Resilience Roadmap 2028

Pioneering the way towards a resilient supply chain

Whitepaper by The Procurement Initiative

In association with

University of St.Gallen
Institute of Supply Chain Management

H&Z

procurementinitiative.org

INTRODUCTION

Soaring on the tailwinds of the black swans

Our current business reality resembles a river, running fast and forming dynamic, ever-changing rapids that are sometimes predictable and other times not. And just like water adapts to the transforming riverbed, companies nowadays must adapt to the landscape of manifold risks and develop strategies to create a regenerative, versatile, and resilient structure within their supply chain that allows them to go with the flow.

Recent years impressively demonstrated that global supply chains are exposed to all kinds of risks. However, the stakes have risen. For example, over 90% of all German manufacturing companies in the mechanical, electrical, and metal industry (MEM) experienced some kind of material shortage in March 2022, resulting in devastating economic damage.

Resilience emerging from a perfect storm

Of course, the war in Ukraine was and is historically unprecedented and we don't know what the future will hold. Nevertheless, companies must not fall back into old patterns of stockpiling and obsolescence. Instead, they need to go beyond just managing disruptions and proactively foster supply chain robustness.

Consequently, we hear more companies questioning how to spot emerging risks in a constantly changing business environment. Which paths do organizations need to take to successfully navigate their business through future crises?

Research approach

Our philosophy is to combine practice from the hardcore day-to-day CPO experience with research from the renowned University of St.Gallen. Together, we conducted a series of three deep dives with (six) senior procurement executives across various European industries to better understand what companies are doing today, where they envision themselves in five years, and how they want to achieve this vision.

They all agree: resilience is reshaping the competitive priorities in procurement and in their companies. As we see it, increasing uncertainty and dynamics in today's environment, combined with strong outsourcing tendencies, are elevating supply-side resilience to a strategic level. Ignoring these structural shifts might lead to a sustained loss of competitive advantage.

A systematic approach to building resilience based on transparency, collaboration, and flexibility in sourcing is needed. Procurement must excel at ensuring 360-degree resilience based on a regular review of commodity and raw material price development and availabilities, supplier capacities, possible substitutes, regulatory frameworks, and geopolitical tendencies.

There is no shortcut to resilience. Get inspired by our supply chain resilience roadmap for 2028 and weather the stormy conditions ahead.

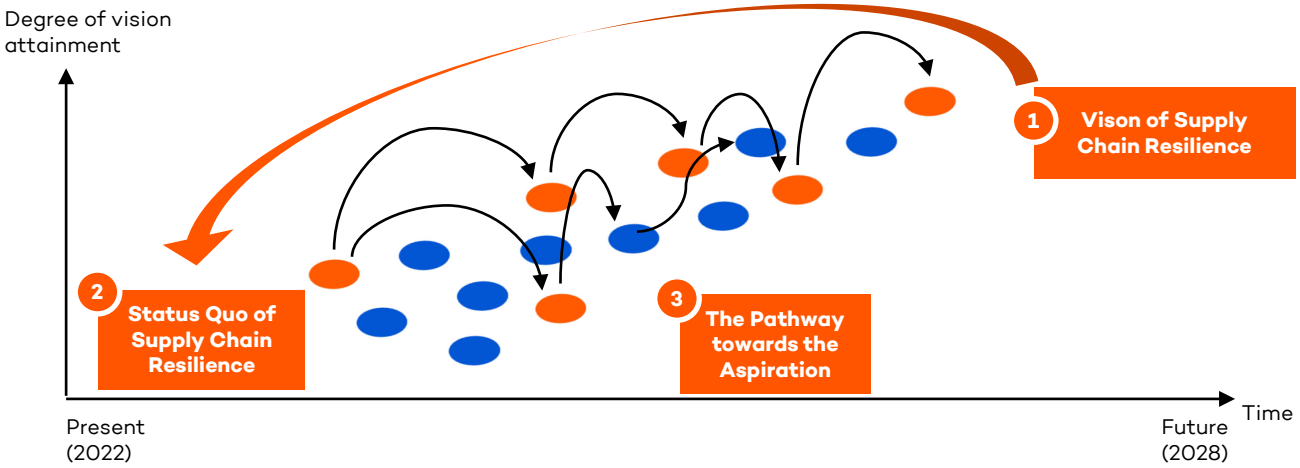
BACKCASTING – CREATING A STRATEGIC ROADMAP FROM THE FUTURE

Shaping the future, the way you want it

To create our resilience roadmap, we build on the methodological conceptions of the backcasting method.[2] Backcasting from a vision can be understood as a game of chess – we cannot precisely define what success will look like, but we know the principles of checkmate. Therefore, we play a strategic game, always keeping our vision of future success in mind. The approach typically follows a specific set of actions true to the motto "think in leaps, act in steps".[3] Figure 1 illustrates the overall process of the backcasting approach and our workshop series.

