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Decision AI: Partnership Between Human and Machine — the Unlock to Faster (and Better) Response Decision Models

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SPOTLIGHT

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A variety of macro and competitive pressures are stretching supply chains, placing heightened focus on organizational efficiency, requiring increased insights, and demanding faster responsiveness in decision-making.

Decision AI: Partnership Between Human and Machine — the Unlock to Faster (and Better) Response Decision Models

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Agentic AI is emerging as a critical component of touchless planning and quick decision-making

For multiple generations, lean management systems have been evolving supply chains to be more efficient. As supply chains iterated through the industrial revolution, the Toyota TQM methodologies, Six Sigma, modern versions of Lean, a focus on just-in-time, an extreme focus on the reduction of waste, and keeping inventories as tight as possible brought ever-increasing gains in cost efficiencies. Indeed, sayings emerged placing the focus on getting things right and avoiding sloppy mistakes. "Go slow to go fast" was a favorite among employees at Nike, where I worked for 21 years.

AT A GLANCE

Top 3 reasons AI is driving improvements in automation and decision intelligence:

1. In the age of disruption, enterprises cannot afford to focus solely on cost or resiliency. Both are required.
2. AI suites can process information at scales humans cannot.
3. The onset of decision automation is set to unlock the balance between cost and resiliency.

Lean was great for the age of growth and predictability. But what of the age of disruption? It seems every time we turn around, we witness a new conflict, blocked canal, broken bridge, health crisis, tariff announcement, supply shock, or demand spike. What if we now need to go fast to go fast? And what if just-in-time inventory is the culprit for missed sales, failed shipments, canceled flights, and downed manufacturing lines?

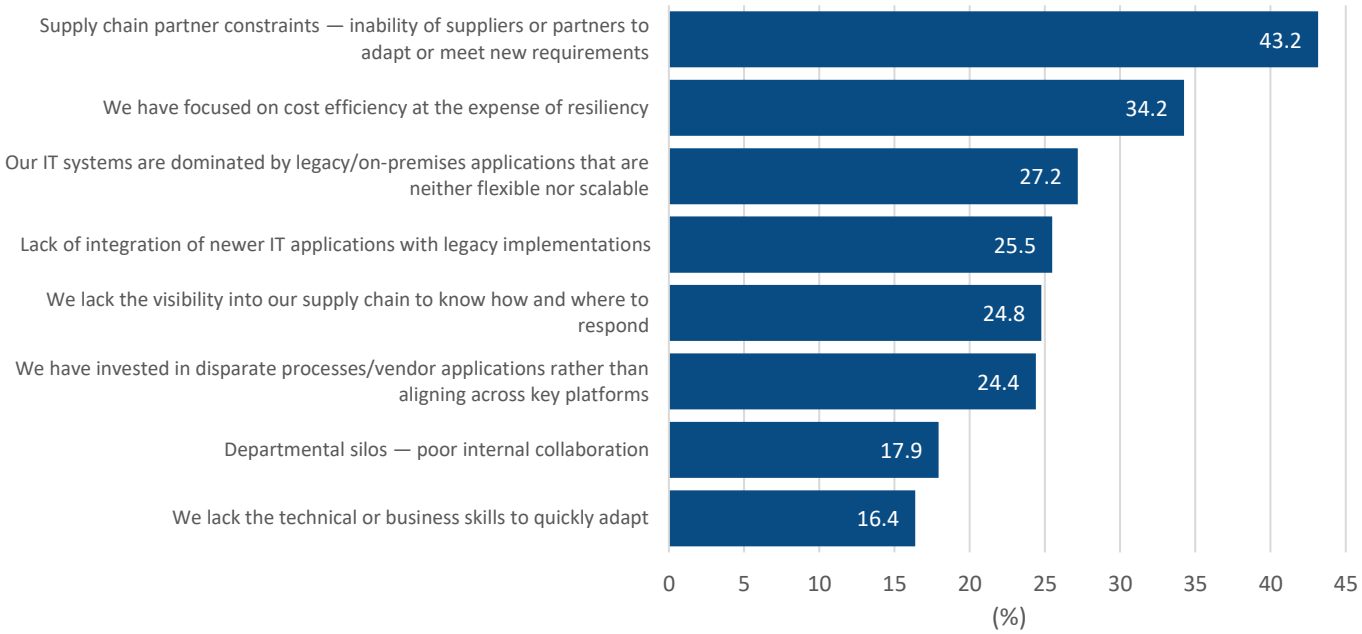
In the past five years, enterprises have experienced moments of existential crisis, with supply chain resiliency not only a competitive advantage but a survival necessity. IDC defines resiliency as the combination of agility and visibility, and the priority of each has never been as clear as in the age of disruption.

