# Re-optimize supply chains in ever-increasingly volatile environments

Applied Value Knowledge
Cost Efficiency

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By: Donald Bly, Axel De Geer, and Gustaf Persson

# Introduction

Markets are becoming increasingly volatile due to a long list of global factors, such as the current health pandemic, climate change, politics and tariffs/trade wars. These all cause significant supply chain issues and disruptions resulting in changing lead times, supply shortages, and financial impact both internally and externally at suppliers.

As an example, in 2011 an earthquake outside Fukushima, Japan caused the world's sole supplier of the pigment Xirallic to shut down resulting in cars of certain shades not being produced. Scenarios like this can now be found globally in multiple industries, indicating that companies must adapt and take proactive measures, rather than reacting and merely tactically fighting disruptions.

Supply chain and sourcing have been core competencies of Applied Value for more than 20 years; our methodologies enhance productivity, advancement, automation, and intelligence. This report provides an overview of how to monitor, manage, and act on quantified risk exposure and impact throughout the value chain. It will cover key short- and long-term levers to mitigate the negative impact related to increased volatility and disruptions.

# Manage your Supply Chain proactively

The broad supply issues shaped by many global tariffs introduced in 2018 and 2019 provided companies with an excellent opportunity to build the methodologies, processes and tools needed to become more responsive to supply chain disruptions; however, it seems few companies learned their lesson and are now struggling to fight off the impacts of the current health pandemic.

Organizations must adapt and pre-emptively act in volatile situations. For every segment, the purchasing and supply chain organizations should be monitoring key market and industry changes to examine impact in real time. Applied Value proposes three activities supporting this process. Develop key performance indicators, implement an impact assessment model and establish a framework for prioritizing categories.

