



# The Rise of Industrial DevOps: Q&A REPORT

A Discussion between Gerry Abbey, Director of Product Marketing at **Copia Automation**, and Sebastian Trolli, Research Manager, Global Head of Industrial Automation & Software at **Frost & Sullivan**.



# Introduction

The industrial sector is going through an exciting transformation, driven by the integration of IT and OT, as well as the increasing demand to maximize efficiency while facing workforce challenges. In this context, Industrial DevOps has emerged as a critical approach. It promises to speed up innovation, boost operational efficiency, and strengthen security.

This report captures a lively conversation between [Gerry Abbey](#), Director of Product Marketing at **Copia Automation**—a leading provider of Industrial DevOps solutions—and [Sebastian Trolli](#), Research Manager and Global Head of Industrial Automation & Software at **Frost & Sullivan**—a prestigious global research and consulting firm. Together, they explore the current landscape and future prospects of Industrial DevOps, drawing insights from Copia's 1st Annual State of Industrial DevOps Report and Frost & Sullivan's comprehensive research in the industrial automation and software sector.



# Defining the Evolution of Industrial DevOps

**GERRY ABBEY:** Sebastian, we're seeing a lot of buzz around Industrial DevOps. Could you elaborate on how it's evolving beyond a simple technological framework and becoming a fundamental shift in industrial operations? What are the key drivers behind this evolution?

**SEBASTIAN TROLLI:** You're absolutely right, Gerry. Industrial DevOps is far more than a trend; it is a fundamental change in how industrial organizations operate and innovate. In today's hyper-competitive global market, industrial digital transformation is no longer a choice—it's an imperative for survival and growth. The real question isn't whether companies will eventually embrace DevOps principles; it's whether they'll remain competitive and relevant if they don't. While many industrial sectors still rely on outdated development and operational models, a "silent" revolution—Industrial DevOps—is gaining momentum. Those who fail to recognize and adopt this shift risk being left behind.

DevOps began in the IT world but has evolved into something much broader, blending development, operations, and business strategy. It accelerates the software delivery lifecycle—from concept to maintenance—without sacrificing quality or security.

**GERRY ABBEY:** The terms "DevOps" and "Agile" are often used interchangeably. Can you clarify the relationship between them and highlight the key differences?

**SEBASTIAN TROLLI:** That's a common point of confusion. While DevOps and Agile share the common goal of accelerating software development and delivery, they operate at different layers of the software delivery lifecycle. Agile is a methodology that focuses on iterative and incremental development. It breaks development cycles into short sprints, allowing teams to adapt quickly to changing requirements or market demands. Agile emphasizes flexibility and responsiveness, primarily focusing on the coding and development process itself.



DevOps, on the other hand, is a broader philosophy that extends Agile principles beyond the development phase, bridging the traditional gap between developers and IT operations. While Agile focuses on what needs to be built, DevOps ensures how it is delivered efficiently to production environments.

**GERRY ABBEY:** This brings us to the core of our discussion: Industrial DevOps. How does it differ from traditional DevOps, and what specific challenges and opportunities does it address within the industrial context?

**SEBASTIAN TROLLI:** Industrial DevOps is none other than the application and evolution of traditional DevOps practices—including automation, CI/CD, continuous feedback, configuration management, orchestration, monitoring, and even microservices and infrastructure-as-code—within industrial sectors. It's a reimaged approach tailored to the unique demands of complex manufacturing systems, cyber-physical integration, and industrial-grade reliability. Industrial DevOps streamlines the development and deployment of industrial software, ensuring real-time collaboration between IT and OT teams. This collaboration facilitates faster iterations in manufacturing environments, enabling more agile, responsive, and efficient production cycles.

In sectors like manufacturing, energy, oil & gas, and logistics, the stakes are significantly higher than in traditional IT. It's not just about software glitches or website downtime anymore; when something breaks in an industrial setting, it can shut down an entire production line, damage expensive equipment, or, in the worst-case scenario, put human lives at risk. Companies that aren't embracing Industrial DevOps will soon find themselves struggling with obsolete equipment, slow production times, and escalating operational costs. This is why the cultural shift alongside the technological implementation is so important.



# 02 Research Insights and Buyer's Journey: Understanding the Drivers and Restraints

**GERRY ABBEY:** Sebastian, moving into the practical aspects, what qualitative insights from your research illuminate the value and impact of Industrial DevOps? What are the primary motivations and concerns you're observing among buyers exploring these solutions, and how do you see vendors like Copia effectively addressing these needs and building trust?