This would lend itself easily to companies simply prioritizing resiliency, except for one — albeit big — thing. Macro-economic pressures (foreign exchange, inflation, interest rates, etc.) have put heavy pressure on costs. Just as enterprises faced ongoing disruption, they experienced cost pressures as high as ever — or even higher.

The tension between cost and service has now evolved beyond service to the tension between efficiency and resiliency. In IDC's annual *Supply Chain Survey*, this rings true. We surveyed over 1,800 supply chain practitioners, managers, and executives, who articulated the point (Figure 1).

Figure 1 Supply Chain Disruption Challenges

Q. What has prevented your supply chain from responding more effectively to market changes/disruptions?



Source: IDC, Worldwide Supply Chain Survey 2025

Among the main pain points in achieving a better disruption response, the tension between cost and resiliency ranked second, while systems and capability limitations placed third and fourth. Only supplier issues ranked above these issues, and the chances are high that those suppliers face the same issues. Effectively, supply chains' focus on efficiency has, in some cases, been at odds with the resiliency of the same.

So, if "go slow to go fast" needs to evolve into "go fast to go fast," but it must be done at a scalable cost, it seems the old methods of "throwing bodies" at problems or of stacking inventory for safety will not achieve the shared aims of cost and resiliency. As supply chains shift from either/or to both/and thinking, supply chain technologies and shifts in supply chain processes are emerging to help achieve both.

In supply chain planning, the notion of touchless planning has long been a desired outcome. It has gone by the name of exception management and has been measured by such data points as forecast value-add, but the general aims of doing less with more and of increasing processing speed have been consistent.

Historically, the application of specialized AI — that is, mathematical, algorithmic, and logic-based AI — has aided in increasing forecast accuracy, and the onset of machine learning (ML) has aided in optimizing inventory, supply, and demand plans. However, touchless planning has still not been fully achieved by the majority of planning organizations.

Recent advances in automation seem promising, as a variety of vendors have begun bringing generative AI (GenAI) and agentic AI solutions to the forefront. In fact, some are leveraging a combination of specialized AI, GenAI, and agentic AI to support process automation.

Use cases are emerging around exception management and touchless planning that are enabling real benefits, such as planning twice as many SKUs with a minimal increase in headcount and executing changes to demand and supply plans with decreased lag times due to the removal of decision points.

