

PROCUREMENT
LEADERS

ROADMAP

STRATEGIC SOURCING: LEVERAGE AI
TO MITIGATE RISK AND CUT COSTS

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EXECUTIVE SUMMARY

- Two years into Covid-19, direct materials procurement is still challenging: supply chains remain risk-prone and price inflation is endemic.
- What to do? Businesses are realizing that traditional procurement systems do not possess the capabilities to address this new paradigm.
- An alternative approach is emerging: put procurement processes and interactions in the cloud, rather than on enterprise systems, and pull in externally sourced data.
- Artificial intelligence can then reveal new opportunities to reduce costs, mitigate risk and accelerate new product introduction.
- Digital network platforms can help you take the insights and use them to collaborate with suppliers/contract manufacturers to seize opportunities and mitigate risks.



Broken Chains

The Covid-19 pandemic and its after-effects have laid bare the inadequacies in many companies' strategic sourcing strategies—a new approach is required.

Procurement organizations are still managing the disruptions that have resulted from the Covid-19 pandemic: inflation, increasing demand, and record-high lead times, to name a few.

It's important to note, though, that disruption is not the only risk. When sourcing direct materials, businesses must also be aware of risks such as poor supplier performance, poor quality, and vendors that face financial troubles, as well as suppliers' innovation prowess and long-term competitiveness as currencies fluctuate and the global geopolitical situation evolves.

But mitigating these risks through traditional means presents a risk of overpaying, thereby sapping businesses' competitiveness.

According to Simon Geale, SVP for Client



What's needed is a more holistic sourcing process, one that embraces factors other than just price comparison and pulls in factors such as risk, quality, supplier performance and the opportunities offered by sourcing through secondary markets.

Simon Geale, Proxima

Solutions at procurement consultants Proxima, traditional sourcing solutions are of little help.

“Generally, the sourcing automation solutions available in the market concentrate on process automation and focus largely on price competition,” he says. “What's needed is a more holistic sourcing process, one that embraces factors other than just price comparison and pulls in factors such as risk, quality, supplier performance and the opportunities offered by sourcing through secondary markets.”

But how can organizations achieve that? Increasingly, observers point to artificial intelligence and the cloud—two game-changing technologies that hold the promise of rewriting the rules both of how procurement systems operate and where they reside. ■

Data to the Rescue

The improved availability and quality of data is enabling procurement teams to make better-informed decisions.



Capabilities such as strategic sourcing, component aggregation over fewer stock-keeping units, and supplier risk analysis aren't new. But what has been lacking is sufficiently granular data with which to do it—dynamically, in as close to real time as possible.

Steven Carnovale,
Rochester Institute of
Technology Saunders
College of Business

The sourcing and procurement of direct materials at scale is complex.

Simple transacting is straightforward enough: agree on a contract or place a purchase order. In reality, however, the leadup to these decisions is incredibly involved. For example, ensuring you're dealing with the right supplier, from both a cost and risk perspective. Or purchasing the right part or material; would purchasing more of an equivalent part or material found in other products deliver greater savings? Would buying from a distributor cost less than buying directly from the manufacturer and, if so, which distributor? And when negotiating with suppliers, would real-time marketplace pricing deliver greater negotiating power than simply relying on backward-looking 'should-cost' data?

Unscrambling such questions at scale is challenging. But the reality is that, historically, most businesses haven't even tried. Instead, they've focused only on a subset of the problem, says Soroosh Saghiri, Senior Lecturer at Cranfield School of Management's Centre for Strategic Procurement and Supply Chain Management.

"With procurement organizations under pressure from a resource point of view, they're forced to focus on a few key categories; items that are of strategic importance and the most risk-prone items," he points out. "This leaves significant opportunities untapped and significant risks unaddressed. They're saving cents and pennies when there are dollars and pounds to be saved elsewhere—and they're looking at some risks while ignoring most risks."

But now more than ever, data exists with

which to significantly broaden sourcing's remit, pulling in these under-addressed purchased items and risks, says Steven Carnovale, Assistant Professor Of Supply Chain Management at Rochester Institute of Technology's Saunders College of Business and Co-Editor-in-Chief of the *Journal of Purchasing and Supply Management*.

"The availability of digital data has exploded in recent years," he says. "Capabilities such as strategic sourcing, component aggregation over fewer stock-keeping units, and supplier risk analysis aren't new. But what has been lacking is sufficiently granular data with which to do it—and do it dynamically, in as close to real time as possible, augmented by AI and smart analytics as much as possible."