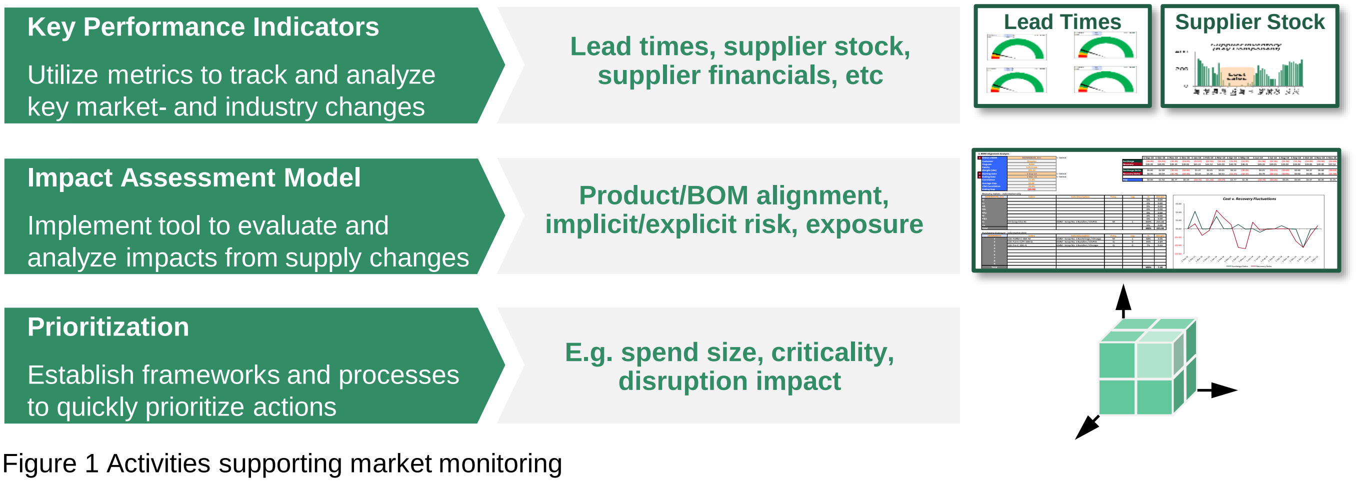


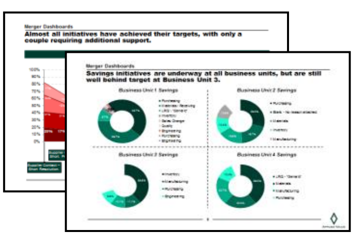

Figure 1 Activities supporting market monitoring

- **Key Performance Indicators.** Setup and monitor KPIs including commodities, raw material cost drivers, supply stocks, lead times and inventory levels to evaluate when/where issues may arise. This enables companies to gain insights into developments affecting their business and allows them to form more educated decisions and becoming more responsive.
- **Impact Assessment Model.** Establish a methodology to quantity impact at a supplier, part, category, region, BU, and ultimately finished product level. The result of analyzing impacts will highlight the need to employ strategies like renegotiating contracts, addressing shortages, evaluating supplier financial viability to re-establish the supply base/value chain. These three levers are vital for enabling companies to work proactively to secure supply and maintain suppliers.
- **Prioritization.** The identified supply risks and opportunities must be prioritized to redirect focus to actions requiring immediate attention. Prioritization frameworks include spend size/scale, business-critical aspects, and impact / risk exposure

These activities should feed into a supply chain dashboard to constitute a monitoring tool that businesses can use to easily track changes and quantify impact in real time. The analytical capabilities will not only allow companies to become more responsive in the short-term, but also aid in developing long-term strategies to hedge against future market volatilities

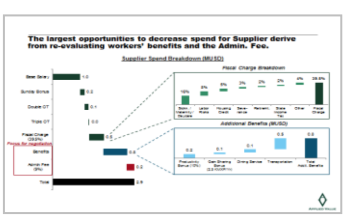
## Example dashboard in the Automotive industry

1 *The automotive industry is managing a recession with decreasing demand*



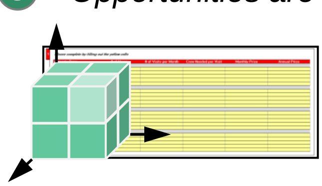
- By continuously monitoring KPIs and the market, opportunities for re-configuring the supply base can be identified. The supply chain organization must understand implications and strategies to employ to handle decreasing volumes.
- The supply base needs to be tracked and assessed as volume and suppliers fluctuate in terms of e.g. parts, inventory levels, availability of strategically critical components etc.

2 *Through improved insight into the market, opportunities can be identified and quantified*



- The levers best suited to seize the identified opportunities must be identified by assessing the business impacts of these levers, strategically and financially. The company maps identified opportunities and risks to a suited lever apt to realize the improvements, e.g. supplier renegotiation, supply base nearshoring, supplier financial viability, etc.

3 *Opportunities are condensed through prioritization and realized through actions*



- The identified initiatives for revamping the company's business need to be prioritized through a rigorous framework to condense these into alternatives suited for the firm given its resources, time, cash and supply; then they should be implemented.

# Levers for Mitigating Negative Impact across Supply Chains

From the supply chain dashboard, the company can determine the appropriate levers to pull. Applied Value recommends a set of six common levers to mitigate the negative impact across supply chains in volatile environments. Firstly, focus on quick wins stabilizing your situation in the short term by renegotiating contracts, improving cash management and addressing shortages. Secondly, establish long-term improvements by tracking supplier performances, re-evaluating the supply base and modifying category strategies. These levers are key elements in a strategy to secure and optimize supply chains in both the short and long term.

| Short-Term | | | Long-Term | | |
|---|---|---|---|---|---|
| Renegotiate Contracts / Capture Savings | Improve Cash Management | Address Shortages | Supplier Viability & Compression | Supply Base Nearshoring | Re-Evaluate Category Strategies |

Figure 3 Recommended Actions and Mitigation Levers

1. **Renegotiate Contracts / Capture Savings.** Prioritize categories, regions, suppliers for Fact-based Negotiations, quantify impact, & execute cost savings.
2. **Improve Cash Management.** Analyze all payments, payment terms, inventory & develop strategy to maximize cash on-hand.
3. **Address Shortages.** Deep dive global, regional, and local markets, identify alternative sources & quickly set up new supply chains.
4. **Supplier Viability & Compression.** Track suppliers' financial & operational performance to compress non-viable suppliers; compress suppliers, where needed.
5. **Supply Base Nearshoring.** Assess/relocate current supplier & supply chain footprints to reduce lead times & risk.
6. **Re-Evaluate Category Strategies.** Deep dive categories and re-evaluate strategies including Make vs Buy, Value Chain setup, Flexibility.

