EBOOK

HOW TECHNOLOGY COMPANIES ARE BUILDING SECURE, *AI-READY SOFTWARE* AT SCALE

The AI inflection point for technology companies

The technology industry has always moved quickly. But AI represents more than just another cycle of innovation — it's a structural shift in how software is built, delivered, and monetized.

For technology companies, the AI mandate is twofold. They must embed AI into products to remain competitive and satisfy rising user expectations. At the same time, they must use AI internally to increase developer productivity, streamline operations, and accelerate time to market. All of this must happen without compromising security, reliability, or user trust.

Fragmented tools and inconsistent environments cannot support this level of change. Scaling AI demands a unified software delivery foundation — one that standardizes how applications are built and run, embeds security earlier in the lifecycle, and enables teams to move faster without sacrificing control. This foundation is not only critical to reliable AI execution but also modernization, software delivery speed, and measurable business value.

With 20 million monthly active users and over 20 billion image pulls, Docker is where modern software gets built. Docker drives developer productivity, secures the software supply chain, and powers AI-driven development at enterprise scale.

AI ambitions aren't translating to impact

Adopting AI alone isn't enough — technology companies must use it to drive business value.

That's proven difficult, however. According to a study by Boston Consulting Group (BCG), 74% of organizations struggle to achieve and scale value with AI, and just 4% say they consistently generate significant impact. The study cites fragmented data and engineering foundations as the most common cause of these struggles.[1]

Many technology organizations are leveraging AI to drive developer productivity. According to Gartner, using AI to automate code generation, testing, and refactoring is becoming mainstream — but value is often limited by inconsistent environments and data pipelines.[2]

As technology companies look to scale AI adoption beyond experiments and into production, they must also deal with new risks. AI systems expand attack surfaces, create new vectors for data exposure, and increase regulatory and reputational exposure. A Stanford report highlights a 56% increase in AI-related incidents in 2024, including data breaches and algorithmic bias events.

Expectations on technology leaders have reached a tipping point. Now, more than ever, boards and executive teams want clear answers to practical questions:

- How quickly can we deliver new capabilities without increasing risk?
- How do we strengthen security earlier in the lifecycle?
- How do we modernize incrementally without disrupting core systems?
- How do we prove that these investments deliver measurable business value?

Yet most technology companies remain constrained by fragmented environments and inconsistent controls, making it difficult to answer these questions with confidence.

How modern software delivery practices are changing outcomes

Against this backdrop, Docker partnered with theCUBE Research to quantify how modern software delivery practices are changing outcomes across large enterprises. The independent study surveyed 393 IT and application development leaders to measure the impact of Docker's standardized development environments, secure software supply chain controls, and DevOps enablement on AI delivery, security posture, productivity, modernization, and ROI.[3]

This industry guide applies those findings through a technology industry lens. It focuses on how tech and IT leaders are using Docker to achieve AI success at scale — strengthening security, accelerating modernization, improving developer productivity, and delivering measurable business value.

"Docker is a core service for us — it's critical for building enterprise-grade systems that last."

Mona Fawzy, CTO and Founder, JaneTech

Continue reading to explore how technology organizations are building secure, AI-ready software delivery foundations with Docker. You'll learn how these foundations can help reduce friction for development teams, strengthen governance and supply chain security, accelerate modernization, and drive outcomes leadership teams can stand behind.

Why the current models can't keep up

For many technology organizations, the gap between business ambition and delivery capability is widening. AI-first product strategies, cloud-native architectures, and continuous modernization efforts are accelerating — while the engineering foundations beneath them remain fragmented.

Many tech firms have multiple AI pilots running in parallel. Without consistent development environments, standardized packaging, and reliable data pipelines, those projects struggle to reach production. Tool sprawl compounds the problem, with one study revealing that employees lose more than 44 hours each year to tool fatigue.[4] Every additional platform, integration, and workflow introduces new dependencies, potential failure points, and cognitive overhead.

The consequences are practical and expensive. Projects stall while environments are rebuilt. Failures surface late in the lifecycle. Confidence drops as teams struggle to reproduce results across development, testing, and production. What begins as an innovation often degrades into a coordination problem.

Modernization efforts face similar friction. Few technology companies can afford to replace their core systems wholesale. Instead, modern architectures must coexist with legacy platforms during long transition periods. Without consistent packaging, predictable environments, and reliable deployment paths, modernization becomes risky, costly, and slow.