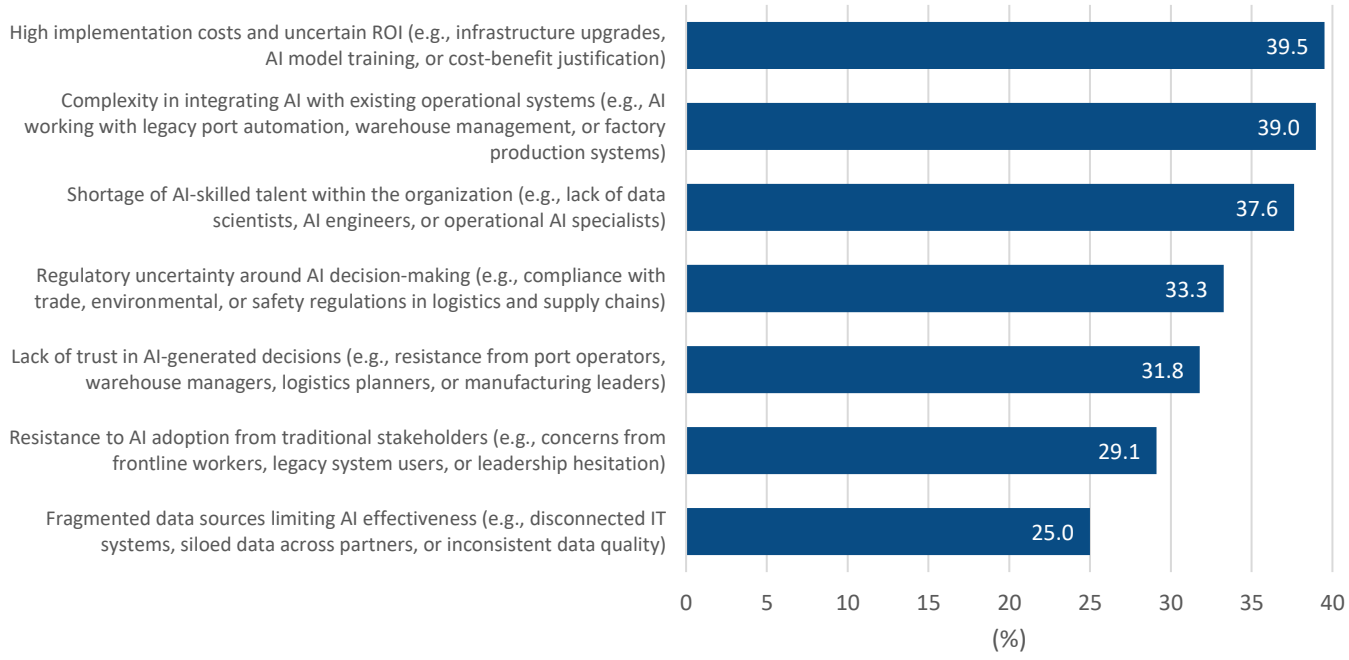
In fact, the field of decision intelligence — or, as some may call it, decision support and automation — is emerging to bring together disparate tools such as supply chain command centers, control towers, optimizers, AI, analytics, and dashboards to support best practices in supply chain, increase the pace of decision-making, and further automate processes.

The question begs to be asked, then: What is holding companies back from leveraging these technologies to achieve faster processes and support touchless automation where possible? The first answer, which is also in the data of IDC's *Worldwide Supply Chain Survey, 2025*, is that companies have ranked both decision automation and process/task automation in their top 9 priorities for addressing supply chain challenges, while improving supply chain planning tools ranked first. The hunger is clear, but challenges are evident.

When asked what barriers are slowing the implementation of AI-driven decision-making (Figure 2), companies cite costs, complexity, and talent as their top 3 hurdles, with trust in AI decisions as the fifth concern.

Figure 2 Barriers to Operationalizing AI-Driven Decision-Making.

Q. What barriers prevent wider adoption of AI-driven decision-making in supply chain operations?



Source: IDC, Worldwide Supply Chain Survey 2025

It seems that tech vendors will be looking to demonstrate real value in decision support and decision automation. But, considering the dual pressures of cost and resiliency, IDC believes the majority of supply chains will heavily pursue process automation and optimization over the next few years, and perhaps cannot afford not to.

In light of advances in technology, the good news is that those hurdles are seemingly not insurmountable.

Benefits

The benefits of AI-supported decision-making, as discussed, are the very key to balancing cost and resiliency. But a few specifics are listed here:

- **Process Optimization:** GenAI, large language models (LLM), and agentic AI are all converging to codify best practices, store knowledge in organizations, coach executors (e.g., new hires), and fine-tune processes to ensure best practice adherence and even learning.
- **Process Automation:** As with optimization and knowledge management, these tools are enabling advances in automation. As planners and managers see consistency in decisions, the option is growing to "hit the button" and automate processes. As long as trust is a concern, tools will continue to evolve to support a spectrum of interaction with AI, from full human interaction to full process automation.
- **Sophisticated Insights and Decision Support:** The broad combination of specialized, generative, and agentic AI, alongside robust analytics tools, enables the sheer volume of records to be processed at a scale that the human brain simply cannot. Coupled with optimizers and goal seekers, this empowers humans to make more sophisticated decisions and balance the tensions of cost and resiliency.