Applied Value recently conducted a survey, which included CPOs from nine industries, to gather companies' insights on Supply Chain impacts from COVID-19. The survey was highlighted with 60% more responders focused on short-term vs. longer-term objectives, suggesting a continued focus on shorter term tactical over strategic thinking. Two thirds of the respondents experienced shortages, increases in lead-times and supply shortages with about half of respondents currently deploying short-term strategies, i.e. changing transportation, increasing safety stock, and upping inventory levels to combat the supply chain disruption from COVID-19. The most apparent gaps in the respondents' strategies were the lack medium- and long-term strategies, especially initiatives related to evaluating supplier financials, becoming dual/multi-sourced and optimizing their supply base/manufacturing footprints.

These insights highlight the need for companies to direct more of their attention to long-term strategies to pre-emptively re-optimize their supply chains as needed.

# 1. Short-Term Lever: Renegotiate Contracts / Capture Savings

One area that must be addressed immediately is the renegotiation of supplier contracts. It is critical for manufacturers to constantly track and re-evaluate current supplier contracts and underlying cost drivers. As manufacturer's costs are highly driven by COGS, and they become sensitive to price increases in raw materials and/or other commodity markets. Contracts must be revisited frequently to identify savings potentials and clawback on raw materials. Typical indicators of when renegotiations are apt include fluctuating demand, when new viable alternative suppliers have been identified, and changes to the underlying cost drivers of raw materials. In common for these is that they change the set of principles which the former supplier contract was formed upon. Most companies are however poor at following up on and leveraging the opportunities arising from these changes.

Applied Value recommends Fact-Based Negotiations. It forms a process that yields both quick win savings and increased cost transparency through analyses that support negotiations and quantifies total financial- and strategic impact. The process involves four steps:


Figure 3 Fact-Based Negotiations process

Negotiations should be heavily driven by data; the more in-depth analyses a company can generate, the larger its potential leverage during supplier discussions becomes. For that reason, the Fact-Based Negotiations approach emphasizes the collection and analysis of data and stresses the need for educated decisions regarding which suppliers to renegotiate.

› **Sourcing Review.** Gather background data from your supply chain tracking tool, including changes in category volumes, fluctuating market prices, current contracts T&C:s. From this data, identify prioritized opportunities and map current supplier performances and alternative viable suppliers. Fluctuations in commodity prices can have an especially large impact on margins. Raw material costs typically make up a large % of overall COGS, typically 20-50%, and will therefore directly impact company gross margins.

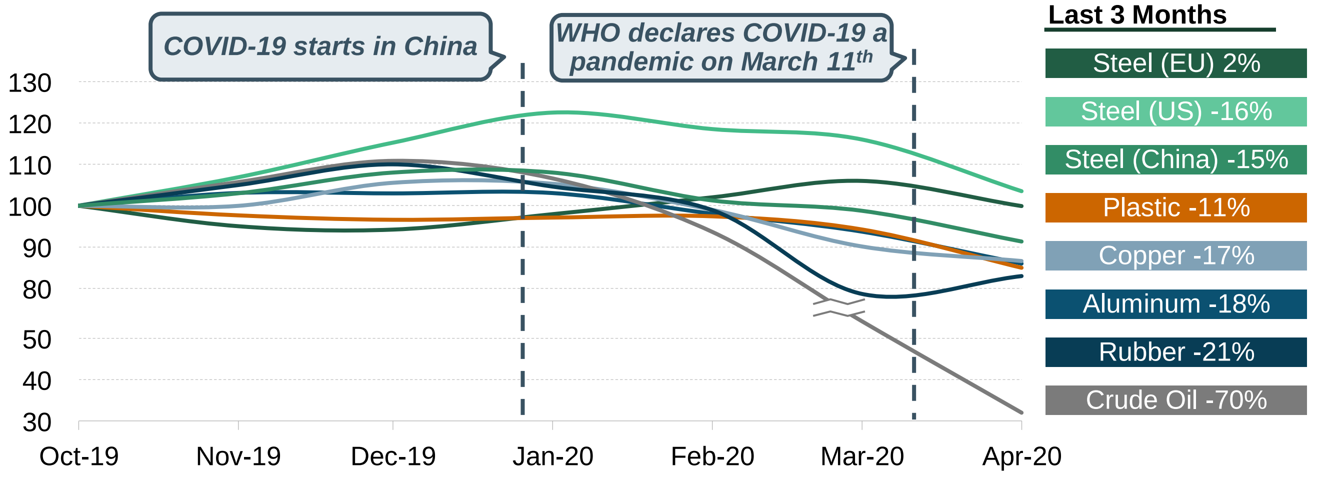



Figure 4 Raw material price development, index=100 on Oct'19 to Apr'20

With the current uncertainties in the market, timing is everything. Most raw materials are experiencing drops in pricing globally during COVID-19 which is why procurement teams should quantify cost impacts to determine where contract renegotiations with raw material suppliers may be necessary to capture savings.