At the same time, industry surveys consistently show that AI investments are tied directly to growth targets, not just cost savings.[5] Executives expect measurable ROI, but current delivery models were not designed for AI-first workloads, hybrid environments, or today's security and privacy requirements. Tech vendors that can't deliver differentiating AI features quickly risk churn and revenue loss.

"We've achieved over $1 million in annual savings (with Docker). The productivity gains andreduced infrastructure overhead alone justify the investment."

Ian Brown, Engineering Manager, JVM Ecosystem, Netflix

Technology enterprises are no longer just building applications — they're architecting intelligent, autonomous systems that must be secure, compliant, and instantly scalable. That shift raises the bar for consistency and control.

Standardized development environments, secure software supply chain controls, and alignment between development and CI/CD are no longer optimization exercises. They are now prerequisites for scaling AI innovations, modernizing safely, and delivering reliable business outcomes.

Docker helps technology firms deliver software faster, more securely, and with greater consistency across every environment. By standardizing how teams build, test, and package applications, and embedding security earlier in the lifecycle, Docker reduces risk and accelerates the move from AI experimentation to production at scale.

What the data reveals: key findings from theCUBE Research

Independent findings from theCUBE Research show that organizations adopting Docker as a standardized software delivery foundation achieve materially better outcomes across AI delivery, security posture, productivity, modernization, and ROI. Docker delivers this through:

- **Standardized development environments**
- **Secure, trusted content**
- **Reliable access controls**
- **AI-accelerated development**
- **Continuous supply chain insights**

The following insights highlight the outcomes that matter most in today's regulated, high-risk environments.

Faster starts, scalable results

For technology organizations, speed and reliability are business imperatives. Today's digital and AI systems underpin critical technology services, including global cloud infrastructure, large-scale data processing, identity and access management, real-time personalization engines, content moderation, and customer experience platforms. As these systems grow more complex, delivering them quickly and securely has become critical.

Research from theCUBE shows that Docker reduces one of the primary barriers to AI execution: inconsistent development environments. AI agents don't just need models; they need infrastructure. To operate reliably in production, agents must spin up environments, call tools, and run code in ways that are secure by default. Docker provides the security and reliability that agentic workflows require at enterprise scale.

% of surveyed orgs	Outcome
41%	51–75% faster AI setup time
44%	26–50% fewer project failures or delays
53%	Significantly improved AI testing and validation

These outcomes are made possible with Docker's AI capabilities:

- Run and test AI models locally in consistent, isolated environments that reduce setup time, cut cloud costs, and accelerate iteration across development workflows.
- Search, deploy, and connect to hundreds of verified MCP servers, with Docker handling setup, authentication, and security so teams can focus on building agents, not managing them.
- Build, run, and share AI agents using a simple YAML configuration, declaring models, tools, and workflows without writing code and packaging agents to run anywhere like Docker images.

What the data reveals: key findings from theCUBE Research

Security, compliance, and vulnerability reduction

Technology organizations can't efficiently accelerate AI or modern application delivery without strengthening the software supply chain, reducing risk at the source, and ensuring consistent compliance.

Docker strengthens security by embedding protection earlier in the software lifecycle, helping to reduce vulnerabilities before applications reach production. Organizations using Docker report substantial declines in security vulnerabilities, major improvements in security posture, and consistent compliance:

% of surveyed orgs	Outcome
43%	26–50% vulnerability reduction
17%	50%+ vulnerability reduction
53%	Significant improvement in security posture
81%	Achievement of compliance goals

Reducing vulnerabilities at the source improves audit readiness and aligns with regulatory expectations for software supply chain and third-party risk management. Docker delivers this through multiple layers of protection:

- Minimal, signed, and continuously verified base images reduce CVE exposure before code ever reaches production.
- Continuous vulnerability analysis and policy evaluation across containerized services gives security and engineering teams ongoing visibility into risk across the development lifecycle.
- Policies enforced directly on developer workstations isolate environments and reduce endpoint risk in compliance-sensitive environments.
- Centralized authentication and restricted credential exposure prevent unauthorized tool access across agent development workflows.

What the data reveals: key findings from theCUBE Research

Developer productivity and DevOps maturity

In AI-mediated development environments, developer productivity directly impacts business continuity, release velocity, and competitive differentiation. theCUBE Research shows that improving development workflows reduces operational risk, strengthens collaboration, and increases release reliability.

