses show scalable, evidence-backed, cloud-native models**

- Solutions are cloud-native and modular through open APIs
- **Proprietary data models** or IP ownership, while discounting legacy, services-heavy or on-premise offerings that limit scalability
- **Evidence of OEE or CapEx savings**

**Ability to embed digital twin within processes is critical**

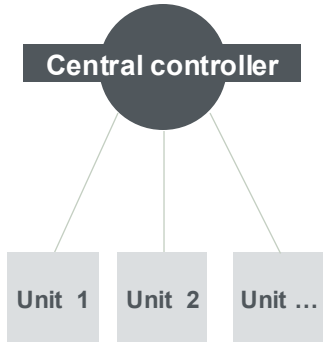
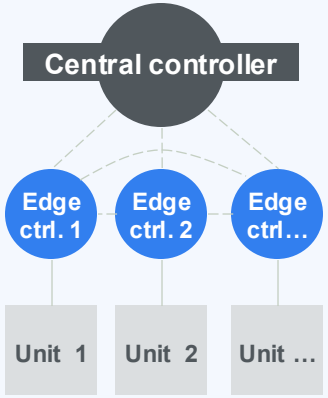
- Embed the digital twin engine within the automation platform to drive cross-sell, expand ARR and strengthen customer retention
- Integrate the twin as a **core layer across OT and IT** systems to enable rapid deployment and scalable performance improvement

Note: *Digital twin market is not limited to process industries
Sources: L.E.K. research & analysis, Markets and Markets, Colonnade Advisors

# Distributed automation pushes decision logic and control to edge nodes across plant infrastructure, enabling modular scaling and faster responses



## What is distributed automation (vs. traditional centralised automation)?

| | Model diagram | Description | Pros and cons |
|---|---|---|---|
| **Centralised automation** |  | • One central DCS controller monitors and executes actions for the whole line (centralised logic)<br>• Uses one vendor's stack, thus changes or add-ons usually require that vendor<br>• If the centre fails, most or all production may stop | + Established, simple architecture<br>- Single point of failure, where outages may ripple process-wide<br>- Slower to adapt, and small process changes require central testing<br>- Difficult to scale and modernise due to vendor lock-in |
| **Distributed automation** |  | • Multiple smart edge controllers act locally with autonomy, reporting actions to the central controller (distributed intelligence)<br>• Open, modular and scalable architecture<br>• Edge controllers stay coordinated in real-time via TSN/5G*<br>• Resilient by design, where faults are contained to a cell | + Faster decision making, with edge controllers closer and more optimised to their respective units<br>+ Scales modularly<br>+ Faults stay local within edge controllers<br>- Higher upfront design and integration costs |

Note: *Time-synchronised network in 5G
Source: L.E.K. research and analysis

# Case study: Electric grid provider achieved cost-effective reduction in outage duration and frequency through implementation of distributed automation



## Legacy automation setup

### Industry Context

- An electricity provider aimed for **rapid smart grid modernisation**
- Acceleration from an expected 10+ year plan to **less than three years**
- Current existing fibre-optic communication network was leveraged to deploy distributed automation across the grid cost-effectively

### Existing Technology Challenges

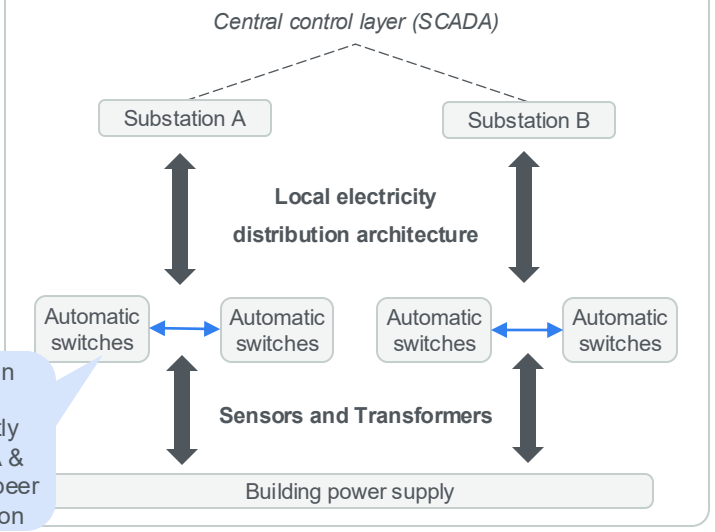
- **Poor customer experience:** Recurring power outages and long restoration times for domestic and commercial customers
- **High cost:** Manual control of switches increased crew overtime when restoring power
- **Weak resilience:** Severe weather caused prolonged outages across large customer segments