› **Opportunity Specification.** Establish targets for the negotiations based on potential volume allocation, productivity development, raw material cost changes, sub-component cost changes. This produces renegotiation terms citing volatile market situations. The setting of targets should be guided from which renegotiation opportunities can capture the largest and quickest savings. In the case of raw material, use recent drops in commodity prices to gain transparency into raw materials' portion of cost to determine the effect they have on margins. This supports renegotiations of component prices through raw material clawback.

› **Fact-Based Negotiations.** The final preparation before the negotiation is to create a summary of all the cost reduction opportunities specified in a format that can be shared with the supplier. The negotiation agenda summarizes the fact-based argument and total savings potential. Besides presenting the cost reduction expectation and the underlying analyses, the opportunities and threats derived from the sourcing situation review should also be presented. Any deviations from the expected price reduction are needed to be explained in detail and in a fact-based manner to be accepted.

› **Execute.** Review the response from the supplier and the alternative actions you have at hand given the potential conditions suppliers have given; execute the most beneficial alternative.

# 2. Short-Term Lever: Improve Cash Management

Separate from the implementation of cost savings from renegotiations, companies should focus on cash management to secure financial stability. Cash management can be defined as the management of credit and payment relationships with third parties, and the internal management of liquidity. The objectives of cash management improvement initiatives are to release capital from the balance sheet and/or to optimize the trade-offs between revenues or costs on the one hand, and capital on the other.

Considerable cash release could be obtained quite easily short-term, but the challenge is to achieve sustainable improvements. The following measures are recommended:

**Invoicing**

› Work tactically with invoicing and ensure an efficient invoicing process by, avoiding gaps between contracted invoice date vs. actual invoice date, standardizing invoice design and sending invoices immediately.

**Collection**

› Define a credit collection process and escalate delayed payments. Implement a standardized reminder process with escalation for each reminder step.

**Lease vs. Buy**

› Evaluate lease vs. buy opportunities to increase portion of payments being paid in small increments, which will increase cash flow.

**Inventory**

› Improve inventory by identifying and rationalizing slow-moving products which will otherwise damage your cash flow by tying up cash.

**Outgoing payments**

› Decrease and delay payments to suppliers within the boundaries of reason. Balance benefits from renegotiations of pushing payment terms and decreasing price with the strategical importance of the supplier relationship.

**Metrics & Governance**

› Track and follow-up the performance within each previous process step to measure progress on a regular basis, i.e. invoices sent, % of payments received on time and % of penalize customers.

Figure 6 Key steps in releasing tied-up cash and improving cash flow

# 3. Short-Term Lever: Address Shortages

Most supply chain organizations are well equipped to handle shortcomings and shortages in their supply chains. Identity category shortages and prioritize categories based on business critically and risk. Leverage information collected through your supply chain tracking tools and during previous negotiations; deep dive the supplier market to identify viable suppliers and alternative sources to set up a more efficient supply chain and launch initiatives to collect further supplier data. Then single out candidates with capabilities able to satisfy prioritized supply shortages and compile them into a list. For every category experiencing shortage, identify the top candidate suppliers for that category.

# 4. Long-Term Lever: Supplier Viability & Compression

Few firms have had a rigorous process for monitoring the viability and financial stability of suppliers, severely increasing the risk of supply disruption in an economic downturn. In order to mitigate supply chain risks, organizations must have proactive supply base strategies robust enough to weather economic downturns, unexpected macroeconomic changes and minimizing operational disruptions. A comprehensive supply chain mapping as well as a dynamic supplier evaluation model are necessary to proactively avoid disruptions following financial instability or default of suppliers. Chosen risk metrics should be monitored and evaluated through supplier score cards on an ongoing basis and be tailored to the organization's risk level and preferences.