Docker improves developer productivity across key workflows:

- Accelerates local development workflows, enabling fast, consistent environments that drive productivity and reduce setup friction across teams, so they spend less time configuring and more time building.
- Reduces rework and release failures by standardizing workflows from development to production, eliminating the configuration drift that creates risk in complex, high-velocity technology delivery environments.
- Streamlines onboarding and collaboration across engineering teams, using shared container standards and reusable dev environments, helping technology organizations scale development capacity without sacrificing consistency or control.

% of surveyed orgs	Outcome
73%	Significant workflow efficiency gains
64%	26–50% greater productivity
65%	Significant improvements to development and CI/CD alignment
68%	Improved cross-team collaboration
39%	Full DevOps transformation

As AI copilots generate code, tests, and configurations, consistency in the inner loop becomes even more critical. Docker standardizes local development environments, ensuring AI-assisted workflows operate in secure, reproducible containers that reduce configuration drift and release failures.

These benefits are reflected in key findings from theCUBE Research:

More consistent workflows reduce rework, errors, and release fragility while preserving governance. The result is faster iteration, fewer environmental issues, smoother collaboration, and a significant boost in developer productivity and organizational DevOps capabilities — all of which make Docker a foundational accelerator for modern software delivery.

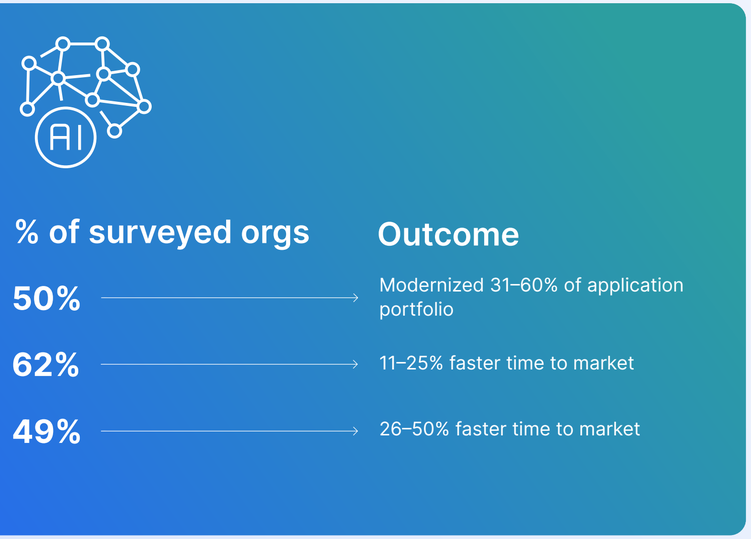
What the data reveals: key findings from theCUBE Research

Application modernization and time to market

Modernization is a top priority in the technology sector, but few organizations can afford to rip and replace critical systems. Docker enables incremental modernization by bridging legacy platforms and modern cloud-native architectures, allowing teams to deliver new capabilities without destabilizing existing systems.

Docker supports modernization and faster time to market across the application lifecycle:

- Containerizes legacy applications without replatforming, allowing teams to modernize from monolithic applications to cloud-native microservices without disrupting ongoing operations.
- Introduces new features and services faster, using consistent packaging and deployment workflows that reduce delivery friction in environments where release reliability drives competitive differentiation.
- Supports hybrid environments and gradual migration, enabling teams to bridge legacy infrastructure with cloud-native architectures at a pace that manages operational risk.
- Scales cloud-native and AI-driven applications while preserving control, helping technology organizations modernize securely within existing governance frameworks.



