



TURING

The GenAI Playbook for Pharma Supply Chain Transformation

From forecasting blind spots to AI-driven resilience and ROI

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From forecasting blind spots to AI-driven resilience and ROI

Despite years of investment in digital supply chains, many leaders still struggle to turn AI into measurable outcomes. Common challenges include:

- Persistent inefficiencies in GxP-governed supply chains—from raw material variability to clinical trial supply waste.
- Forecasting blind spots driven by siloed LIMS, MES, ERP, and quality systems.
- Manual compliance workflows introducing risk in batch release and deviation management.
- Reactive maintenance on manufacturing lines causing preventable downtime and yield loss.
- Limited visibility into cold-chain and serialization data across global CMOs/CDMOs.

This playbook shows how GenAI agents can embed validated intelligence into critical pharma workflows—from demand and production planning to batch release and distribution—while maintaining GxP and regulatory integrity.

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From Blind Spots to Resilience



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Why supply chain workflows are ripe for AI

High-value supply chain use cases share common traits:

- Repetitive, manual processes that constrain throughput
- Heavy data governance requirements
- High risk of cost impact when decisions are delayed or inaccurate
- Decision risk directly impacts patients, compliance, and public safety
- Multiple stakeholders and compliance checkpoints

Validated GenAI agents can augment compliance-heavy workflows, automating documentation, simulating production scenarios, and predicting supply disruptions without compromising validation standards.

How Turing's agentic system rewrites the process

Unlike legacy automation, Turing's agents act inside workflows:

Forecasting Agent: Builds validated demand/supply forecasts across manufacturing and distribution tiers.

Audit Readiness Agent: Handles data collection and analysis, adherence to FDA, GMP, HIPAA, and ISO 27001.

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Rethinking Supply Chain AI



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Use case spotlight: AI-powered audit compliance

Enhanced compliance processes improve inspection readiness

Maintaining FDA and GCP compliance across multiple sites is one of the most operationally intensive and risk-prone challenges in biopharma. Manual audit preparation is time-consuming, error-prone, and difficult to scale, especially as regulations evolve and documentation multiplies. For Quality, Regulatory, and Clinical teams, even small gaps can trigger significant operational delays or noncompliance findings.

Turing's AI-driven audit copilot system uses agentic LLM workflows to:

- Automate inspection readiness
- Proactively flag risk
- Streamline document validation

From informed consent tracking to protocol deviation analysis, these domain-specific agents not only surface issues, but also suggest corrective and preventive actions—helping teams move from reactive compliance to continuous audit readiness.

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Results in the field

- 50% reduction in inspection preparation time: Enabled faster readiness for unannounced audits
- 20% increase in compliance accuracy: Minimizes the risk of non-compliance issues
- 30% cost savings: Reduced manual labor and audit prep expenses

Additional ROI dimensions

- Models trained on historical inventory and shipping data can forecast delays before they occur.
- LLMs generate batch documentation, resolve audit flags, and surface missing links across fragmented systems.

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Demand &
Fulfillment Spotlight



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What sets Turing apart

Turing Intelligence delivers execution-grade supply chain AI systems:

- **Interconnected forecasting models:** Demand, supply, transportation, and inventory linked in one loop.
- **Domain-specific agents:** Tailored for compliance, auditability, and more.
- **Human-in-the-loop governance:** Blending automation with analyst and technician oversight.
- **Automated traceability:** LLMs generate batch documentation, resolve audit flags, and surface missing links across fragmented systems.
- **Custom solutions** 100% aligned to your needs - We are model/platform agnostic, conducting extensive evaluation to select the right model infrastructure that is efficient, cost-effective, and fits your needs.
- **Reusable accelerators** on RAG, agentic framework, MCPs, and fine-tuning helps reduce the time to production.

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Turing's
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What results look like in the field: Pharma eCommerce

A leading healthcare solutions company partnered with Turing to modernize its legacy e-commerce platform that faced performance and scalability issues. Turing built a cloud-based, microservices architecture with localized deployments, automated CI/CD pipelines, and AI integrations like Yellow.ai, Datadog, Mixpanel, and Okta. The result: faster performance, reduced downtime, improved user experience, and a scalable, secure platform supporting the company's mission to make healthcare more accessible.