Exhibit 1

Overview of the backcasting approach



In a nutshell, the backcasting approach[4,5] works backward from a desired future by defining the vision first. This top-down approach helps detach from current pain points, problems, and thought structures by focusing on a desired but unclear future situation. After establishing a vision of such a desirable future in our first workshop, we worked backward to describe the status quo. In this second workshop, we defined obstacles and pain points for the current state preventing companies from implementing the vision. In the third and last workshop, we worked out tangible actions and a pathway to close the gap to achieve the desired situation.

1 **Trend assessment**	Identify trends and normative beliefs based on PESTEL[6] creating prospects/challenges in the future.	WS1
2 **Future vision**	Develop and derive a future resilience vision considering the trends and normative beliefs.	
3 **Current state**	Define the reference scenario based on pain points and missing capabilities in the status quo.	WS2
4 **Actions**	Set out alternative solutions and possible ways to close the gap to attain the desired future state.	WS3
5 **Pathway**	Develop and discover a clear pathway building on pre-defined actions and solution approaches.	

1. TREND ASSESSMENT – A VISION LED BY NORMATIVE BELIEFS

The trend is your friend – a wake-up call for resilience

While trends[6] can generate new challenges, they can be your friend, too. Following the PESTEL-framework[7], we identified drivers for change in six dimensions:

The political dimension is driven by trends such as protectionism. Import tariffs or subsidies for local production will increase the influence of politics on global trade and on supply chains. In this context, supranationalism and increasing regionalization driven by trade agreements (e.g., EU, USMCA, RCEP) are expected to boost the substitution of global suppliers with local suppliers.

Political
- Protectionism
- Supra-nationalism
- Ally-Shoring

The economic dimension entails a shift in global trade due to the economic growth of emerging markets, which ultimately leads to a change in demand and the design of supply chain networks (e.g., chip production in India). In addition, elevated inflation levels create an economic impact factor that requires new capabilities and organizational processes.

Economic
- Global trade shift
- Inflation

The social dimension incorporates key trends like demographic change. An aging population drives labor shortages and challenges recruiting and retaining highly skilled employees. In addition, the increasing requirements of a new generation towards employers and the need for purpose in the workplace will lead to a shift in demand for specific role profiles (e.g., resilience buyers).

Social
- Demographic change
- Demand shifts for jobs

The technological dimension is characterized by advancements in technologies of the fourth industrial revolution: Powered by AI, IoT, robotics, and 3D printing; the digital transformation will cut the labor share in output and, at the same time, reduce global trade as products may be printed on the spot. Furthermore, we assume that companies continue to put in all of their efforts to produce and store clean energy, which in turn will make regional production more attractive again.

Technological
- Digital trans-formation
- Automation
- Renewable energy

The environmental dimension is driven by the threat of resource scarcity. As natural resources such as water, oil, and rare earths become scarcer, the likelihood of disruptions increases. At the same time, climate change will accelerate the risk of natural disasters such as hurricanes or volcanic eruptions. With most greenhouse gases stemming from Scope-3 emissions in the n-tier, companies must develop a strategy to keep supply chains robust in the face of environmental concerns.

Environmental
- Climate change
- Resource scarcity

The legal dimension continues to be driven by trends such as intellectual property rights and data protection to reduce the increasing risk posed by cyberattacks (e.g., ransomware). Moreover, social and environmental regulations (e.g., German Supply Chain Act, EU Taxonomy) will increasingly influence the design (e.g., footprint) and management (e.g., visibility) of supply chains from the raw material supplier to the end customer.

Legal
- Intellectual property law
- ESG regulations

2. FUTURE VISION – TOWARDS A RESILIENT SUPPLY CHAIN

Determining the 360° resilience goal

The underlying risk drivers are a complex cocktail of PESTEL factors causing headaches for most companies. Fed by the identified PESTEL trends, we developed a systematic 360-degree vision of a robust, recoverable, and adaptive supply chain.

Transparency

Our desired future is defined by full supply chain transparency throughout all levels of the supplier network. This provides us with real-time awareness of risks and potential shortages and helps identify bottlenecks and critical inputs.

Supplier collaboration

With interorganizational collaboration in the form of strategic partnerships and collaborative forecasting models, we are gaining insights into our suppliers' workflows at their external locations, taking complexity and uncertainties out of the system.

Cross-functional engagement

We thrive for intra-organizational collaboration and early involvement in a product's lifecycle with joint, future-securing objectives and key results to mitigate risks and facilitate cross-functional decision-making.

Digital tools

We utilize digital mapping and risk-tracking tools to regularly review prices, availabilities, supplier capacities to detect weak spots in our supply chain.

Flexibility in sourcing

We maximize available options, preferably in multiple countries, and validate alternative suppliers early on, giving us the upper hand in situations of resource scarcity and supply bottlenecks.