Based on the output from the dynamic evaluation model, the suppliers should be segmented into different categories. The strategic importance of the supplier is evaluated in relation to its financial stability, segmenting the suppliers into three categories: Grow, Fix and Exit. Financially distressed suppliers with lower strategic importance, regardless of spend, should be removed to create the long-term sustainable supply base that is needed to avoid disruption. For a more in-depth text regarding Supplier Viability and Compression, please see the separate Value Paper "Supplier Financial Risk - How to proactively manage supply base risk in economic downturns".

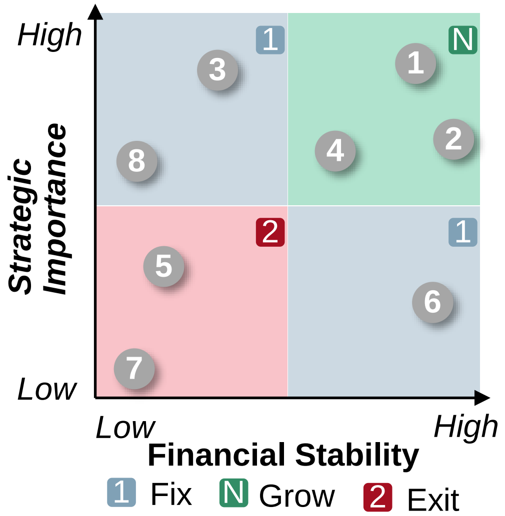



Figure 7 Supplier segmentation and supplier compression

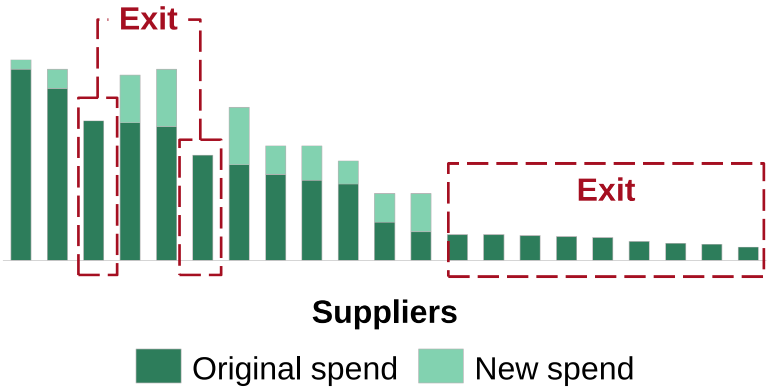



Figure 8 Supplier tail

# 5. Long-Term Lever: Supply Base Nearshoring

As the economy has become increasingly global, sourcing from cost efficient geographic regions has become an important lever for improving cost performance and margins over the last few decades. However, in the effort to optimize both cost and capital (i.e. low levels of inventory) many supply chains have become severely complex and vulnerable which, of course, includes significant risk.

In China, pressure from shrinking labor arbitrage, pollution control, punitive tariffs, and intensified competition has shifted the risk/benefit balance and many manufacturers are seeking new alternatives to shift production to other countries in the near future.

Due to the increased costs related to China, many companies in the consumer electronics and textile/clothing sectors are planning to relocate to Southeast Asia and India. India is comparatively more attractive for healthcare equipment and heavy machinery with lower environmental requirements. Within Southeast Asia, the development is unbalanced with Malaysia, Thailand, and Vietnam being the front runners. In addition, African countries are also popular destinations for production moves.

Companies are also increasingly considering moving production nearer to home as the risks of disrupted supply chains have become more visible following trade wars and the COVID-19 pandemic. Nearshoring allows for increased control as well as shorter lead-times and more stable supply. Naturally, nearshoring destinations are close to well established high-value manufacturing hubs such as western E.U. and U.S. including Mexico, Central America, and Eastern Europe.

Deciding where to shift production requires careful analysis. First, the company must assess current state including total cost and strategic importance of products to decide which items should be shifted. Secondly, a long & short list of potential suppliers should be created followed by a dynamic business case which quantifies risks and opportunities for all scenarios. Once the business case has been set-up and an initial hypothesis has been created, further information can be collected & negotiations held to validate/disprove the hypothesis. All new data which is uncovered should be fed into the dynamic business case.