Outcome	Enabled By
90% faster displays	Enhanced workflows significantly boosted product catalog and order checkout speeds.
55% gain in performance	New architecture delivered a substantial average performance improvement.
5M records per country	Migration to country-specific instances streamlined datasets, improving data management.

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Proven
Field Results



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Applied AI for ROI

Rolling out AI in supply chains doesn't require a full-stack overhaul. It requires targeted pilots with clear ROI:

- **Assess bottlenecks:** Identify manual or error-prone workflows (forecasting, audit prep, inventory, etc).
- **Map agents to processes:** Align GenAI copilots to "validated pilots" in QA, QC, or supply forecasting.
- **Keep humans in the loop:** Let AI agents run repetitive workflows while managers validate key steps.
- **Secure the stack:** Ensure integrations comply with governance and regulatory systems.
- **Scale strategically:** Move from one use case (e.g., forecasting) to adjacent processes (inventory, regulatory compliance).

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How to see results with AI

Advise → Augment → Build

Turing Intelligence applies its [Strategy](#) → [Talent](#) → [Systems](#) execution trilogy to supply chain transformation:

- [Advise](#): Identify high-friction GxP workflows for safe automation.
- [Augment](#): Deploy GenAI copilots in validated environments.
- [Build](#): Scale compliant AI architectures with reproducible audit trails.

Schedule a working session with a Turing strategist to identify where GenAI copilots can reduce friction, improve forecasting, and deliver ROI—fast.

[Talk to a Turing Strategist](#)

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Real-World
AI Impact



About Turing

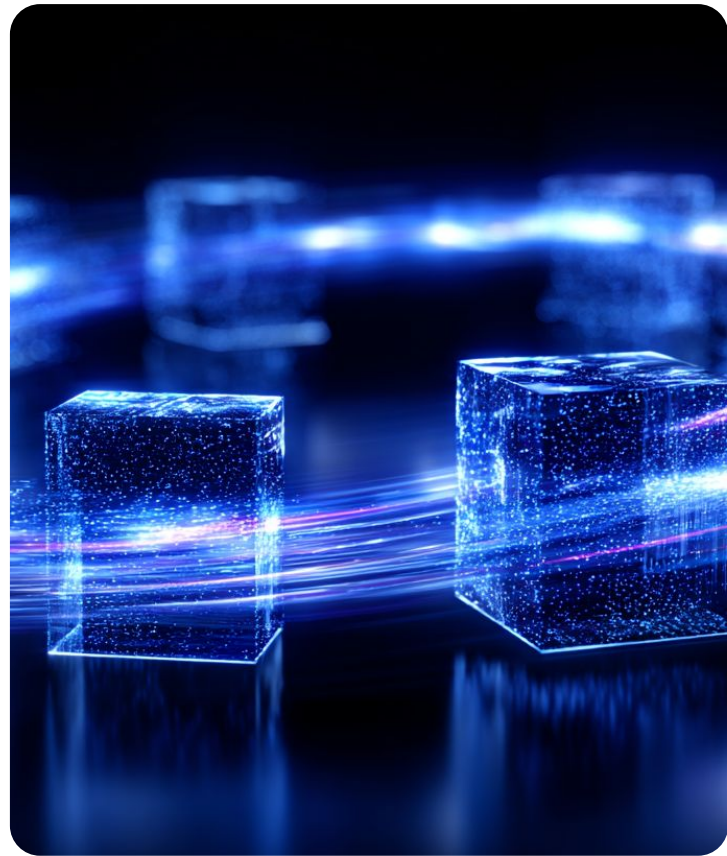
Turing is one of the world's fastest-growing AI companies accelerating the advancement and deployment of powerful AI systems.

It helps customers in two ways: Working with the world's leading AI labs to advance frontier model capabilities in thinking, reasoning, coding, agentic behavior, multimodality, multilinguality, STEM and frontier knowledge; and leveraging that work to build real-world AI systems that solve mission-critical priorities for companies.

Turing—based in San Francisco, California—was named #1 on The Information's annual list of "Top 50 Most Promising B2B Companies," and has been profiled by Fast Company, TechCrunch, Reuters, Semafor, VentureBeat, Entrepreneur, CNBC, Forbes, and many others. Turing's leadership team includes AI technologists from Meta, Google, Microsoft, Apple, Amazon, X, Stanford, Caltech, and MIT.

For more information, visit turing.com

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Let's map GenAI to your supply chain workflows

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