Employees

We have a dedicated team of "resilience" experts with E2E supply chain knowledge building bridges between procurement and business units.

Sourcing decisions

We balance sourcing decisions by factoring all kinds of risk into the equation, modeling different footprint and what-if (not) scenarios.

"Companies must be alert to longstanding and nascent risks in their supply chains. That is why we work with our portfolio companies to help manage their supply chain risks and establish resilient procurement frameworks."

Helmut Safar, Head of Global Procurement, Triton Partners

"Up to now, our job has been to manage and reduce costs. But we are entering a phase where the relationship with our suppliers needs to be improved and even go beyond cost management. Strategic partnerships are becoming essential to increase the resilience of the supply chain."

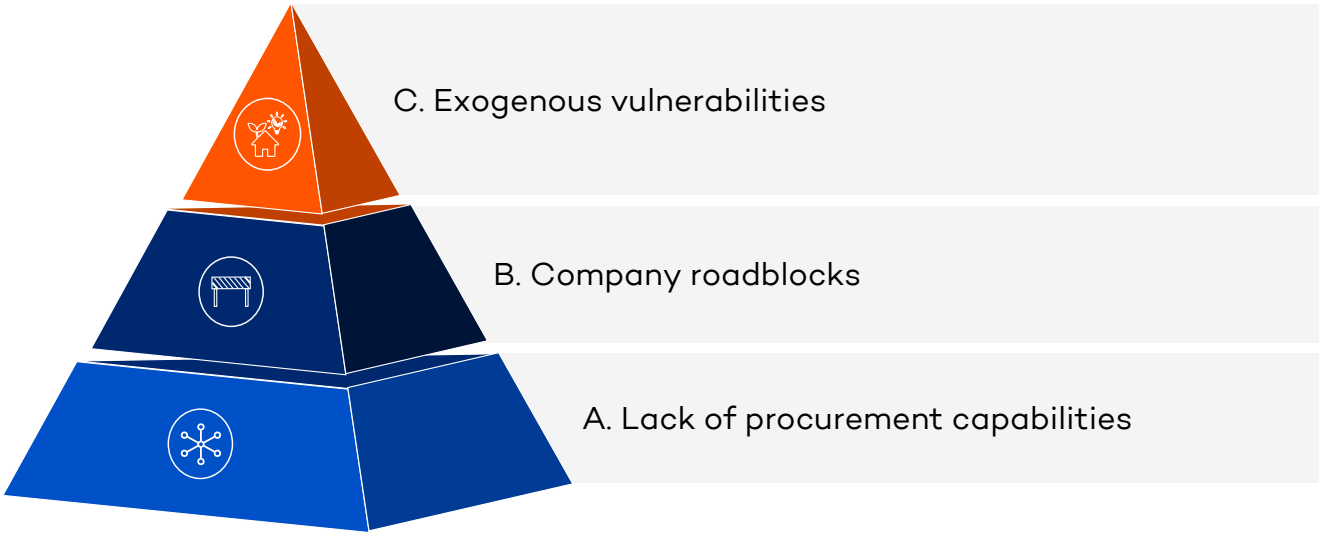
Simon Saba, Vice President Global Purchasing, Knorr-Bremse

3. CURRENT STATE – THE STATUS QUO ACCOMPANIED BY A PLETHORA OF PAIN POINTS

Following the vision development, we analyzed the current state of supply chain resilience. The fundamental challenges in the status quo (listed in exhibit 2 below) create susceptibility to risk. Our conversations with leading CPOs helped us consolidate critical pain points and their root causes within these major topics.

Exhibit 2

Overview of challenges in the status quo



A. Lack of procurement capabilities

We identified some hesitation among suppliers to collaborate as part of the transparency challenge, possibly due to a lack of trust in their customers. This lack of collaboration hinders the ability to effectively coordinate and consolidate global supply chains. On the buying side, we also noticed the use of various systems and tools, which can create interface issues and prevent the easy exchange of information within the supply chain.

Requirements and expectations towards Tier-1 suppliers have grown immensely. And somehow, those partners seem to do magic within this susceptible system to manage supplies and costs. We miss the true collaborative approach that would drive more balanced and possibly better results and instill trust for future actions.

During the last two years of fire-fighting mode, people learnt to install alternative supply chain routes and partners. However, the bigger task of taking complexity out of the product portfolio and thus of the supply chain is still ongoing. It is difficult for procurement to make a strong argument for investing in resilient supply chains if there is a lack of resilience KPIs that track the economic impact of risk, as well as a lack of effective tools for monitoring risk and mapping supply chains.

"Every company should take a strategic look at its single source base and its exposure to it. Analyze how much spend and revenue is at risk. Once identified Procurement together with R&D need to make this a priority in order to reduce this business threat to the degree possible."