Just as powerfully, there has also been an explosion in the quantity of near-real-time data on global logistics chains, costs, infrastructure, and supplier locations, adds Julie Fraser, VP for Manufacturing and Operations Technology Research at analyst firm TechClarity. The result: better visibility into logistics costs, the status of shipments, and the smooth running—or not—of suppliers' manufacturing and logistics operations in the event of natural disasters or political unrest.

"The downside? It's external data and it doesn't—and generally can't—reside in businesses' traditional enterprise systems," she says. "You've got the data for a real-time window into actual global trade, but you've still got to integrate it with the data in your enterprise systems and put it into a context that is capable of being analyzed with advanced analytics. It's often said that sourcing is more art than science—but data does help and now it's more available than ever." ■

The Power of Aggregation

Compiling and sharing data between organizations has the potential to offer buyers more leverage in negotiations and make procurement more dynamic.

Are you paying more than your competitors or peers for the same component? If so, which negotiation strategies—or alternative sourcing decisions—might reduce the gap? Does a proliferation of component stock-keeping units provide an opportunity for component aggregation and consequent price reduction? And does your supplier base have inherently greater risk exposure than those of your competitors or peers?

For procurement organizations, such questions are both troubling and difficult to answer.

But there is a way—once procurement and sourcing move away from enterprise-specific systems and onto multi-enterprise shared marketplaces that connect buyers and sellers and against which smart analytics and AI can be thrown.

Take, for example, pricing. With multiple buyers purchasing the same component from the same supplier, seeing which buyers are achieving the lowest prices is straightforward, notes Steven Carnovale, Assistant Professor of Supply Chain Management at Rochester Institute of Technology's Saunders College of Business.

“With all that common data, it's very easy to see how buyers' annual demand and the procurement lot size has a bearing on price, providing insight into negotiating strategies,” he says. “Nor is it solely about price negotiation: once you move away from measuring demand in terms of annual



Pooling data at scale makes obvious good sense and, as technology becomes more ubiquitous and cheaper, it's possible for more and more companies to meaningfully access the value that it offers.

**Michael Lewis,
University of Bath
School of Management**

consumption, it's possible to explore the combined impact on both working capital and purchase costs by intelligently matching dynamic consumption to dynamic procurement.”

So too with component aggregation, of course. If the buyer's bills-of-material resides with both the marketplace and an AI-driven aggregation engine, buying organizations can easily identify aggregation opportunities and their impact on both purchase costs and supplier selection.

The same goes for risk, adds Tech-Clarity's Julie Fraser.

“It's not just about obtaining greater visibility into risks; it's about being able to make intelligent and better-informed choices between those risks,” she says.

Michael Lewis, Professor of Operations and Supply Management at the University of Bath's School of Management, cites price discovery through data aggregation as a good example of a capability that wasn't available 10 years ago. “Pooling data at scale makes obvious good sense and, as technology becomes more ubiquitous and cheaper, it's possible for more and more companies to meaningfully access the value that it offers. Of course, there are privacy and data security issues to address but a trusted provider should be able to accomplish that,” he says.

One such provider: LevaData, founded and led by former procurement executive Rajesh Kalidindi after he saw at first hand the value that better market intelligence could deliver in terms of price discovery, sourcing, and risk mitigation.

“We're in the business of democratization,” Kalidindi says. “We say: ‘Here's how you get the same negotiation power as a large company, even though you're a small company. And here's how you can negotiate like a buyer with 20 years' experience of sourcing material, even though you've only been doing it for three years.’ We level the playing field.” ■



Flipping the pyramid: Different Data, Different Outcomes

By fully leveraging market data and augmenting that with internal data, procurement teams can deliver impressive savings based on new insights.

There's a story that Rajesh Kalidindi likes to tell. The Founder and Chief Executive of LevaData was once asked in a former role as a procurement leader in an electronics business with a \$1bn spend to deliver sufficient cost savings to enable the business to claw back a four-percentage-point improvement in its gross margin.

"But we'd only just delivered an 8% reduction weeks before. And now the ask was for half as much again on top. It would be difficult and I knew we had to change how we approached the task to achieve it. We had to do things differently. So, I got my team together and said: 'Let's get together all the data—and all the marketplace intelligence—that we can get our hands on.' That took three months, after which we could see a tremendous opportunity to connect dots that we hadn't even seen previously."

Kalidindi describes the result as "a complete home run": having already just cut 8% off costs, Kalidindi's team had now delivered a further 6% saving on a \$1bn tranche of expenditure, delivering \$60m to the bottom line. Three months later, he says, the procurement team did the same again, this time with a \$350m negotiation.