For an in-depth report on supply base nearshoring, please see our separate whitepaper on this topic.

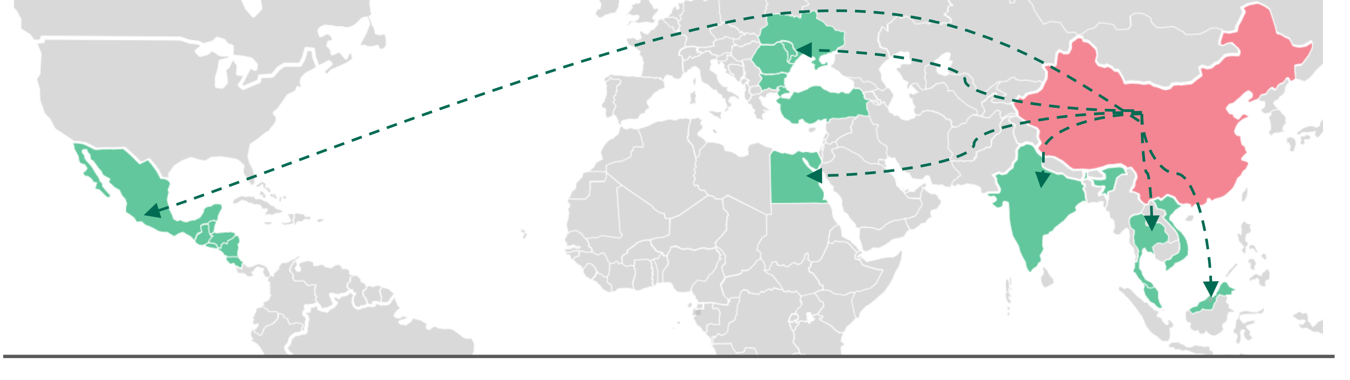


Figure 9 Supply base re-location map. Future important supply hubs (green), currently important (red)

# 6. Long-Term Lever: Re-Evaluate Category Strategies

A well-defined sourcing category strategy is crucial for sustainable competitive advantage and should be based on cost, quality, capacity and delivery performance. Maintaining an up-to-date strategy requires continuous development and analyses continuously need to be revisited are Make vs. Buy, Value Chain Setup & Flexibility assessments:

1) **Make vs. Buy.** Make vs. Buy decisions lie at the core of all production focused firms. Indeed, with in-house production often requiring both significant CAPEX and OPEX a failure to conduct proper evaluation will lead to missed opportunities, misallocated funds, and unanticipated risks which all negatively affect performance. Companies need to continuously evaluate current and incoming categories based on the strategic importance of the product, perform comprehensive risk- and Total Cost of Ownership analyses do make educated strategic Make vs. Buy decisions.

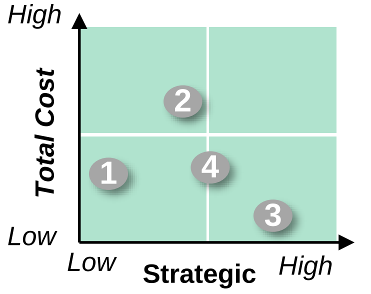


Figure 9 Make vs. Buy

2) **Value Chain Setup.** By having more insight and control along the value chain, buyers can better protect against risk & fluctuations in the supply base. To mitigate overall risks, sourcing organizations need to be mindful of the total exposure which includes direct as well as indirect impacts through i.e. component sourcing. To manage indirect exposure, companies should investigate to implement managed buy programs, where the sourcing organization consolidates and manages sub-tier purchasing across the supply base. The increased control provided by a managed buy program greatly improves the possibility for the sourcing organization to tailor the raw material risk after its own requirements.

3) **Flexibility assessments.** To minimize risk of supply chain disruption a well optimized supply chain needs to be flexible enough to handle potential chocks. Flexibility can be managed with three main levers

› **Multi vs. single sourcing**: Utilizing multi-sourcing is a tool to lower supply chain risks. Multi-sourcing is the highest level of risk mitigation and provides protection against supplier specific risks but is less effective against larger systemic disruptions.

› **Qualification:** To provide a further layer of risk mitigation and protect against wider negative impacts, companies must ensure that they have an efficient qualification process that swiftly can approve new suppliers in case all currently approved suppliers are compromised.