Frederik Spiekermann, Group Director Procurement

3. CURRENT STATE – THE STATUS QUO ACCOMPANIED BY A PLETHORA OF PAIN POINTS

B. Company roadblocks

This category is characterized by pain points such as the war for talent and pressure on employees. Companies are placed in a chokehold between the low attractiveness of the procurement function (compared to others), the lack of digital natives within the organization, and an overall aging population.

At the same time, cross-functional engagement to work on resilience is not strong enough yet. We observe a significant lack of ownership and responsibility within organizations. With the historically anchored concept of procurement as a support function, quality risks remain of higher priority than supply risks.

On top of that, incentives are not aligned among the various functions leading to competition instead of collaboration. From a financial standpoint, increasing resilience and, thereby long-term savings are ironically considered an unnecessary waste of financial resources.

C. Exogenous vulnerabilities

The top of the pyramid consists of pain points external to the company. We are looking at geopolitical risks, creating uncertainty in global supply chains, contributing to an inflationary environment, and soaring commodity prices.

There is still no industry-wide collaboration to solve shortages (e.g., semiconductors). Next to material dependency, political decisions and regulations heavily impact the operational activities of countries. Our reliance on (far) eastern low-cost production puts us helplessly at the mercy of policymakers whose decisions can paralyze entire industries (e.g., the closure of the port in Shanghai during COVID)

These tensions further advance the already inflationary environment, and the organizations don't have the knowledge and experience to deal with it. Even worse, performance is still measured exclusively in terms of cost savings with no consideration of creating financial, tangible value beyond a short-sighted gain.

"One thing is risks, sudden events, but the other thing is trends, and when does a trend become something you have to respond to? That requires forward-looking development. But in a company, especially in larger corporations, there are so many constraints that the procurement department would not dare to say: 'I see that we need more batteries next year'."

Dieter Dehoorne, Group Vice President & CPO, Vestas

"Let's take the example of semiconductors: I would love to have sources in Europe. But unfortunately, almost all key manufacturing sites are located in Asia, a few in Northern America. I would prefer to look for regional (European) sources, but in some areas, you simply can't find a supplier base with which to start a collaboration."

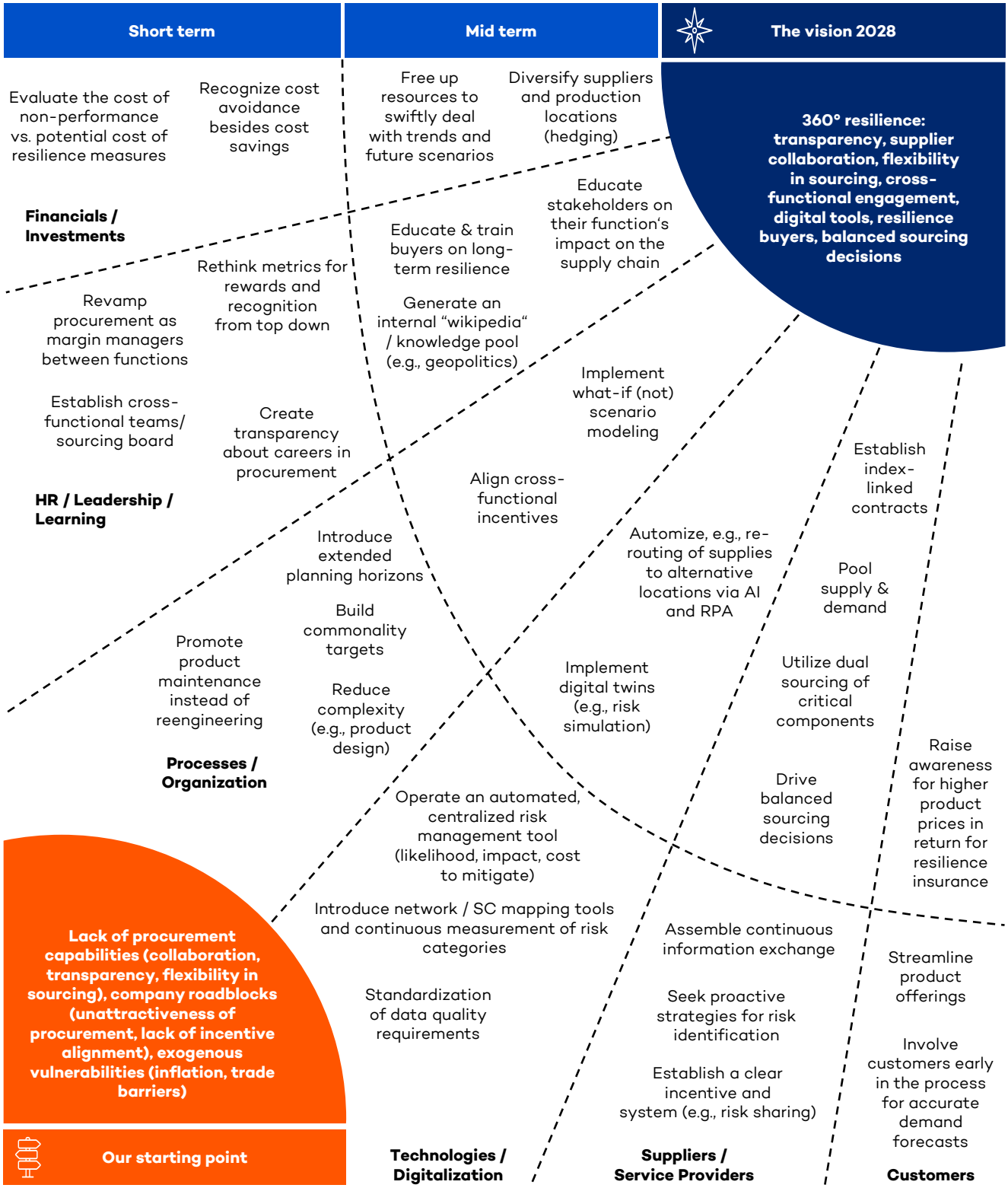
Claas Radtke, Executive Vice President, Weidmüller Group

