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Supply Chain Technology Needs a Local Human Link

by Suzie Petrusic

Many organizations have invested heavily in digital supply chain technology to improve strategic decisions. But these new tools don’t improve global leaders’ ability to make good calls.

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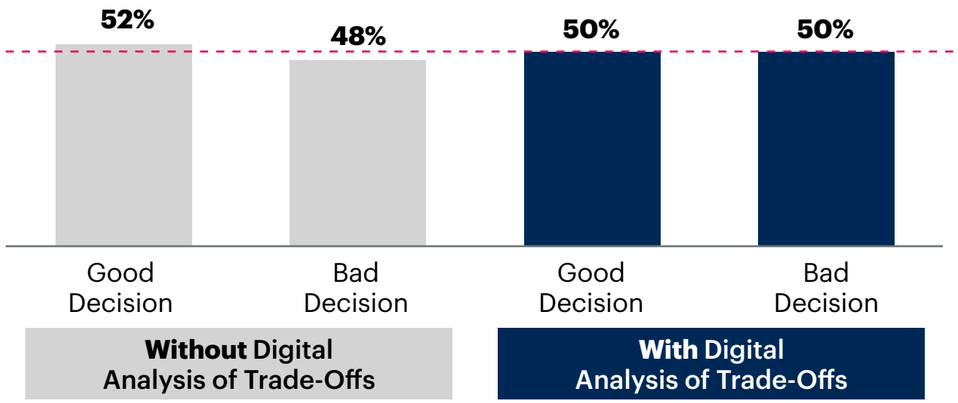
Global supply chain leaders often use digital trade-off analysis such as scenario modeling, what-if analysis or simulations — but their models capture on average only about 20% to 30% of relevant processes. In an estimated 90% of decisions, the digital-to-reality gap is wide, resulting in only a coin-flip's chance of making a good strategic decision (see Figure 1).[1]

» Figure 1: Digital Trade-Off Analysis Yields No Improvement
Percentage of Decision Makers



Digital analysis of trade-offs has **no meaningful impact** on improving the rate of good decisions.

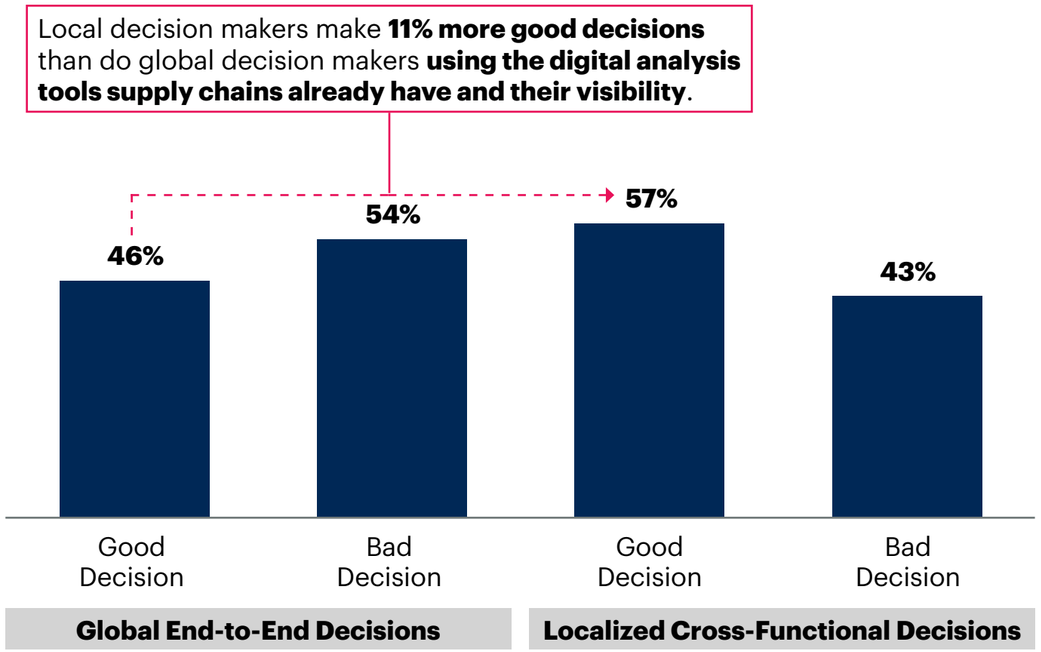
n = 600
Source: 2022 Gartner Supply Chain Digitalization Survey

Fortunately, there is a way out of this tech trap. Local cross-functional supply chain leaders (e.g., managers responsible for a combination of planning, sourcing, manufacturing, logistics or quality) make good decisions 11% more often than their global counterparts,[2] despite using the same digital tools (see Figure 2). That's because these local decision makers supplement the technology with their human visibility — including knowledge of local context, and operating conditions and relationships with important stakeholders.