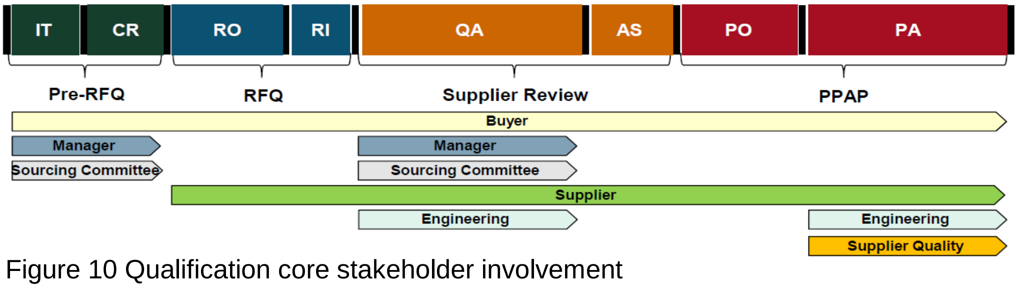


Figure 10 Qualification core stakeholder involvement

› **Tools and Processes:** The third lever stresses the importance of the sourcing organization to be prepared to take immediate action in case of supply disruption. Once disruption hits, all tools and processes must be in place to locate, negotiate and potentially onboard new suppliers. Continuous training including stress tests should be utilized to prepare the organization for an event which requires immediate action.

# Key Take-Aways

Applied Value's methodologies for managing supply chain and commodity strategies has supported companies during volatile markets at multiple occasions. To give companies' supply organizations the best chance at mitigating the negative impacts of uncertain markets and leverage its capabilities, the following areas should be considered and addressed:

› **Manage your Supply Chain proactively.** Develop key performance indicators, implement an impact assessment model and establish a framework for prioritizing categories. These activities should fit into a dashboard to form a tool that can be used to track the market and your supply chain, to support the identification of opportunities & risks, and to monitor current supplier performances and mapping of category value drivers.

› **Renegotiate Contracts / Capture Savings.** One of the quickest ways to implement cost savings through the supply chain is to renegotiate supplier contracts. Focus should be to evaluate which supplier should be re-negotiated and why. Gather supplier and market data and benchmark against competitors to make sure you are prepared for the negotiations; the more data that is collected and understood, the larger a company's leverage becomes.

› **Cash Management.** Considerable cash release could be obtained quite easily short-term. Companies should negotiate towards an optimal invoicing frequency, define a clear credit collection process with escalations for each step, reasonably decrease & delay outgoing payments, review lease vs. buy alternatives, improve inventory through identification & rationalization of slow-moving products and track & follow-up cash management activities' performances through KPIs.

› **Address Shortages.** Launch initiatives to collect and prioritize detailed category data, single out supplier candidates with capabilities able to satisfy the most prioritized supply shortages and compile them into a list. For every category experiencing shortage, identify the top candidate suppliers for that category and map against current suppliers falling short.

› **Supplier Viability & Compression.** Suppliers should be segmented into different categories based on financial stability and strategic importance to your business. Consolidate and transfer volumes from the less strategic and risky suppliers to nurture key strategic ones.

› **Supply Base Nearshoring.** With ongoing trade wars as well as the COVID-19 pandemic, many organizations are investigating to mitigate risks by moving their supply base closer to home. Sourcing organizations should continuously evaluate supplier footprint on a two-dimensional framework focusing on: Total Cost, and Strategic Importance evaluating the strategic importance against the supply chain disruption risks.

› **Re-Evaluate Category Strategies.** Continuously develop and update your category strategies by 1) re-evaluating Make vs. Buy decisions, 2) focusing on total raw material exposure and e.g. incorporate managed buy programs to mitigate indirect risk and 3) keep sourcing organization flexible and equipped with the right processes tools to act rapidly in times of crises.

## Applied Value can help companies respond to recent developments by outlining and driving best-practice initiatives to mend fractured supply chains and hedge against a volatile and unpredictable market.

### For more information, please do not hesitate to reach out to:

**Donald Bly**
Partner
+1 440 759 3894

**New York**

**Axel De Geer**
Consultant
+46 70 426 17 72

**Stockholm**

**Gustaf Persson**
Consultant
+46 76 822 17 94

**Stockholm**

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