"We've experienced inflationary pressures before, but this time we face an extended period of broad inflation. So, how can we measure success in terms of material cost reduction? We are used to being evaluated based on cost savings. Cost avoidance, at least in our industry, is not measured or evaluated similarly. In this new situation, it should be recognized that better-than-market cost avoidance creates competitive advantages."

Niklas Hamnstedt, Senior Vice President Global Purchasing, Magna International

4. ACTION – THE RESILIENCE ROADMAP

We set the vision and defined the status quo, but it's not enough to stare up the steps – we must step up the stairs. Our roadmap represents an extensive course of action helping companies to set sail for resilience and materialize the desired vision. Depending on the ambition level of your organization, the listed initiatives serve as food for thought to set a realistic ambition level and translate this into a viable action pathway. For a detailed explanation of each action, see Appendix A1.



SECURING THE ROADMAP – ACTIONABLE RECOMMENDATIONS

Go and make procurement shine

Securing supply chains and becoming more resilient has never been as en-vogue as it is today. That's exactly the opportunity for procurement to turn the tide and make the last non-believer understand that most decisions taken in the company have an immediate impact on the supply chain.

Subsequently, to create and orchestrate the most resilient, sustainable, and competitive supply chain, procurement must be in the driver's seat and take that kind of responsibility. A more strategic and long-term approach with the suppliers, as well as installing the right competencies in the organization, can help to master the challenge. Admittedly, in hindsight, it is easier to see things clearer. No one could have prognosed what the world has seen in the last few years, resulting in such turmoil in availabilities that we took so much for granted.

Role modeling new leadership instead of holding on to outdated behavior

There is hope for change: we found that many supply issues relate to behavior rather than coming as a total surprise:

First, a change in power is observable when some industries gain importance and volume, i.e., semiconductors, which demand less confrontational behavior.

Second, if we only used the trend as our friend, we could have installed capacities or alternatives way earlier. But unfortunately, although the trend or risk is known, investments will often not be made because they would go against the executives' traditional KPIs in the current and following quarters.

Third, we have also learned to reward the all-time crisis superheroes (and we are not talking about those who have relentlessly fought to repair or keep supply chains running during the various crises) more than those who show long-term perspective and possibly install sensible "insurances". So, we miss strategic thinking and proactive supply chain management.

Fourth, by using the same traditional productivity metrics for all categories, we might not see efforts in fighting non-performance or nurturing technology progress (especially in the area of CO2 reduction and responsible business).

Consequently, many supply chain issues could be avoided by role modeling a different way of working and stopping the blame game. Even better: by creating a culture of empowerment and learning and by keeping the company's north star in plain sight, people will excel in creating and orchestrating stable supply networks.

SECURING THE ROADMAP – ACTIONABLE RECOMMENDATIONS

Going beyond classical sourcing criteria towards modeling long term impact

In addition to behavioral change, it is important in daily decision-making to consider the potential costs of not investing in resilience or sustainability in the short term, as well as the potential value that such investments might bring in the long run. This requires going beyond your traditional sourcing decision criteria.

There is great value in modeling long-term impact together with your business stakeholders. Therefore, procurement needs to develop the ability to show transparent future scenarios based on sound data, a good rationale, and a story. Introducing outcome-based planning (starting from the long term and breaking it down) can be a suitable approach to show the direction, get the buy-in, and shape corporate strategy.

Besides going beyond classical sourcing criteria, there is no easy way to achieve transparency. It is about going through all suppliers in the n-tier chain in detail and mapping the networks, hopefully with an (existing) tool that can handle changes, not ending up in an inflexible (Excel) system.