## Distributed automation solution

### Approach

- **Deployed 1,400 automatic switches** with the ability to control commands based on local conditions
- Automatic switches allowed **local control and communication at edge of the network**

**Smart Grid Distributed Automation Setup**




## Results

### Technical Performance

- **40%+** reduction in outage duration*
- **50%+** reduction in outage frequency*
- **40,000+** outages avoided in a single severe event

### Financial Impact

- **$27M** annual customer interruption costs savings
- **$23M** avoided costs in a major storm
- ROI **less than two years**

### Strategic Outcomes

- Foundation for distribution energy storage integration
- Strengthened relationship with department of energy and social benefit
- Improved resilience in severe weather

Note: *Over a 5-year period
Source: L.E.K. research and analysis; Industry Press, Energy Technologies Area Berkeley Lab

# The distributed automation market is growing as plants pursue modular & resilient operations, creating M&A opportunities in AI-enabled edge control



## How companies can invest behind the theme of distributed automation

**Strong market growth unlocked by AI adoption**

- The global distributed automation market* is set to rise from **c.$21.3B (2024) to c.$45B (2030)**, with a **c.13% CAGR**
- Driven by the need for industrial process manufacturers to **modernise legacy control systems** and the **new capabilities of AI** to quickly analyse the large data inputs

**Attractive distributed automation capabilities**

- Open architectures that **rehaul legacy PLC/DCS to cloud analytics,** enabling interoperability and faster deployment
- **AI utilisation,** integration of **IoT** and usage of **cloud infrastructure** to facilitate deployment of cutting-edge distributed automation

**Attractive businesses have AI know-how, full stack offering and proven track record**

- Offerings **across the distributed automation stack** including implementing controllers, connectivity software and data analysis
- **Proven ability to modernise legacy plants** and scale distributed architectures across multiple sectors
- Healthy project bidding discipline with above-peer service margins

**Ability to integrate automation platform into the wider OEM ecosystem**

- **Complement OEM and system integrator ecosystems**, such as partnerships with OEMs (e.g., valve manufacturers) to implement directly into manufacturing process

Note: Distributed automation market is not limited to process industries
Sources: L.E.K. research & analysis, Markets and Markets

# Common themes and strengths in leading companies across segments of the process industry automation space



## Which ones make money and why?

**Key megatrends**: Process industry automation directly addresses several key megatrends that underpin structural growth and is evolving from a pure efficiency tool to an enabler of intelligent, resource-indulgent automated industrial processes. Technologically, rapid improvements in AI and digitalization are pushing the boundaries of what is possible, while geopolitical tensions and labour scarcity are shaping an increased local investment need.

**Industry 4.0**: Convergence of operational technology and IT allows for AI-driven data analytics and dynamic adjustments across all stages of production, allowing for digital optimisation of physical production processes (e.g., through digital twins).

**Difficult to replicate technology**: Innovation leaders understand how to integrate AI and machine learning into their own processes and create intellectual property, which allows them to protect their market position.

**Data protection**: Software-enabled/connected products are now table stakes, as highly sought-after solutions must also provide robust cybersecurity protocols to ensure data protection.

**Global solutions/reshoring**: Customers increasingly demand comprehensive, globally deployed solutions offering customers shorter lead times, enhanced quality control and greater reliability. Complexity can be kept at a minimum through identical or similar highly automated setups that can be managed with remote input.

**Market growth**: While North America remains the largest market, the Asia-Pacific region's share is growing most rapidly with projected CAGRs of 7%. North America and Europe are expected to grow at CAGRs of 5% and 6-7%, respectively.

