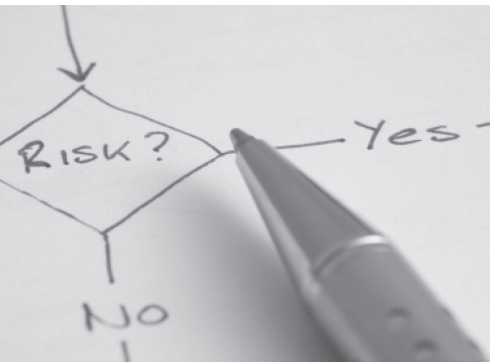


Managing supply chain risk in a flat world



Summary

Supply chains today have become more complex, dynamic, and geographically diverse than ever before. This makes them vulnerable to a variety of risks, such as geo-political risk, economic risk, fluctuating demand, compliance risks, reputational risk, and the risk of natural or man-made disasters.

Ineffective management of these risks can impact the profitability and reputation and even survival of not only the supplier, but also the company who hired them. Therefore, it is critical for companies to collaborate closely with suppliers to manage and mitigate supply chain risk.

The Complexity of Supply Chain Management

Risks in a supply chain are directly related to the complexity of the supply chain. Increased complexity means more risk. A decade or so ago, supply chains were relatively simple. For instance, a manufacturer would have a few tier 1 and maybe tier 2 suppliers, and tier 1 customers. But today supply chains have many more layers and partners due to increased globalization. With each new vendor, tiers of vendors and tiers of customers added to the supply chain, the complexity and risk involved increases.

Another factor that is contributing to the complexity of supply chains is the increasing number and intricacies of regulations. Unlike a few years ago, regulations now influence almost every step in the supply chain such as labor practices and transportation methods. These regulations require a real-time level of monitoring and auditing, and non-compliance can only rarely be objectively measured by testing or inspecting the final product. Compounding the challenge, different countries have different regulations. Therefore, a company with globally dispersed suppliers is faced with the Herculean task of monitoring supplier compliance across multiple regulations.

As supply chain management responsibilities increase, so do costs. Many companies are making supply chains leaner by, for instance, eliminating the need for buffer stock. However, this triggers new risks for missing deliveries.

Meanwhile, customer demands and expectations are growing. Faster turnarounds are the order of the day. Simultaneously, the visibility into supply chain governance has increased with media reports exposing unethical practices in the supply chains of some of the most reputed companies.

All of these factors contribute to extensive supply chain complexity and risk, which companies are trying hard to control.

The Importance of a Holistic Approach to Supply Chain Risk Management

Professor Martin Christopher aptly defined supply chain risk management as “the management of external risks and supply chain risks through a coordinated approach among supply chain members to reduce supply chain vulnerability as a whole.” This definition highlights the fact that supply chain risks need to be managed in their entirety.

Many companies make the mistake of not understanding the permeative effect that supply chain risk has on their entire organization. They need to align the risk tolerance of different stakeholders, such as the board of directors, sales department, purchasing department, customers, and the larger community who all perceive supplier risk differently.

Employee perceptions of risk might also differ. Their decisions may be based, for instance, on how it would affect their job or career. Customers and suppliers themselves will also have different perceptions and tolerance levels of risk. So, the first step in supply chain risk management should be to get all of the stakeholders aligned regarding a common level of risk tolerance.

The next step is to understand that not all risks are bad. Sometimes, companies need to take risks to make maximum use of opportunities and thus increase business value. On the other hand, they need to manage risk effectively to protect their existing value. It is important to strike a balance between optimizing opportunities and controlling risk.

Technology plays an important role in this effort. It enables companies to efficiently identify and manage supplier risks so as to optimize risk/reward outcomes. It can transcend organizational silos, integrating all supplier risks and risk management processes in a single point of reference. In doing so, technology helps companies establish a common risk language and risk tolerance level across the enterprise.

Technology can also help automate processes such as supplier risk reporting, and streamline the complete risk management lifecycle—from risk identification and analysis, to risk aggregation, correlation, and risk and control monitoring.