The upside is enormous: any type of waste and unnecessary complexity will be transparent, contributing highly to more resilience, possibly even lower cost, and a more sustainable business.

In a nutshell: Three things you can do now

1. Fight against pushbacks

Invest in adequate resilience capabilities

2. Don't play the power game

Your ace is collaboration

3. Sell a compelling story to your CEO

Show the interdependencies and be the driver for transformation

ACKNOWLEDGMENTS

There is no denying that working on a roadmap is a challenging undertaking due to the different ambition levels of organizations and their varying resilience pain points. Most importantly, we want to thank our contributors for demonstrating how they turn their supply resilience ambition into action.

With that in mind, we would like to thank our contributing CPOs for sharing their insights: Marielle Beyer, Dieter Dehoorne, Niklas Hamnstedt, Claas Radtke, Simon Saba, Helmut Safar, Frederik Spiekermann. Their views are personal and do not represent those of the companies they are affiliated with.

"Resilience and adaptability are such critical skills in this volatile and fast changing environment and for some folks it's proving really difficult and stressful to deal with the fast pace of change and huge amount of volatility. As procurement leaders we must focus on the mental health of our people and support our talents with effective VACC (visionary, architect, coach and catalyst) leadership."

Marielle Beyer, Head of Global Procurement, Roche

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ABOUT THE PROCUREMENT INITIATIVE

The Procurement Initiative is a modern think tank and a platform for people who want to shape the future of procurement. We live in a world where uncertainty and crises are the new normal. And that is exactly why we believe in a new purpose of procurement: to take full responsibility for creating and orchestrating global supply chains that positively impact the needs for viable and sustainable businesses, a prosperous society, and a healthy planet alike.

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APPENDIX

A1: Summary of workshop results covering the vision, status quo, and pathway

Status Quo | **The pathway (measures and initiatives)** | **Vision 2028**

Lack of Procurement capabilities

Lack of visibility (e.g. sub-suppliers)

- Procurement: Create rewarding system for Tier-n suppliers to seek ideas or identify non-compliance on their side
- Procurement: Get visibility trough Tier-1 supplier surveys
- Procurement: Engage with and use third-party certifications / pledges (e.g. Fair Labor Association
- Procurement: Track chain of custody via embedded tags, serialization
- Procurement: Network / SC mapping via digital tools (e.g. Prewave)
- Procurement: Network assessment (Continuous measurement of risk inherent in the network design)
- Procurement: Monitoring, e.g. control tower solution including third-party risk monitoring services (e.g. Resilinc, RiskMethods, Everstream, or Interos)
- Procurement: Regular interchange of information among suppliers, customers, etc.
- Procurement: Digital twin to simulate and scenario model the supply chain for risks
- Procurement: Autonomous execution via AI / RPA (e.g. dynamically re-routing supplies to alternative locations)
- Company: Reduce information silos within the company and between departments
- Company: Setting up a company-wide risk management process (recurring, linked cross-functionally) to define risks to the supply chain (likelihood, impact, cost to mitigate)
- Company: Tier-n mapping used as input for sourcing decisions

Lack of (approaches to) risk measurement and operationalization

- Procurement: Create an automated aggregated measure / tool for Resilience Risk
- Procurement: Increase capabilities related to raw materials, energy cost, inflation, and how to protect the bottom-line of the company through different hedging strategies. Requires other sets of competences, including departments such as finance, treasury, ...
- Procurement: Find possibilities for automated risk updates (internal and external sources
- Procurement: Find an approach with automated risk segmentation that does not drown the organization in all kinds of risk-related investigations but makes us work only with relevant risks (efficient distribution of limited resources)
- Procurement: weigh potential more cost of resilience measures against cost caused by non-performance
- Procurement: Use global workforce to determine risks and its mitigation; closeness to market/suppliers helps
- Procurement: Seek pro-active inputs from the tier 1 level in an automated way to identify risks on the supplier side
- Company: Define Operations inputs to resilience risk apart from supply accuracy
- Company: Start evaluating/price-tagging and showing "non-performance", i.e., single supplier for all car models, capability lack of suppliers, air-freighting parts, non-performant suppliers

Lack of flexibility in sourcing (e.g. single sources)

- Procurement: Incorporate resilience into the different commodity strategies and use resilience as one of the decision parameters
- Procurement: Dual source for all parts that seem critical
- Procurement: Modularity, reduce complexity
- Procurement: Reward "balanced" sourcing decisions
- Procurement: Supply contracts flexibility (e.g., modify easier to changes in specifications, quantities, and terms
- Procurement: Use supplies in multiple finished goods
- Procurement: Risk rating of complete supply chain with regard to backup solutions (i.e., dual sourcing)
- Company: Resource and cost allocation for dual source activities
- Company: Joint target for engineering and procurement to remove a specific number of single sources p.a.