**c.$160B+**
Global process industry automation market by 2030F*

**7%+**
Global process industry automation market growth 2024A-2030F

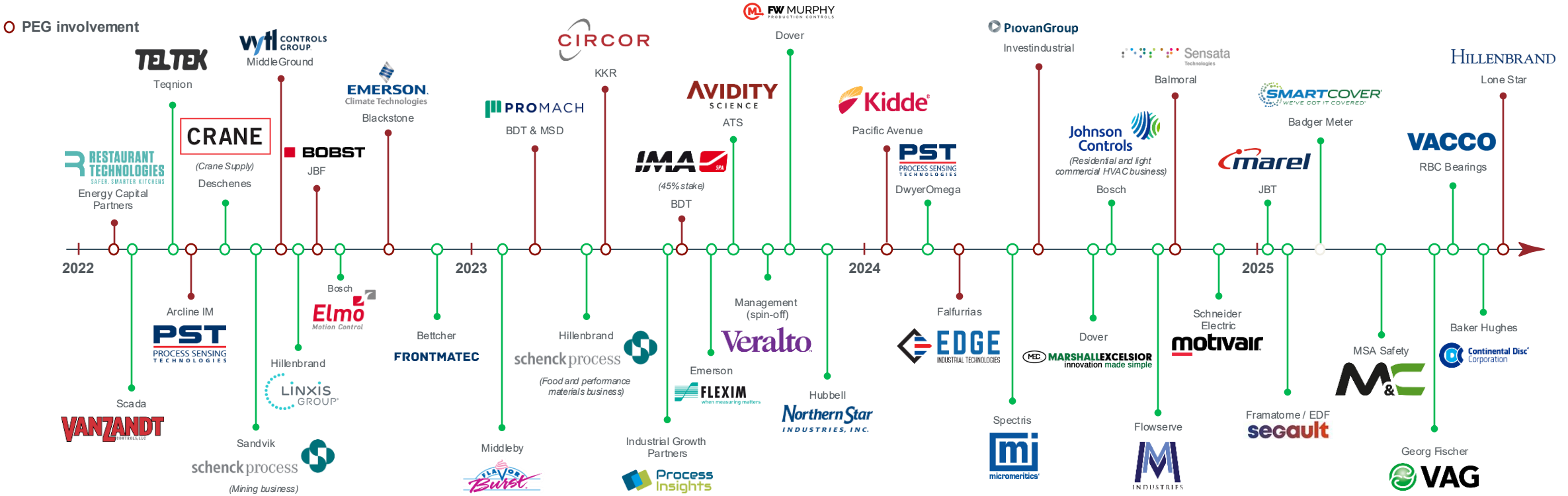
**c.50%**
Manufacturing companies ranking process industry automation as top priority for tech investments

**c.92%**
Organisations planning to increase AI investments

Note: *Forecast period 2025-2030
Sources: Deloitte, Gartner, Global Market Insights, Grand View Research, HW Intelligence, NMSC, PwC, World Economic Forum, L.E.K. Consulting

# Solid customer demand for process industry automation assets with resilient business models driving M&A activity across all sectors






**NOTABLE TRANSACTIONS**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Target | PST PROCESS SENSING TECHNOLOGIES | LINXIS GROUP | FLEXIM when measuring matters | CIRCOR | FW MURPHY PRODUCTION CONTROLS | Johnson Controls (Residential and light commercial HVAC business) | marel | |
| Buyer | ARCLINE INVESTMENT MANAGEMENT | HILLENBRAND | EMERSON | KKR | DOVER | BOSCH | JBT | |

Note: Logos are representative of M&A participants and not comprehensive
Sources: HW Intelligence, Mergermarket

# Increased M&A activity expected in process industry automation over the next 12-24 months



## M&A Trends

**M&A volume stabilises:** After normalising post-COVID to a resilient c.170-190 deals per year, deal flow is in line with 2024 and the year-end will determine whether activity will catch up with the higher activity in 2022-2023

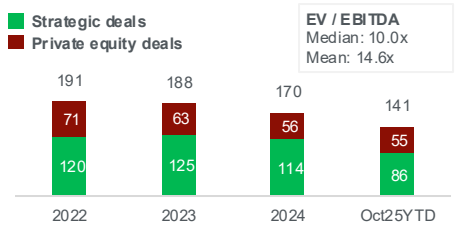
**Strategics hunt niche tech**: Corporate M&A is focused on targeted acquisitions to fill technology gaps, particularly in robotics, machine vision and advanced sensors combined with exceptional margin profiles

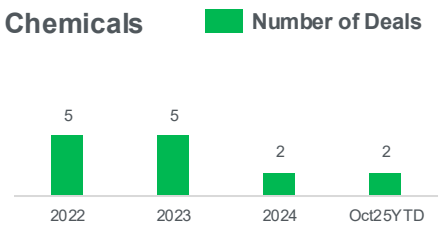
Besides strategic investors, **private equity is highly interested** in this space, with **around 40% of all transactions ending up with financial buyers this year**, surpassing previous years' deal share

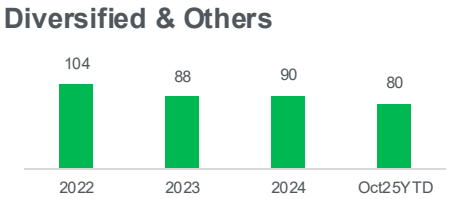
Focus shifts to "**intelligent automation**": Buyer priority has moved from basic digitisation to acquiring advanced capabilities in AI, predictive analytics, and IIoT