**SEBASTIAN TROLLI:** Our research reveals several compelling drivers pushing industrial buyers toward Industrial DevOps:

- **Reducing Downtime:** Downtime is extremely costly, as highlighted in [Copia's report](#), with losses reaching millions per hour for large enterprises. Industrial DevOps minimizes this through tools like Copia's Git-based source control, code-device validation, and automated backups (DeviceLink), enabling rapid recovery and business continuity. Reverting to previous code versions is also crucial for meeting emerging regulatory guidelines.
- **Cybersecurity:** Protecting vulnerable industrial networks is another major concern. Copia's report shows a significant link between unplanned downtime and cybersecurity breaches. Industrial DevOps offers enhanced security through governance, visibility, and secure coding practices. Copia's unified repository, cloud-based management, and secure remote access address compliance and provide essential backups for cyberattack recovery.
- **Innovation and Agility:** Buyers view Industrial DevOps as a driver of faster time-to-market. Rapid iteration and deployment are essential in fast-paced industries. Copia's version control, automated backups, multi-vendor support, and cloud platform enable quick pivots, minimize errors, and facilitate real-time collaboration.



# 02

## Research Insights and Buyer's Journey: Understanding the Drivers and Restraints (CONTINUED)

- **Workforce Challenges:** The shortage of skilled labor is a key challenge. Industrial DevOps automates routine tasks and improves team collaboration. Copia simplifies complex tasks like version control, testing, and debugging, reducing the learning curve and reliance on highly specialized skills.

However, there are also significant restraints:

- **Cultural and Organizational Changes:** Implementing Industrial DevOps requires significant cultural and organizational shifts. Overcoming resistance to change, competing priorities, lack of buy-in from decision-makers, and budget constraints are common hurdles. This often includes overcoming resistance to changing the “status quo,” particularly in organizations with long-established processes.
- **Complexity of Multi-Vendor Environments:** Managing diverse technologies from multiple vendors can be complex. Buyers worry about the scalability and integration of Industrial DevOps solutions with their existing infrastructure. Industrial DevOps addresses this by providing a single platform that bridges IT and OT teams and supports multiple vendors, simplifying integration and scaling.
- **Balancing Cost with Strategic Value:** Justifying the initial investment in Industrial DevOps can be challenging, especially when the ROI isn't immediately apparent. Industrial DevOps emphasizes long-term cost savings through reduced downtime, improved efficiency, and disaster recovery capabilities.



# 03 | Industrial DevOps Market Pulse and Top Growth Opportunities

**GERRY ABBEY:** Your research positions Industrial DevOps as a significant growth opportunity. Can you highlight some of the most promising technological areas where it's poised to make a substantial impact?

**SEBASTIAN TROLLI:** Industrial DevOps is already impacting several key technological areas, with its influence set to accelerate:

- **AI-Driven DevOps:** AI in DevOps automates issue detection and code optimization. AI-driven Industrial DevOps tools will grow short-term, becoming commonplace in five years.
- **Cloud-Native PLC and OT Programming Environments:** Industrial DevOps eases the transition to cloud-based OT applications, enabling faster iteration and deployment.
- **Virtual PLCs (vPLCs):** The move toward software-centric automation is driving the virtualization of PLCs. Industrial DevOps, with its CI/CD pipelines and automated testing, streamlines vPLC deployment and maintenance. End-users should invest in vendor-agnostic Industrial DevOps tools that facilitate seamless PLC management, including version control, automated backups, and secure remote access.
- **GitOps Workflows:** These provide a powerful mechanism for managing PLC code and OT systems, improving traceability and reducing human error.
- **Cybersecurity for Continuous Security Monitoring:** Integrating DevSecOps practices ensures that security is embedded in the development and operational processes. Demand for industrial DevSecOps platforms will surge in 1-2 years. DevSecOps will be standard in five.



# 03

## Industrial DevOps Market Pulse and Top Growth Opportunities (CONTINUED)

- **Edge Computing and DevOps:** Edge computing enables real-time industrial decisions. Integrating DevOps at the edge allows direct updates to devices. DevOps platforms with edge support will increase short term. In five years, industrial systems will fully utilize edge-DevOps.
- **Low-Code/No-Code for Industry:** Low-code/no-code is transforming software development, including in industry. The developer shortage is a driver. Low-code/no-code tools for Industrial DevOps will increase in 1-2 years. In five years, more of the industrial workforce will create software, democratizing DevOps.





# 04 Future Outlook: Transforming Industries and Driving Innovation

**GERRY ABBEY:** Given this trajectory, what's your long-term vision for the Industrial DevOps market, and how do you see it transforming industries and driving innovation?

**SEBASTIAN TROLLI:** The future of industrial operations is integrated, with development, operations, and maintenance merging into a continuous innovation loop. Legacy systems will shift to modular, scalable architectures, often cloud-based and containerized, driven by Industrial DevOps. This enables faster innovation and continuous updates.

