



From plant floor to boardroom

Why manufacturers need a trusted
layer of knowledge to realize the promise
of Industry 4.0

Executive summary

The limiting factor, however, is no longer data collection – it's context.

Manufacturing leaders today face a wide range of pressures, from tariff shocks and reshoring initiatives to supply chain volatility and persistent labor shortages. As a result, only 55% report a positive outlook for their business.¹ Industry 4.0 offers a promising path forward, enabling smart manufacturing operations through cloud computing, IoT, and generative AI.

Most organizations struggle because the information required to make decisions is fragmented across OT and IT systems, email inboxes, and collaboration tools. And as more firms invest in AI to accelerate digital transformation, many find that ROI is constrained by the quality and accessibility of their knowledge base. In fact, nearly 70% of survey respondents said data quality, contextualization, and validation are obstacles to AI adoption.²

This whitepaper explores how Glean helps close that gap. As a Work AI platform, Glean unifies enterprise knowledge with permission-aware search, an intelligent assistant, and agentic workflows so every team – from the production line to the boardroom – can act confidently and at speed.

We examine five phases of the manufacturing lifecycle where generative AI can deliver meaningful impact: product design, supply chain, production, customer experience, and scenario planning. In each, we show how Glean enables cross-functional teams to work with clarity and confidence:

This includes:

- **Design and engineering teams** conducting innovative research, managing NPD/NPI initiatives, and collaborating across global teams
- **Supply chain leaders** sourcing critical inputs, evaluating carrier performance, and fulfilling customer orders
- **Plant managers** leading frontline workers, deploying automation technologies, and maintaining quality standards
- **Customer support agents** providing real-time updates, resolving complex incidents, and coordinating replacement and repair support
- **IBP teams** developing long-term operational plans, tracking performance and financial KPIs, and running scenario planning exercises

Powered by an enterprise knowledge graph, Glean transforms fragmented data into shared context. Business-critical information becomes indexed, searchable, and actionable in a single platform – helping manufacturers accelerate product innovation, preserve institutional knowledge, and drive stronger cross-functional collaboration.

¹ [NAM, 2025 Second Quarter Manufacturers' Outlook Survey](#)

² [Manufacturing Leadership Council, Survey: Manufacturers See AI as a "Game-Changer" as They Ramp Up Investments](#)

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Why shared enterprise knowledge is crucial for Industry 4.0



AI has already proven its value in industrial operations, with early adopters achieving up to 14% savings through AI.”⁴

Manufacturers have long been at the forefront of innovation – adopting advanced technologies, pioneering new techniques, and creating entire product categories. Driven by Industry 4.0 initiatives, 75% of advanced manufacturers consider adopting emerging technologies a top priority for their engineering and R&D teams.³

At its core, Industry 4.0 envisions a fully connected, data-driven production system that links machines, processes, products, and people. A digital thread can connect critical processes, while digital twins can model and simulate entire operations. Together, these approaches make it possible to optimize decisions in real time across the production lifecycle.

Yet despite strong investment, innovation and production often slow because teams still operate with partial context. Critical information remains scattered across disconnected systems and tools. Customers wait on hold while agents escalate tickets. New workers struggle to find guides or SOPs. Engineers sift through multiple tools to prepare for a new product introduction.

Glean supports Industry 4.0 transformation by unifying enterprise knowledge and making it accessible within the tools manufacturing teams already use.

With Glean, manufacturers can:

- **Unify** SOPs, work instructions, training materials, QMS records, service manuals, shift handover notes, and engineering artifacts into a single, AI-powered knowledge hub that’s always current and permission-aware.
- **Provide precise, verified answers** with links back to authoritative sources, reducing shadow processes, outdated documents, and rework.
- **Operationalize agentic workflows** to automate checks, validations, escalations, and proactive notifications (such as upcoming equipment service requests), shortening loop times across shifts and sites.
- **Connect OT and IT data** through custom connectors that align corporate and frontline teams on shared context, accelerating replication from pilot to plant.
- **Accelerate onboarding and training** by up to 50% with powerful search and discovery features that streamline access to training materials, procedures, and best practices.

By connecting employees to critical information across systems like SAP S/4HANA, Microsoft Dynamics 365, Microsoft Office, and Workday, Glean creates a digital thread across the enterprise. Its API framework extends to custom and legacy applications, ensuring operational data is instantly searchable and actionable – no matter where it resides. The outcome is less rework, faster alignment, and stronger collaboration through every stage of the manufacturing lifecycle.