"That was the point at which I realized this could be done automatically and continuously. Not as a cadence, but at speed, continuously," he sums up.

It was this realization that ultimately led to the founding of LevaData in 2014.

"I talked to many other CPOs and asked them what they thought about the idea of automating what we'd done and selling it as a service. Some said that if I built it, they'd buy it. So we did."

Today, LevaData is what Kalidindi describes as an "integrated sourcing and procurement platform": AI-powered, housed in the cloud and delivering Software as a Service sourcing and procurement capabilities as actionable recommendations,

including in the areas of risk identification and mitigation. Total spend on the platform exceeds \$100bn, he adds.

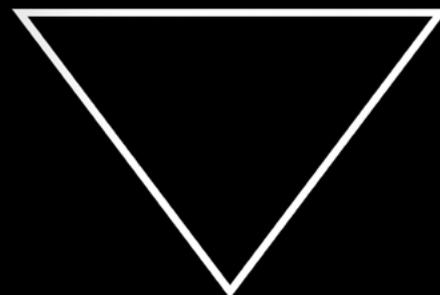
Built around three main capabilities—cost optimization, new product introduction acceleration, and supply risk management—with a common buyer-seller network collaboration backbone, the LevaData platform is credited with delivering an increase in sourcing velocity of more than 60%, two to three times more spend coverage than procurement organizations could formerly deliver, and productivity gains in excess of 20%. Overall, says Kalidindi, LevaData users can expect a 3% to 5% improvement in savings, delivered through recommendations made by LevaData AI.

"We view LevaData as an opportunity for businesses to 'flip the pyramid' and switch to an outside-in mindset," he says. "Traditionally, they've mainly used internal data, augmented by some external data. But with LevaData, it's the other way around: a lot of external data, augmented by internal data such as demand forecasts, production plans, and bills-of-material. It's a different paradigm." ■



We view LevaData as an opportunity for businesses to 'flip the pyramid' and switch to an outside-in mindset.

Rajesh Kalidindi,
LevaData





The Risk Dimension

Harnessing a vast array of external data to uncover hidden supply chain risks is enabling companies to prioritize and mitigate threats before they cause disruption.



There's a much greater awareness that supply chains can very quickly find themselves swamped by almost-continuous and completely unpredictable disruptive events.

Adeel Najmi,
LevaData

Originally, LevaData's focus was primarily on cost optimization and new product introduction acceleration, says Chief Product Officer Adeel Najmi. Over time, he adds, a third focus emerged as a logical extension, as much of the required data was already present on LevaData's platform: supply risk management.

And the Covid-19 pandemic then threw a spotlight on that supply risk management capability.

"Today, there's a much greater awareness that supply chains can very quickly find themselves swamped by almost-continuous and completely unpredictable disruptive events," says Najmi. "Again and again, companies saw that if they were not well prepared to manage risks to their direct materials supply, they were much more exposed to those events."

LevaData helps to mitigate supply disruption both reactively and proactively, he explains.

Reactive mitigation is best explained with an example, says Najmi. Imagine a serious

fire or earthquake at a semiconductor plant—something easily visualized given recent high-profile examples of precisely such events. Learning of the devastating and destruction is not difficult: newsfeeds provide the information. But how should you respond?

"What we do is sift through the unstructured information in those newsfeeds using natural language processing and machine learning methods to derive structured insights about the nature, severity, and geographic and business impacts of those events," he explains. "Then, we overlay these insights onto our customers' supply chains, bills of materials, demand forecasts, and production plans, making the potential impact instantly visible. At this point, our networked platform makes it easy to connect with alternate suppliers. Our customers can reconfirm supply plans and lock in alternate supplier capacity while their competitors are still trying to figure out if and how they are affected." →

But the real emphasis, Najmi states, needs to be placed on proactive—not reactive—risk mitigation.

First, LevaData’s artificial intelligence capabilities are constantly analyzing—at an individual component level—the transactions flowing through its marketplace, as well as at a market level, looking at what is happening to lead times and prices. If a trend develops that indicates rising prices or lengthening lead times, appropriate recommendations are issued: lock in supply now, for instance, or hedge, or place long-term contracts to secure supplies at lower prices than might be obtained in the future.

Second, LevaData works to de-risk business’ supply chains from a structural perspective, looking at what components they buy and from which suppliers.

“When a new customer is onboarded onto our platform, their data is ingested, cleansed, harmonized, and enriched. Then, the AI technology starts examining it,” says Najmi. “At this point, the platform

might say: across many of your products, you buy this particular component fairly frequently. Even though volumes aren’t huge, and its price isn’t high, it is used in these high-value or critical products. But, here’s the thing: you’re single-sourcing it, and single-sourcing it from a supplier who is trending downwards on our financial health and supplier performance metrics.