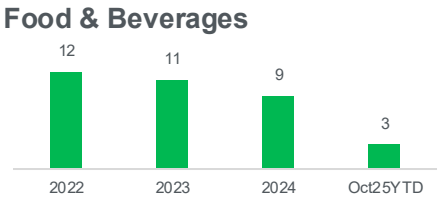
We expect an **increased level of M&A activity** in the process industry automation space over the next 12-24 months driven by **increased OEM investments** to complement corporate product portfolios and strengthen their positioning in key markets

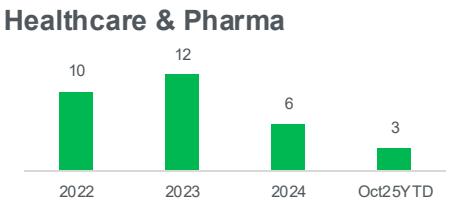
**Strong 2026 M&A outlook**: Activity is expected to remain high, driven by high investment interest in the sector, reshaping of corporate portfolios, and reshoring initiatives to counter geopolitical risk and build supply chain resilience, as well as accelerating industrial AI adoption

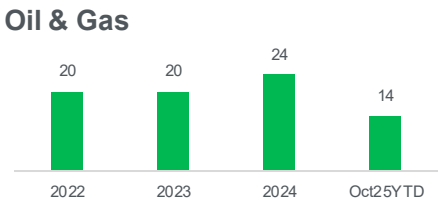


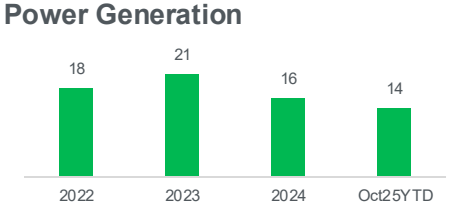



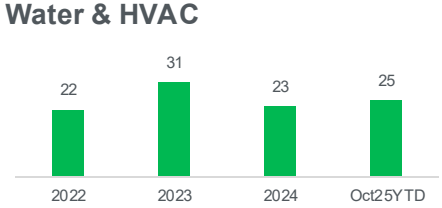




Notes: Announced deals until November 3, 2025, included; Diversified & Others includes transactions with targets focused on Metals & Mining sectors, as well as targets with diversified customer verticals
Sources: HW Intelligence, Mergermarket

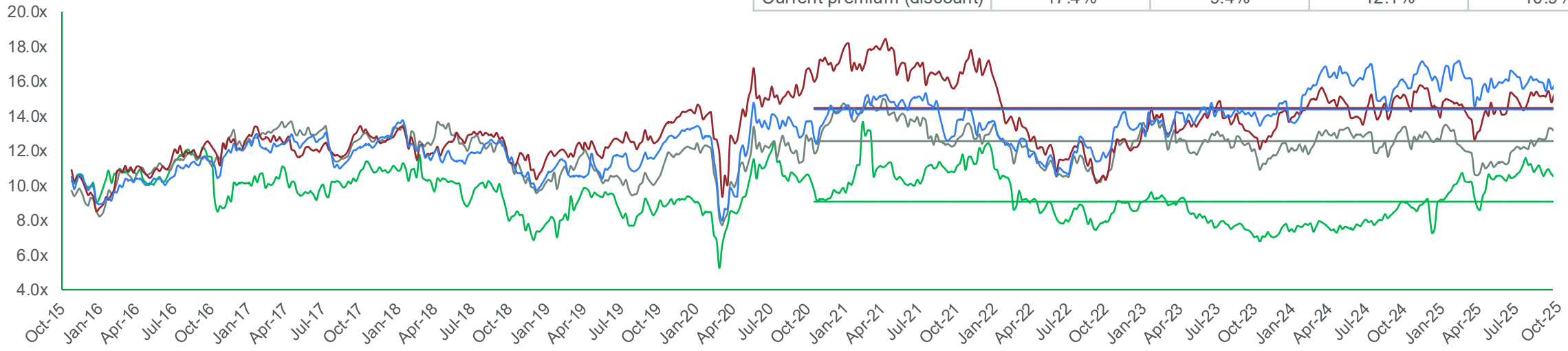
# Over the past decade, valuation multiples for process industry automation companies have expanded, though a valuation gap has emerged between distinct peer groups within the sector