³ [Bain & Company, Artificial Intelligence Rockets to the Top of the Manufacturing Priority List](#)

⁴ [World Economic Forum, Why should manufacturers embrace AI's next frontier - AI agents - now?](#)

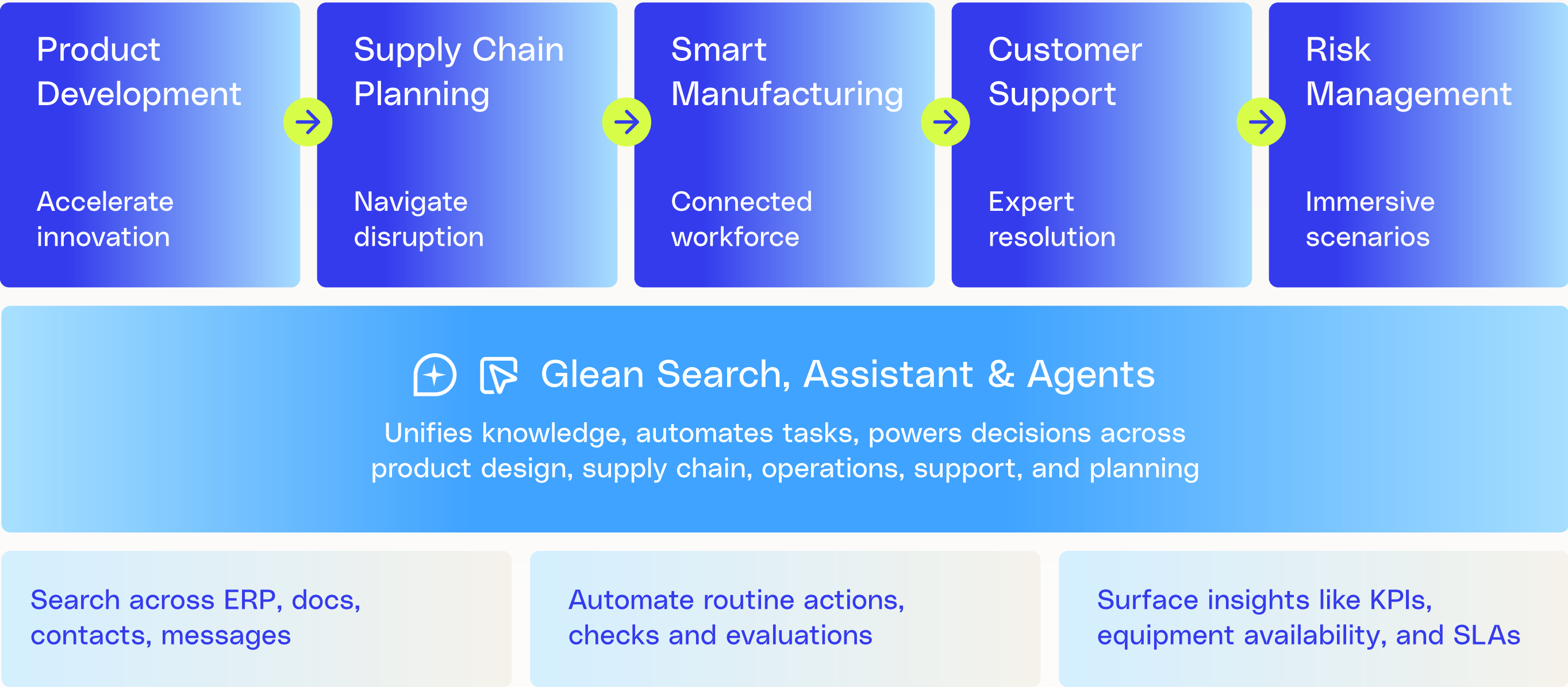
Glean: The Work AI platform for manufacturing

Glean provides a secure, permission-aware layer that unifies knowledge across enterprise IT systems, connects people with verified answers, and orchestrates agentic workflows through the tools teams already use. Frontline workers can ask natural language questions and receive step-by-step guidance for setups, changeovers, and maintenance – linked back to sourced SOPs or manuals. Leaders gain cross-program and cross-plant visibility to replicate best practices globally. Governance, versioning, and strict permissions ensure teams collaborate without compromising security or compliance.

This section highlights five critical phases in the manufacturing lifecycle where poor coordination often slows execution – and shows how Glean connects cross-functional teams to stay aligned and act with confidence.

Our Vision

How Glean can drive Industry 4.0 transformation for Manufacturers



3.1

Accelerate product development

Shifting geopolitical conditions and evolving consumer preferences are pushing product and R&D teams to localize designs and iterate more quickly. Even with historic levels of R&D investment, global teams often struggle with the “collaboration tax,” regulatory complexity, and the challenges of cross-functional coordination.