“Or it might say: 100 risks were detected; based on the AI analysis, here are 10 you should prioritize. Our customers may already be aware of many of these risks, but they find it hard to prioritize which handful they need to attend to right now. And sometimes, these risks will be with items that sourcing teams aren’t really aware of, because spend volumes are on the low side. But the justification for prioritizing them is that if supply disruption occurs, the impact on production would be severe. Effectively, we’re pointing to all the risks in the supply chain and saying: this is where you need to focus.” ■

Q&A: AI-POWERED INSIGHTS



Rajesh Kalidindi
Founder and
Chief Executive



Adeel Najmi
Chief Product Officer

LevaData’s Rajesh Kalidindi and Adeel Najmi on how AI underpins LevaData’s solution.

Q: *LevaData talks a lot about artificial intelligence. What exactly does that AI deliver?*

Rajesh Kalidindi: A huge amount. AI underpins our entire integrated supply management offering. A lot of procurement system providers deliver a processing capability or a connectivity capability—linking buyers and sellers. LevaData does that, but we also do something else: we deliver recommendations and opportunities. And they’re specific, actionable recommendations and opportunities.

Q: *How, exactly?*

Adeel Najmi: In three ways. First, by analyzing data—often in real time—to get at the underlying picture. In supply markets, for instance, it could be in terms of analyzing price and lead time trends. Second, as Rajesh has said, by identifying potential actions that can be taken. Third—and this is one of the most powerful capabilities—by identifying and recommending the very best of those potential actions. All three of these stem from our AI capabilities.

Q: *Which AI capabilities, in particular? Can you be more specific? AI is a very broad field.*

Adeel Najmi: It depends on the task concerned. As Rajesh has said, AI underpins our entire offering. But in broad terms, we’re talking about techniques such as natural language processing, multi-stage neural network-powered deep learning, supervised and unsupervised learning, and decision-making leveraging an ensemble of AI models. We are using AI models for tasks such as classification, finding patterns of similarity, finding what is out of the norm, and evidence-based reasoning to decide which actions are best.



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Sourcing Excellence: LevaData Delivers Value for Bose

LevaData's solution has enabled Bose to optimize costs throughout the sourcing process, as well as deliver numerous strategic benefits.

Known globally for its high-fidelity audio products for both the consumer and professional markets, Bose Corporation—headquartered in Framingham, Massachusetts—needs little introduction.

In 2015, after moving to a contract manufacturing business model, the company realized it had lost visibility into its component and commodity spend across its product categories and supplier base. This had affected the effectiveness of its sourcing, cost optimization, and RFP processes.

Discussions with LevaData—then only one year old—duly followed, and LevaData's capabilities were judged promising. Moreover, report Bose procurement executives, there looked to be an excellent fit between Bose's view of how best to drive procurement improvements and the long-term vision being pursued by LevaData.

A contract was duly signed in August 2016 and implementation began in October. The plan: capture, clean and validate bills-of-material from both Bose's product life cycle management system and the company's contract manufacturers,

then upload this information onto the LevaData cloud.

One early lesson, say Bose procurement executives, is that as one of LevaData's first customers, there was little in the way of precedent or prior knowledge about the best way to do this. Accordingly, Bose worked alongside LevaData as a strategic partner to help develop and document an implementation process and methodology.

LevaData's cost-optimisation capabilities were the first part of the implementation to go 'live' in March 2017, less than six months after implementation began. LevaData's sourcing capabilities followed in September 2017.

Today, report Bose procurement executives, the cost-optimization capability and LevaData's associated AI-powered spend management and market intelligence capabilities serve as cornerstones of its commodity management process, helping to drive the company's cost-reduction programs. Meanwhile, LevaData's sourcing solution has automated Bose's quoting process with suppliers and provides equally important strategic benefits. ■

ABOUT OUR PARTNER

LevaData's integrated, AI-powered supply management software platform transforms direct material sourcing, mitigates risks, and accelerates new product development. We power the smartest supply chains in the world by constantly analyzing business objectives against real-time market activity and community intelligence. We are trusted to deliver improved margins, control risks, generate new product velocity, and achieve multi-tier supplier engagement with purpose-built tools for quick collaboration and decisive actions. LevaData creates a competitive advantage with transformational and predictive insights. Customers include large and complex enterprise companies, as well as small- and medium-sized OEMs seeking to achieve best-in-class supply management practices.

www.levadata.com



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