Three companies — the U.S. sugar refiner ASR Group, Ericsson and Siemens — have narrowed the digital-to-reality supply chain gap by:

- Localizing more strategic decisions
- Digitizing the human element of local cross-functional decision models
- Accelerating digitization of supply chain processes

» Figure 2: Comparison of Likelihood of Good and Bad Global and Local Decisions



n = 449, p < .05, Digital Users Only

Source: 2022 Gartner Supply Chain Digitalization Survey

Localize More Strategic Decisions to Leverage Human Visibility

Local, cross-functional supply chain leaders are 83% more likely to make a good decision when they have good human visibility into the supply chain. That visibility helps them know what variables to include in their digital models, whether all the variables are in these models and whether the data used to calculate the trade-offs is accurate. ASR Group localizes more ambiguous decisions and keeps more straightforward ones at the global level (see Figure 3). While this tactic may seem counterintuitive, the company effectively neutralizes a strong bias to centralize strategic decisions by using data to show these decisions are better made locally.

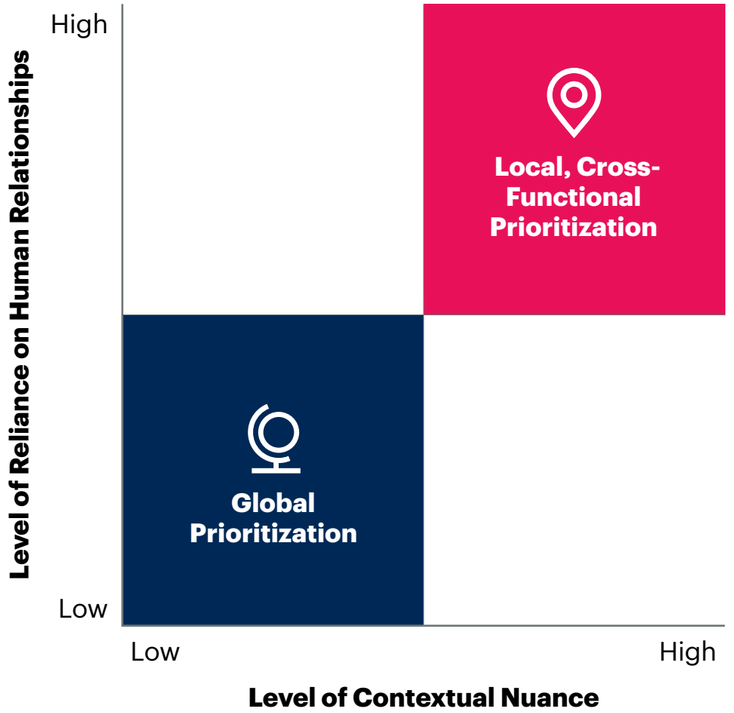
ASR reassigns what were global decisions to these supply chain leaders and then conducts a what-if analysis to compare the actual results with what a global decision maker would have expected based on analysis. If the outcomes exceed global expectations, the decision remains with the local executive.

"My hypothesis was that we would be able to move a significant number of local processes to global execution and decision making," recalls Doug Romain, senior vice president of global supply chain at ASR Group. But while the company found some limited opportunities to do so, including in freight spending, "most process ownership and decision making was better done locally, driven primarily by the local market knowledge" incorporated into the decisions, Romain says.

Once ASR has verified the local leader is better suited to make the decision, it seeks to maintain quality through good governance. Global supply chain leaders set the goals, local executives build decision models and are accountable for the outcomes, and the data analytics team is responsible for accurate analysis. This system enabled ASR to improve its on-time-in-full (OTIF) performance by 200 to 400 basis points, reduce inventory by 3% to 5%, and boost production attainment by 7% to 10%.

Doug Romain, Senior Vice President of Global Supply Chain, ASR Group

» Figure 3: Priority Matrix for Localizing Cross-Functional Strategic Decisions



Source: Adapted from ASR Group

Digitize the Human Element of Local Cross-Functional Decision Models

While moving strategic supply chain decisions to the local level will help, these leaders make good decisions only 57% of the time.[1] That's partly because most of them are using digital decision models and trade-off analyses designed for a single function within the supply chain, like procurement or planning, and supplementing these tools with human analysis based on their own insights. Instead, chief supply chain officers (CSCOs) should work with C-suite colleagues, including the CIO or chief technology officer, to support these leaders with technology that digitizes these insights, too, thus removing flawed human evaluations of complex trade-offs.

That's exactly what Ericsson does. For a given decision, the company asks a single local, cross-functional leader which relevant data points are not already included in their digital model. These can include data from spreadsheets and other digital logs, stakeholder interactions and information, and other analog records. Ericsson then digitizes these inputs to create a complete baseline decision model.

Next, Ericsson's centralized technology team implements data management standards like rules management, cleaning protocols, enrichment procedures and data quality monitoring. The aim is to make relevant, accurate, consistent and usable data available to other, similar decision makers, and make sure they have cloud access to digital tools.

Finally, Ericsson scales the expanded digital model by making the basic version available to these other leaders. They can then tailor it to their own specific purpose.

Digitizing local decision models enabled Ericsson to more than double the supply chain productivity gains it achieved with global digital technology. And the data analytics team's collaboration with local decision makers reduced the time to develop solutions by 70%.

