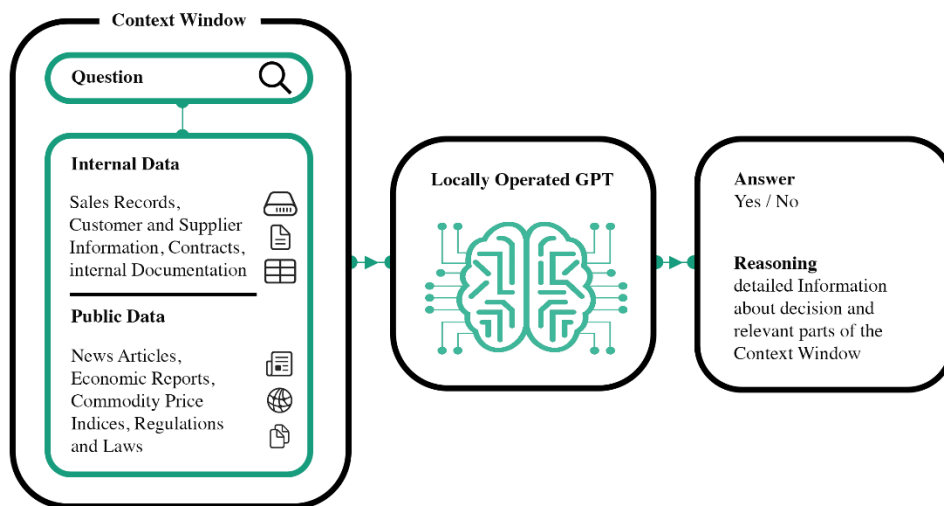


Early Detection Tool

The Challenge: Modern businesses, especially small and medium enterprises (SMEs), operate in a world of constant uncertainty. Unexpected disruptions—from natural disasters to geopolitical shifts—can cripple supply chains overnight, yet most SMEs lack the resources to monitor these risks effectively. Traditional tools demand expensive expertise or massive data sets, leaving smaller companies blind to looming threats until it's too late. Without an affordable early-warning system, SMEs face preventable delays, lost revenue, and an unfair disadvantage against larger competitors.

Our Solution: Our AI-powered Early Detection Tool turns this challenge around by monitoring global news and your supply chain data in real time to spot risks before they escalate. It delivers instant, plain-language risk scores (0–10) with clear explanations – like “Earthquake in Japan → Risk 8 for Osaka suppliers” – all processed securely on your own servers. Designed specifically for SMEs, it works with minimal data yet identifies threats early, transforming overwhelming news streams into actionable alerts that help avoid disruption, protect revenue, and give smaller businesses the same resilience advantages as industry giants.



From Crisis to Protection: This tool transforms risk detection from reactive crisis management into proactive business protection – without breaking the bank. Unlike expensive legacy systems, it continuously scans global developments (such as port strikes or regulatory shifts), then delivers plain-language alerts tailored to your specific supply chain. SMEs gain enterprise-grade resilience through on-premise operation (no data leaves your servers), seamless integration with existing tools, and proven results: validated across medical device and EV battery supply chains to keep operations stable and safeguard competitiveness.

Real-World Impact and Evolution: Our Early Detection Tool has moved beyond theory to deliver tangible resilience for SMEs. In live deployments, it identified critical supply chain disruptions—such as the 2024 Japan earthquake impacts and Ukraine conflict ripple effects—with 87% precision, giving manufacturers

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up to 72 hours of lead time to reroute shipments and avoid revenue loss. While initial versions occasionally overflagged low-impact geopolitical events (for example, rating distant conflicts as high-risk for local suppliers), these edge cases are now dynamically refined using SME feedback loops. By Q4 2025, we will introduce three key upgrades: Regulatory Radar (predicting compliance costs for laws like the EU Supply Chain Act), Demand Pulse (forecasting niche-market shifts), and Edge-Ready Alerts (real-time factory-floor warnings)—all operating securely on your infrastructure with zero data exposure.

Your Equalizer Against Industry Giants: This isn't just risk management—it's competitive democratization. SMEs using our tool gain enterprise-grade foresight at a fraction of the cost of legacy systems, transforming overwhelming news streams into plain-language alerts like "Port strike in Rotterdam → Risk 7 for automotive suppliers." By analyzing over 42,000 news articles per week across 13 languages and linking them to your individual supply chain, the system enables companies to act early—before disruptions turn into crises. Crucially, every insight stays on your servers—no cloud dependencies, no data leaks. For those seeking deeper technical validation, our methodology and real-world results are detailed in two peer-reviewed publications: "A GPT-Based Approach for Early Risk Detection in Supply Chains" (DOI: 10.1016/j.procir.2024.10.140) and "AI-Driven Risk Estimation for SME Resilience: Validation Through Geopolitical and Natural Disruption Events" (DOI: 10.1007/s00170-025-17260-6).