Analysts see generative AI as a breakthrough in this area. The Gartner GenAI Use Case Prism for Manufacturing⁵ identifies product development as a “high value, high feasibility” use case. IDC reports that 50% of large manufacturers will use generative AI to evaluate engineering archives and uncover new opportunities for innovation on legacy products.

The impact is already visible in some industries. Pharmaceutical and Food & Beverage manufacturers have realized significant value from generative AI in product development. AstraZeneca, for example, reported a 50% reduction in development lead times and a 75% reduction in experimental ingredient inputs – transforming its pace of innovation.⁶ Generative AI has also supported creative formulations by combining expert analysis with customer insights.

“

Infused with GenAI, you can have 100-plus ideas but also fully written concept statements fueled by consumer information.”⁷

– Justin Shimek, CEO, Mattson

With Glean, design and engineering teams can:

- **Draft regulatory filings and concept briefs**, reducing non-essential work and capturing market and compliance context.
- **Search and analyze archived engineering data**, surface patterns in sales and warranty trends, and identify high-potential ideas.
- **Unlock unique formulations and designs** by combining historical knowledge with generative insights.

For design and engineering leaders, access to both current and historical data – elevated by a powerful AI assistant – is critical. Glean accelerates innovation by making that knowledge accessible, actionable, and connected to every stage of the product development process.

⁵ Gartner, [Use-Case Prism: Generative AI for Manufacturing](#)

⁶ World Economic Forum, [How AI is transforming the factory floor](#)

⁷ IFT, [How AI Is Revolutionizing Product Development](#)

3.2

Navigate supply chain disruptions with shared context



Since 2020, supply chains have become increasingly complex and volatile, with many manufacturers regularly facing disruptions to critical inputs. Although delivery times for raw materials have improved, they remain above pre-pandemic levels. This complexity demands real-time, end-to-end visibility. Without it, even leading manufacturers struggle with delayed decisions, missed service levels, and mounting operational risk. As a result, nearly 80% of manufacturers have implemented or are planning to invest in supply chain planning software.⁸

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Yet visibility alone is not enough. Traditional systems can alert teams to anticipated disruptions, but the response remains reactive. What is needed is the ability to orchestrate handoffs so supply chain and operations teams can collaborate and adapt in real time.

Glean closes the gap between knowledge and execution by creating a shared context. Instead of cycling through ERP systems, MES dashboards, spreadsheets, and collaboration tools, supply chain teams can surface the most relevant data in one place and act immediately.

With Glean, supply chain leaders can:

- **Retrieve and analyze historical data** to assess carrier performance.
- **Surface key delivery clauses**, monitor live shipping exceptions, and track third-party logistics (3PL) notifications.
- **Automate workflows** such as carrier selection, root cause analysis, and compliance or performance reporting.

By providing a single layer of intelligence that connects fragmented data and applications, Glean transforms supply chain management from reactive firefighting to proactive orchestration. Manufacturers equipped with this visibility can reduce costs, optimize inventory levels, and build more resilient networks.

⁸ [Deloitte, 2025 Manufacturing Industry Outlook](#)

⁹ [Deloitte, 2025 Manufacturing Industry Outlook](#)

3.4

Enhancing service quality without raising costs



In highly competitive industries like manufacturing, customer experience is a critical differentiator. From quoting and order fulfillment to delivery and after-sales service, it drives retention, share of wallet, cost-to-serve efficiency, and resilience during disruptions.

74% of manufacturing respondents plan to use or are already using generative AI to enhance their customer experience – but support teams need tools that can manage the complexity they face.¹¹ When information is siloed across disconnected systems, support agents struggle to respond quickly. Resolving order fulfillment, warranty, or returns issues often requires toggling between CRMs, repair guides, and spreadsheets – slowing case resolution and making consistent answers harder to deliver.

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Glean equips support teams with real-time context drawn from internal knowledge bases and systems. By unifying data across CRM, order management, support, and collaboration tools, Glean makes it easier for agents to respond quickly and collaborate across functions. Escalations that require input from sales, operations, or supply chain teams are streamlined, reducing delays and confusion.

With Glean, customer support agents can:

- **Resolve inquiries faster** with unified search across products, orders, and policies, and coordinate complex escalations with shared templates and SOPs.
- **Automate routine tasks** such as responding to common queries, summarizing customer issues, and drafting quick responses.
- **Ramp up new agents quickly** with access to past case histories, procedures, and FAQs – driving consistent, confident communication across shifts and sites.