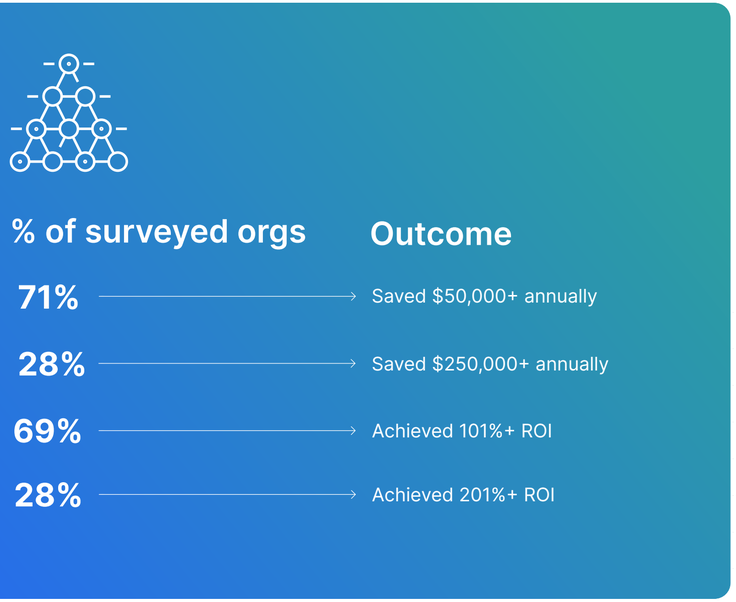
theCUBE Research shows the impact of these modernization strategies:

theCUBE Research findings show that Docker enables incremental modernization and materially accelerates delivery timelines. These outcomes allow technology organizations to introduce digital- and AI-driven services while preserving stability.

Business value and ROI

The research makes clear that these gains translate into measurable financial outcomes. Respondents consistently reported meaningful cost savings and strong ROI.

Docker's business value extends beyond development efficiency. By reducing vulnerabilities before production, accelerating modernization timelines, and enabling teams to deliver AI capabilities faster, Docker delivers measurable financial impact that CFOs and CISOs can quantify:



% of surveyed orgs	Outcome
71%	Saved $50,000+ annually
28%	Saved $250,000+ annually
69%	Achieved 101%+ ROI
28%	Achieved 201%+ ROI

Docker delivers substantial financial impact by reducing operational costs, accelerating modernization, and increasing development efficiency. Organizations consistently report meaningful annual savings and high ROI — often far exceeding initial investment — confirming Docker's ability to translate technical acceleration into bottom-line business value.

"When you use Docker, you reduce redundancy and cost...not just in terms of the processing and storage usage itself, but also because of the ease of usability... which reduces the amount of other resources and time you're investing."

Sanchita Agarwal, Senior Software Engineer, Cloudflare

Next steps for foundational AI-ready software delivery

Technology companies are entering a new phase of software delivery. AI-powered features, intelligent agents, and autonomous systems are quickly evolving from experimental add-ons to core product capabilities. At the same time, competitive pressure, rising security threats, and board-level expectations for ROI are intensifying.

The research findings point to a clear conclusion: Organizations that adopt Docker as a foundational software delivery platform scale AI more reliably, reduce vulnerabilities, modernize faster, and consistently drive measurable business value.

Progress does not require ripping out existing systems or slowing innovation to improve governance. It means strengthening the foundation that underpins how software is built, secured, and delivered.

Docker's practical blueprint helps technology companies achieve AI success at scale through five essential steps:

1

Establish consistent development environments across teams to reduce variability, improve handoffs, and standardize how applications are built and tested.

2

Implement centralized controls for identity, policy, and access to enforce organization-wide security standards across development and production.

3

Integrate container-based delivery into existing infrastructure to enable incremental modernization without disrupting core systems.

4

Operationalize AI development workflows by providing secure, governed access to third-party services and ensuring development environments are aligned across teams.

5

Align software delivery with enterprise CI/CD practices to reduce time to market, increase release reliability, and support continuous improvement at scale.

This proven path enables technology companies to deliver AI-enabled products and services that are secure, scalable, and commercially differentiated. And it's how Docker can help your organization accelerate innovation without increasing risk — translating technical capability into sustained competitive advantage.

To explore the full findings behind this guide, read the complete theCUBE Research x Docker.

To learn how organizations are applying these principles in practice, engage with Docker to see how secure, AI-ready software delivery can be built at enterprise scale.

1. "AI Adoption in 2024: 74% of Companies Struggle to Achieve and Scale Value," BCG press release, October 24, 2024.
2. "Gartner 2024 Hype Cycle for Emerging Technologies Highlights Developer Productivity, Total Experience, AI and Security," Gartner press release, August 2024.
3. "Docker's Impact on Agentic AI, Software Supply Chain Security, Developer Productivity, ROI," theCUBE Research, October 2025.
4. Tilo, D., "Tool Fatigue: Why Digital Platforms Aren't Delivering," Human Resources Director (HRD), November 2025.
5. Dagley, R., "AI Trends and Predictions 2024 from Industry Insiders," ITPro Today, January 2024.

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