In supporting these decision makers, Ericsson has also seen a cultural shift, says Danffer Navarro, the company's former head of digitalization. "Because they co-developed the solutions, they actually use it. They are now driving our digital transformation."

Danffer Navarro,
Former Head of Digitalization,
Ericsson

Accelerate Digitization of Supply Chain Processes

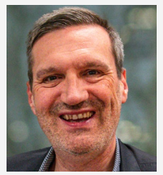
Global supply chain decision makers estimate operational and frontline staff deviate from defined processes 30% to 40% of the time. And only an estimated 40% to 50% of relevant processes are digitized in the first place. As a result, global decision makers are using human-derived decision models rather than data-derived models 62% of the time.[1]

Siemens is closing the digital-to-reality gap faster by encouraging supply chain process experts to code relevant processes. The company emphasizes potential candidates' interest in learning rather than their skill set in this area, and makes clear they will receive ongoing support and training. Providing these incentives to participate in citizen-led developer initiatives helps Siemens expand its pool of supply chain coders, rather than trying to teach robotic process automation (RPA) specialists each new process they need to digitize and automate (see Figure 4).

Process experts start with intense bootcamp-like training. Siemens makes subsequent assistance cost-effective by tailoring it to coders' specific needs. It includes access to an RPA-expert buddy, online tools and crowdsourced support within the company through social media interfaces.

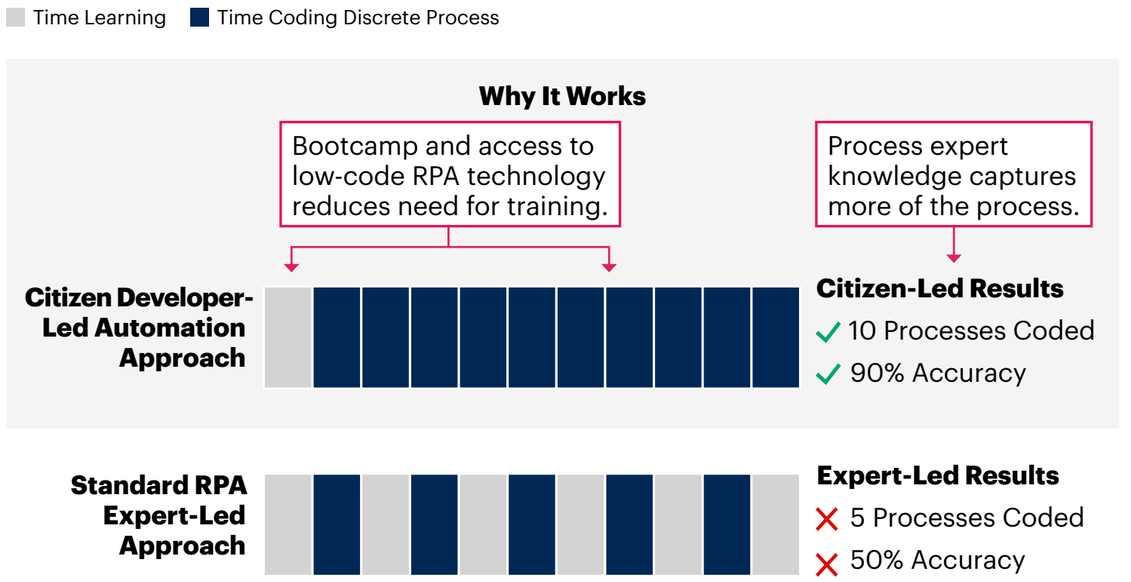
Siemens embeds quality checks throughout. The firm evaluates which projects it chooses for coding, establishes "quality gates" at different points in the process, and makes the coding led by supply chain experts part of its wider digital strategy. Siemens saved 30% more working hours by adding supply chain experts to the coding team. And the company more than doubled the number of automated processes.

"Acceleration in process automation means doing things differently," says Sven Markert, senior vice president, supply chain and logistics, Siemens. "The Citizen Developer with RPA Buddies concept is our way to create our strategic vision of a regionally empowered and digitally interlinked supply chain."



Sven Markert, Senior Vice President, Supply Chain and Logistics, Siemens

» Figure 4: Citizen Developers Drive Automation Efficiency



Source: Adapted from Siemens

[1] **2022 Gartner Supply Chain Digitalization Survey:** From October to December 2022, Gartner Supply Chain Research invited chief supply chain officers (CSCOs) to complete an online survey to study if good decisions were made more often when supported by digital technology. We received 600 completed responses during the survey period, spread across multiple industries, including manufacturing (n = 309), technology and telecom (n = 94), healthcare (n = 83), retail (n = 61), transportation (n = 29), and services (n = 24). A total of 474 respondents belonged to organizations with annual enterprise revenue of at least $1 billion, and nearly 300 were senior vice presidents or above. Of the total, 227 respondents primarily worked from North America, 167 from Asia/Pacific, 138 from EMEA and 68 from Latin America. Disclaimer: Results of this survey do not represent global findings or the market as a whole, but reflect the sentiments of the respondents and companies surveyed.

[2] We define a "good" decision as one that leads to the decision maker's expected supply chain performance and cost outcomes with low decision maker regret.

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