Considering o9

o9 Solutions provides an AI-powered software platform designed to support enterprise planning and decision-making. Its platform is used by large organizations across more than 30 industry sectors to improve operational efficiency and responsiveness. The core offering, the o9 Digital Brain platform, enables businesses to digitalize processes ranging from day-to-day execution to long-term strategic planning. It supports functions across the supply chain, commercial operations, and financial domains, helping organizations respond more effectively to changing market conditions. A key component of the platform is the Enterprise Knowledge Graph, which integrates diverse data sources and organizational knowledge to support coordinated planning and execution. Clients have reported measurable improvements in areas such as inventory management, cost control, and service performance.

Between 2024 and 2025, o9 introduced several enhancements to the Digital Brain platform, focusing on AI-driven capabilities:

- **AI Agents for Planning and Execution:** These agents assist decision-makers by analyzing large datasets and providing insights into operational trends, potential risks, and recommended actions. They combine generative AI with the Enterprise Knowledge Graph to support informed decision-making.
- **Performance Post-Game Analysis (PGA):** This feature helps organizations understand deviations between planned and actual outcomes. It includes tools for identifying performance gaps, conducting root-cause analysis, and generating narrative insights to support continuous improvement.
- **Self-Service Fast Innovation Platform:** This offering enables users to customize and extend their planning capabilities through a low-code/no-code interface. It supports ongoing innovation and adaptation of business processes within the existing platform environment.

These developments reflect o9's continued investment in research and collaboration with strategic clients to enhance enterprise planning tools in dynamic business environments.

Challenges & Considerations for Tech Buyers

As the supply chains of organizations around the world progress in their ability to leverage technologies to move toward touchless planning, decision automation, and informed best practices, a few internal and external factors should be considered:

- **Organization and Culture:** It is not enough just to put tools in place, set them, and forget them. The organization needs to evolve, leverage decision support and intelligence, and shift to autonomous processes. Consider, for example, how to break down silos, foster collaboration, and even decide, culturally, what the enterprise's trust level in AI tools will be. Determining new ways of working will require change management and positioning the organization for a culture that can leverage the power of all forms of AI and decision automation.
- **Key Partners:** As organizations determine their readiness (and trust level), they must find partners that offer flexible solutions. An all-or-nothing approach is unlikely to suit their needs. The good news is that many vendors offer configurable automation and decision support, enabling organizations to set the level of autonomy versus human engagement. They should seek partners that can configure solutions for the best blend of automation and human insight/management.
- **Practicing Now:** Organizations can already begin moving away from unproductive planning activities and prepare to leverage these tools. They can seek ways to accelerate consensus-building and collaboration and to leverage predictive analytics, scenario modeling, and post-action reviews. While some vendors are building toolsets around these activities, organizations can begin to build the organizational muscle needed to handle this heavy shift.

"The era of lean management has been met head-on with the era of resiliency in supply chains. One of the primary unlocks to shifting from either/or thinking with cost and resiliency is the power of AI to realize decision support and process automation."

*— Research Director **Eric Thomspon**, Worldwide Supply Chain Planning, IDC*

Conclusion

In order to accelerate response times, improve processes, and automate decision-making, supply chains are increasingly leveraging suites of AI tools. Not only are some realizing improvements in speed, but they are also simultaneously balancing the realization of cost efficiencies and supply chain resiliency gains.

About the Analyst

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As a research director, Eric Thompson is a member of IDC's Worldwide Supply Chain Strategies Program, responsible for providing research, analysis, and guidance on key business and IT issues pertaining to manufacturing, retail, and healthcare supply chains. Eric currently leads the Worldwide Supply Chain Strategies: Planning and Multi-Enterprise Networks practice, providing fact-based research, analysis, and insight on best practices and the use of information technology to assist clients in improving their capabilities in these critical supply chain areas.

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More About o9

o9 Solutions is a leading AI-powered platform for integrated business planning and decision-making for the enterprise. Whether it is driving demand, aligning demand and supply, or optimizing commercial initiatives, any planning process can be made faster and smarter with o9's AI-powered digital solutions. o9 brings together technology innovations — such as graph-based enterprise modeling, big data analytics, advanced algorithms for scenario planning, collaborative portals, easy-to-use interfaces, and cloud-based delivery — on one platform.

IDC Custom Solutions

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