Lack of demand and supply (e.g. unpredictabilities)

- Procurement: Postponement, Demand and supply pooling
- Procurement: Create visibility of demand down to raw material levels linked to available capacities in the market (where do the materials come from and where are the capacities located in the world?)
- Procurement: What-if-scenarios on different volumes, footprints, etc. as baseline for the procurement strategy linked to each scenario
- Procurement: What-if-scenario simulations to make us more proactive
- Procurement: Fully integrated supply chain information flow through all tiers (improved EDI-type)
- Company: Distinguish between what the customer really wants/needs and streamline the product offer, i.e. complexity reduction, freeze of changes in schedule for supplier
- Company: Forecasting: Extended planning horizons from OEMs and down the tiers
- Company: Fully integrate Production and supply planning
- Company: free up money, resources to swiftly deal with trends, (i.e. shifting or adding suppliers)

Lack of logistical flexibility regarding shipments (e.g. capacity availability)

- Procurement: Partner up with global logistic provider to secure flexibility needed (shifting from one region to another)
- Procurement: Broadly distribute key inputs in a decentralized network
- Procurement: Sophisticated inventory management systems that regularly compute safety stock / cycle stock
- Procurement: Create flexibility in network design (e.g. quickly reallocate orders to alternate suppliers, reallocate jobs between different production units / quickly change the routing and mode of transportation for outbound shipments
- Procurement: Fully integrated supply chain information flow including logistic providers (improved EDI-type)
- Company: Seek new ways to collaborate with freight providers (flexibility among same provider)
- Company: Create "dual sourcing" framework for logistics to avoid rush/expensive solutions chosen (avoid spot freight cannibalization, more proactive agreements)

Company roadblocks

Lack of ownership concerning roles and responsibilities within the company / organization

- Procurement: Dedicated resilience/ sustainability resources with high influence for clear allocation of responsibilities
- Procurement: Educate and train Resilience "buyers", no operational activities, focus on long-term resilience
- Procurement: Develop clear set of R&R between procurement and other internal stakeholders
- Procurement: Incentivize supply chain & manufacturing function to talk to suppliers and understand operational pain points, not everything has to go through procurement
- Company: Set cross-functional targets to create a sense of urgency and make sure ownership is divided among relevant parts of the organization (it's not a one-man show)
- Company: Holistik risk map broken down into the different functions within a company (joint targets that each function pays into)
- Company: Cross-functional teams to consolidate risk-related issues
- Company: Big lack of leadership from top to down. Incentivizing the right things, working together ...

SC complexity (e.g., product portfolio, number of unique SKUs)

- Procurement: Integrate weighted supply chain complexity measure into the sourcing process (reduced complexity is positive)
- Procurement: see above, measures on complexity reduction, what does the customer really need?
- Procurement: Sourcing strategies that leverage the volumes/scale of economy
- Procurement: Monitor supply base development and set reduction targets for supplier consolidation
- Company: Set re-use/carry over/commonality targets for each project
- Company: Promote product maintenance within the engineering community / charge each team to manage their tail pn's
- Company: Platforming as base for new product development (NPD)
- Company: Modularization is not leading to part number carry over and scale Set commonality targets on part number levels to reduce complexity
- Company: Understand how the race for technology impacts complexity and thereby resilience
- Company: Set elementary rules on forecasting to drive stability in volatile times

Misalignment of functions (e.g. different incentives)

- Procurement: Common targets between procurement and internal stakeholders
- Procurement: Break down silos and educate stakeholders on how their function impacts the supply chain
- Procurement: Margin manager between different functions
- Company: Strategic alignment, building a resilience strategy, breaking it down into business units
- Company: Shared targets/ align incentives (e.g. dual sourcing
- Company: Internal alignment: Build incentives for professionals to not only consider risk in the sourcing process
- Company: Engineering as heroes for new products, no ties to procurement/ supply chain --> Incentives / rewarding for Engineering to reduce complexity, consolidating the supply base
- Company: Leadership (cleaning up historical and future product developments)

Lack of engagement and knowledge concerning resilience within the company

- Procurement: Inform areas outside of procurement on risks we see from the supply base that becomes their responsibility
- Procurement: Train data scientists
- Procurement: Find ways to monetarily quantify risks and opportunity
- Procurement: Always ensure a cross-functional approach to resilience through sourcing boards etc.
- Company: Stop seeing supply of parts a "purchasing only" item -- training and communication
- Company: Change of perspective (top management: sales-driven, procurement: supply driven
- Company: Everyone makes decisions that impact the supply chain. Procurement needs to deal with it
- Company: Need a gate keeper for the supply chain
- Company: Raise awareness of the connection between things happening in the world (natural cat..., geopolitical unrest ...) and the supply security
- Company: Train company-wide