By empowering support teams with Glean, manufacturers can better navigate dynamic, information-heavy environments where fast, accurate answers are essential. The result: improved visibility across every touchpoint, faster response times, fewer errors, and higher customer satisfaction.

11 Deloitte, [2025 Manufacturing Industry Outlook](#)

12 Deloitte, [2025 Manufacturing Industry Outlook](#)

3.5

Strengthening scenario planning for resilient operations

Even the simplest product requires manufacturers to plan for the long term – balancing variables like sources of supply, demand forecasts, and capital investments, while accounting for risks that could disrupt execution. To succeed, integrated business planning (IBP) teams need to operate from a single, trusted set of numbers so that assumptions stay consistent across the organization. The disciplined “what-if” scenario planning conducted by IBP teams is essential for building resilient operations.

The AI Use Case Compass for Manufacturing proposes deploying AI to create realistic scenarios and training environments.¹³ Generative AI, combined with modern approaches like control tower and digital twin models, makes scenarios more dynamic by simulating disruptions, testing policies, and stress-testing playbooks before events occur.

Glean supports IBP teams by generating synthetic training data grounded in an organization’s actual SOPs, procedures, policies, and contracts. This allows teams to train and stress-test their capabilities in environments that reflect real-world conditions.

With Glean, IBP teams can:

- Create realistic exercises with synthetic inputs such as customer escalations, downtime, and crew communications to evaluate readiness and resilience
- Build and orchestrate agents to run end-to-end drills, automating checks, notifications, and escalations while capturing lessons learned for the next IBP cycle

By equipping planning teams with Glean, organizations can accelerate planning cycles, develop immersive scenarios, and create playbooks grounded in real data. With everyone aligned on a trusted set of numbers, manufacturers can adapt to disruption, drive effective long-term planning, and strengthen operational resilience.

13 Medium, [AI Use-Case Compass – Manufacturing: Smart Factories, Zero Downtime](#)

3.3

Onboarding frontline workers and preserving knowledge

Manufacturing employees bring deep expertise to complex production, often working with advanced technologies. But the combination of an aging workforce and a lack of skilled replacements is a growing challenge – 80% of surveyed manufacturing professionals say labor turnover has disrupted production.¹⁰

For plant managers, persistent shortages put customer commitments and production quotas at risk, while also threatening the loss of institutional knowledge built over decades. Embedding generative AI into production workflows can help mitigate these risks and boost productivity on the line.

Glean accelerates onboarding and training by giving frontline workers instant access to the information they need – whether it’s a line setup and changeover procedure, a quality control checklist, or equipment maintenance steps.

With Glean, plant managers can:

- **Speed time to proficiency** with concise, step-by-step guidance and embedded answer citations so operators can resolve issues without waiting on experts.
- **Maintain compliance** with ownership, review cycles, and versioning, ensuring only current procedures surface during onboarding and on the floor.
- **Capture institutional knowledge** as verified Q&A, and close gaps with analytics that reveal high-friction searches and outdated materials – building resilience across lines and shifts.

New hires ramp faster when answers are in one place, tailored to their role and line, and tied to the latest approved procedures. Glean consolidates SOPs, safety protocols, training videos, troubleshooting guides, and shift notes into an AI-powered knowledge hub with role- and line-specific views and mobile access at the point of work. The outcome: fewer errors, less rework, and a durable knowledge base – even as experienced workers retire.

10 Deloitte, [2025 Manufacturing Industry Outlook](#)

Bringing Industry 4.0 to life with generative AI

Industry 4.0 offers manufacturers a path to address today's most pressing challenges, from geopolitical tensions to labor shortages and supply chain volatility. The barrier is no longer ambition or data – it's having a shared, secure, and trusted way to turn dispersed knowledge into execution.

Glean provides that layer. By unifying knowledge across OT and IT, delivering precise, permission-aware answers, and orchestrating agentic workflows, Glean helps manufacturers accelerate product innovation, preserve institutional knowledge, and strengthen collaboration across dispersed teams.

That's how organizations bring the vision of Industry 4.0 to life and stay competitive in a fragmented, demanding world.

To learn more about how Glean empowers manufacturers, [request a demo today](#).

Getting started: A secure foundation from pilot to plant

Manufacturers must balance innovation with strict compliance and security. A pragmatic approach is essential to ensure early ROI and long-term adoption. So, what does a generative AI deployment look like in practice?



With this process, leaders gain visibility, replicate best practices at scale, and maintain audit-ready traceability – all without workflow friction.