## PROCESS INDUSTRY AUTOMATION COMPANIES - PUBLIC COMPARABLE MARKET PERFORMANCE BY KEY CUSTOMER END SEGMENT

NTM EBITDA

| | Food & Beverage | Industrials | Utilities | Diversified |
|---|---|---|---|---|
| Current median | 10.6x | 13.7x | 16.2x | 15.9x |
| 5-year median | 9.1x | 12.5x | 14.4x | 14.3x |
| Current premium (discount) | 17.4% | 9.4% | 12.1% | 10.9% |




**FOOD & BEVERAGE** — Current median, 5-year median

GEA, JBT Marel, KRONES, MIDDLEBY

**INDUSTRIALS** — Current median, 5-year median

Alfa Laval, Flowserve, Parker, Weir, Valmet, xylem

**UTILITIES** — Current median, 5-year median

Badger Meter, Franklin Electric, MUELLER, PENTAIR, SULZER, WATTS

**DIVERSIFIED** — Current median, 5-year median

Alberts, CIRCOR, CRANE, Curtiss-Wright, Donaldson, EMERSON, ESCO, IDEX, IMI, Indutrade, Ingersoll Rand, ITT, TRELLEBORG

Notes: Industrials include end markets such as Oil & Gas, Chemicals, Pulp & Paper, and Mining & Metals; Utilities include end markets such as Power Generation, Water & HVAC
Source: S&P Capital IQ as of November 3, 2025

# Appendix – Glossary of key terms

## Glossary

- **AI** – Artificial Intelligence
- **API** – Application Programming Interface
- **AR** – Augmented Reality
- **ARR** – Annual Recurring Revenue
- **CapEx** – Capital Expenditure
- **CAGR** – Compound Annual Growth Rate
- **CHIPS** – Creating Helpful Incentives to Produce Semiconductors (U.S. Law Act)
- **CPS** – Cyber-Physical Systems
- **CSRD** – Corporate Sustainability Reporting Directive
- **DCS** – Distributed Control System
- **EBITDA** – Earnings Before Interest, Taxes, Depreciation, and Amortisation
- **ERP** – Enterprise Resource Planning
- **ESG** – Environmental, Social, and Governance
- **ESRS** – European Sustainability Reporting Standards
- **HVAC** – Heating, Ventilation, and Air Conditioning
- **IEC** – International Electrotechnical Commission
- **IIoT** – Industrial Internet of Things
- **ISA** – International Society of Automation
- **LDAR** – Leak Detection and Repair
- **M&A** – Mergers and Acquisitions
- **MES** – Manufacturing Execution System
- **MRV** – Monitoring, Reporting, and Verification
- **OEE** – Overall Equipment Effectiveness
- **OEM** – Original Equipment Manufacturer
- **OT** – Operational Technology
- **PLC** – Return on Investment
- **SaaS** – Software as a Service
- **SCADA** – Supervisory Control and Data Acquisition
- **SOP** – Standard Operating Procedure
- **TSN** – Time-Sensitive Networking
- **VR** – Virtual Reality

# We span a global network of experts and look forward to connecting with you to share our experience in the industrial technology sector

## Harris Williams / GLOBAL INVESTMENT BANK

**75%** Revenue from repeat clients

**83%** Managing Directors promoted from within the firm

**30+** Year history

### Select Industrial Technology Transactions

- AVTRON POWER SOLUTIONS — a portfolio company of HIDDEN HARBOR CAPITAL PARTNERS — has been acquired by legrand
- DMCPOWER — a portfolio company of GOLDEN GATE CAPITAL — has been acquired by HUBBELL
- RENSA FILTRATION — a portfolio company of Audax Private Equity — has acquired iREMA — a portfolio company of PINOVA CAPITAL
- LOGIX ITS — has been acquired by TAPCO Safe travels. — a portfolio company of PEAK ROCK CAPITAL
- GREAT LAKES DATA RACKS & CABINETS — has been acquired by VERTIV.


***Mark Brune***
*Managing Director*
mbrune@harriswilliams.com

***Jenson Dunn***
*Managing Director*
jdunn@harriswilliams.com

***Eric Logue***
*Managing Director*
elogue@harriswilliams.com

***Florian Ripperger***
*Director*
fripperger@harriswilliams.com

***Chris Toussaint***
*Director*
ctoussaint@harriswilliams.com


## LEK™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***Florian Funke***
*Partner, London*
f.funke@lek.com

***Harpreet Singh***
*Partner, London*
h.singh@lek.com

***Charles Sealy***
*Principal, London*
c.sealy@lek.com


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