Lack of financial support to invest in resilience within the company

- Procurement: Tell a story, show the impact of risk for the bottom line to the CEO
- Procurement: Use scenario planning to show the consequences of risks in the future (e.g. climate induced risks will only increase in the future, see UN emission gap report
- Procurement: Find ways to monetarily quantify risks and opportunities
- Procurement: Better tracking and reporting of downtime / risk costs consolidate all costs resulting from poor procurement practices and compare to investment costs to avoid these risks
- Company: Value at risk (prioritize spend to sales risk if categories)
- Company: Find better investment payback calculations that includes downside risk as input
- Company: CEO should convince investors to accept resilience as a new currency
- Company: Start weighing cost of non-performance/risk versus spending money on increasing resilience
- Company: Risk-adjusted returns

Lack of a clearly defined behavior to achieve resilience goals (e.g. Resilience Roadmap)

- Procurement: Introduce KPI's around the capability to maintain a healthy flow (build the product)
- Procurement: No flow -- no revenue/no profit/no growth, etc.
- Procurement: Role model and reward behavior towards resilience -- of course, in balance with cost, sustainability
- Procurement: Map organizational and functional capabilities needs & gaps linked to resilience and put plans in motion to close the gaps
- Company: tie resilience into the company bonus scheme, besides cost and sustainability
- Company: Management walking the talk (e.g. in the sourcing decision making)
- Company: Cross-functional roadmap of actions established

External factors

Lack of international coordination regarding regulation (e.g. global trade rule book)

- Procurement: Training and awareness of existing and coming regulations work closer with government relations people regulations from customers must be harmonized as well
- Procurement: Internal Wikipedia of existing and upcoming regulations (e.g. Supply Chain Law, Uyghur Labor Act, etc.)
- Company: Push for more lobbying for free trade
- Company: Push for harmonization, horizontal collaboration within and between verticals to set standards
- Company: More lobbying with governments around the world to educated on potential consequences of decisions they are about to make on SC in the countries they represent
- Company: Convince regulators (EU level), associations, companies ... to push for maximum free trade

Increase in geopolitical risks (e.g., wars, trade regulations, tariff conflicts)

- Procurement: Back to the roots of regional supply security for better resilience/ sustainability/ maintaining competitive edge in Europe
- Procurement: Develop more regionalized supply chains instead of global (reduce dependency on China, reduce ESG risks)
- Procurement: Internal Wikipedia / risk dashboard of each sourced country, inclusion as A-D criteria in sourcing
- Procurement: Higher focus on this risk in new awards
- Procurement: Re-shoring Initiate discussion with customers (if they want safe and local supply chain they will face higher cost and therefore higher prices)
- Procurement: Re-weighing geo-polit. risks in the sourcing model
- Company: Discuss known knowns and unknowns on a board level and implications for the company
- Company: Include external perspectives / outside opinions (e.g., geopolitical experts, politics, governments, NGOs, etc.)
- Company: government-relation teams
- Company: Be clear and precise on the scope of risks that need to be mitigated. Should we expect a Taiwan war? Does our company focus on grey rhinos or black swans?
- Company: Local for local as fundamental approach for all functions

Rise in inflation (e.g., shortages and price increases)

- Procurement: Develop E2E cost reduction roadmap with suppliers across the value chain
- Procurement: Procurement participating in a lot of sales meetings to help sales drive the dialogue with customers, customers witness indices going down and wonder why costs aren't decreasing simultaneously)
- Procurement: Develop financial capabilities on indexing, hedging, financial mitigations
- Procurement: Make sure all understand how Procurement contracts are linked to sales contracts and offer back-to-back protection (index-linked contracts, how does this impact our margins)
- Procurement: Raise internal capability of raw material management/ visibility
- Procurement: Work much closer with suppliers to mitigate cost increases, incl. tackling waste in the system
- Procurement: Clearer KPI set to distinguish better-than-market performance, own performance vs. the market
- Procurement: Secure more market / index data to compare performance
- Procurement: Get credit on prevention instead of action
- Company: Close collaboration within the company and externally (from supplier to customer) --> as inflation changes, company needs to continuously adapt to new circumstances (today told the customer that prices increase by x, tomorrow by y, etc.)
- Company: Procurement and company cannot save itself out of a crisis through cost-cutting only, prices need to increase to end customer
- Company: Procurement to train Sales organization to be able to increase prices
- Company: Increased collaboration between sales and purchasing to address the topic correctly and fact-based with customers
- Company: Long term partnerships are needed to increase resilience we thrive in a VUCA world, drop the short-term thinking
- Company: Avoidances as real performance and not "funny money". good purchasing performance includes avoiding raw material increases with facts, figures and negotiation skills from tracking to performance measurement and relevance

Vision 2028: The vision of a resilient supply chain in the face of emerging trends / normative beliefs