Open collaboration and interconnected ecosystems will flourish, with OEMs, vendors, and users co-creating solutions. Decentralized development and edge computing will empower local teams, accelerating innovation. Smart factories, fully automated and self-regulating, will emerge, utilizing DevOps for rapid updates and continuous improvement. Cybersecurity will be paramount.

Industrial DevOps will be a key differentiator, with demand for agile, scalable platforms driving a shift to end-to-end service ecosystems and fostering industry partnerships.



# 05

## Market Pulse: Competitive Landscape

**GERRY ABBEY:** You've mentioned that the competitive landscape for Industrial DevOps is still evolving. How do you see the dynamics shifting in the near future?

**SEBASTIAN TROLLI:** The competitive landscape is indeed nascent and evolving, with each vendor approaching Industrial DevOps from a unique perspective. We anticipate an increase in competitors in the near future, followed by consolidation through strategic partnerships and acquisitions. Copia, with its unified platform, Git-based source control, and seamless integration with PLC programming environments, is very well-positioned in this market. Copia's focus on fast disaster recovery, multi-device version matching, and cloud-based management addresses key customer needs. Other companies are also emerging, focusing on different aspects like simplified PLC code management, AI-powered code translation, and cloud-based, no-code IIoT platforms. This diversity of approaches contributes to a dynamic and rapidly evolving market.



**GERRY ABBEY:** How is Copia shaping the Industrial DevOps landscape?

**SEBASTIAN TROLLI:** Copia is setting the standard for applying DevOps to industrial automation. Its platform integrates with various PLC programming environments, providing actionable insights through continuous code-device validation, and driving standardized operations. Copia's focus on preventing downtime, expediting disaster recovery, and optimizing operations aligns with Industry 4.0 principles. Its leadership in cloud-based management sets a benchmark for other vendors.

**GERRY ABBEY:** What makes Copia a pioneer in Industrial DevOps?

**SEBASTIAN TROLLI:** Copia's pioneering status stems from several factors:

- **First-Mover Advantage:** Copia was the first company to introduce the concept of Industrial DevOps and a dedicated solutions portfolio.
- **Market Research:** Copia published the first comprehensive research on the State of the Industrial DevOps Market.
- **Successful Use Case (Amazon):** Copia partnered with Amazon to implement source control for over 500 PLCs, resulting in an anticipated 80% reduction in downtime and a 25% improvement in issue resolution.



- **Innovative Approach:** Copia uses Git-based source control for multi-vendor device management, enhancing visibility and streamlining change management. Its cloud platform enables preemptive crisis management.
- **Focus on Collaboration:** Copia's platform fosters collaboration across teams, enabling faster decision-making and issue resolution.

Copia effectively brought agile, automated development practices from IT to industrial OT, addressing the crucial need for real-time control, collaboration, and resilience in increasingly interconnected industrial equipment. Copia's pioneering approach is built on innovative use of cloud technology, automation, and collaborative methodologies:

- **Centralized Control via Git-Based Source Control:** Copia facilitates multi-vendor device management, centralizing control across diverse automation environments. This enhances visibility, streamlines change management, and prevents performance bottlenecks. The cloud-based platform also provides preemptive crisis management, alerting teams to potential issues before they impact operations.
- **Agility and Resilience through Centralized Management:** Recognizing the limitations of traditional reactive backup strategies, Copia applied DevOps principles to OT, enabling CI/CD for control code. This revolutionizes backup and recovery in complex environments, minimizing downtime and preventing critical data loss.
- **Focus on Collaborative Ecosystems:** Copia's platform encourages collaboration across multiple teams and stakeholders, fostering agility and enabling faster decision-making and issue resolution.



# Conclusion

This discussion between Gerry Abbey of [Copia Automation](#) and Sebastian Trolli of [Frost & Sullivan](#) highlights the transformative potential of Industrial DevOps. Moving beyond a mere trend, Industrial DevOps represents a critical shift in industrial operations, emphasizing agility, automation, and collaboration to address the complex challenges of modern manufacturing. Key drivers for adoption include reducing costly downtime, enhancing cybersecurity, fostering innovation, and mitigating workforce challenges.

Copia Automation has emerged as a pioneer in this space, offering a unified platform that leverages Git-based source control, cloud technology, and collaborative workflows to streamline industrial automation processes. By focusing on centralized management, fast recovery, and cross-team collaboration, Copia empowers industrial organizations to achieve greater resilience, accelerate innovation, and uncover the full potential of Industry 4.0. The future of Industrial DevOps points towards interconnected ecosystems, smart factories, and AI-driven automation, with Copia playing a key role in shaping this evolving landscape.





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Copia Automation provides unparalleled visibility and control of industrial automation code across multi-vendor devices for continuous quality control, streamlined production, and preemptive crisis management.

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