Approaches to Supply Chain Risk Management

There are typically two kinds of approaches to supply chain risk management:

The Proactive Approach: Proactively managing supply chain risk means ensuring that everything is in place to minimize risk when it occurs. This calls for an effective planning culture across each company, their supplier base, and their client base, so that risks can be foreseen and managed capably. Companies should design and implement a reward system for effective planning so that staff is motivated to effectively plan, analyze, manage, and monitor risk.

Reactive Approach: Reactively managing supply chain risk involves handling a disruptive situation to minimize risks and costs. In this case, staff members who can think on their feet to keep things under control should be rewarded.

Proactive Supply Chain Risk Management	Reactive Supply Chain Risk Management
<ul style="list-style-type: none"> • Pre-emptive risk management • Tools needed: <ul style="list-style-type: none"> • Alignment • Culture of planning • Strong conceptual corporate supply chain staff • Reward planning • Best for stable industries, public companies, and high profile companies 	<ul style="list-style-type: none"> • Minimization of disruptions that occur • Tools needed: <ul style="list-style-type: none"> • Agility • Resourcefulness • Culture of entrepreneurial activities/ spending • Reward resourceful firefighting • Best for fast-moving innovation companies with simpler supply chains

Ideally, companies should use a judicious combination of both proactive and reactive approaches to encourage methodical planning as well as resourceful firefighting. Companies should also analyze how they can respond to different scenarios such as cost variations or delays. They need to decide on what is and is not acceptable. The emphasis should not be on the origin of the risk but on its impact and how it can be controlled.

Methods of Risk Analysis

Companies can analyze risks using several tools, including:

1. Key performance indicators (KPIs) and key risk indicators (KRIs).
2. Loss tracking which involves analyzing the factors that caused loss to the company. Both loss tracking and KPI and KRI analysis are retrospective tools.
3. Dashboards which offer an overview of the current situation. They help assess current risk but do not predict the future.
4. Demand forecasts and supply estimations which are predictive and can help mitigate risk. However, the results can also be inaccurate as they are only estimations.
5. Supply chain event management systems, which can provide a clear overview of the supply chain, and trigger risk alerts. Prompt interventions based on pre-alerts or even a real time alert can significantly reduce the costs of controlling risks.
6. Predictive analysis, based on aggregate data that is company and supply chain specific, are the wave of the future.
7. A review of the geographical distribution of the supply chain which can show the impact of natural disasters such as earthquakes or tsunamis.

While analyzing supplier risk, companies need to take into account all factors that could affect their reputation with clients and the greater community.

Using the Supplier Risk Scorecard Model

A typical risk scorecard model includes a company's objectives, KPIs, measures, targets, KRIs, loss tracking, contingency plans, and control measures. It examines the likelihood and intensity of supply chain risks and their economic impact. When the KRI model is leveraged to carefully document and learn from past risks, it can lead to continuous improvement in the supply chain cycle with a focus on variables that can be changed and controlled (e.g., supplier selection/ performance).

One disadvantage of the KRI model is its reliance on past performance indicators; they cannot be reliably used to predict future events. Companies should be creative in thinking of things that could go wrong in the supply chain, and then identify the mitigation measures that will be required. There can be opposing viewpoints on every aspect. For example, some companies may feel that more suppliers minimizes the risk of disruptions, while others may think that fewer suppliers mean a more simple supply chain and thereby, fewer regulatory risks.

Another disadvantage of the KRI model is that it relies heavily on averages, not extremes. Yet big disruptions come from extremes—such as the 2011 Japan tsunami. To compensate, the KRI model should also factor in extreme future variables to provide a reliable risk overview. Country-specific variables are important. They include the state of the infrastructure, available resource base, and state support to recover from major natural disasters.

Technology simplifies the process of defining, measuring, and managing KRIs and KPIs. For instance, it can enable automated alerts to notify the appropriate personnel every time a KRI or risk threshold is breached. It can also harness risk data from multiple sources such as surveys, ERM systems, assessments, inspections, audits, and performance scorecards. Based on this data, companies can define their KRIs and enable scenario modeling for different types of risks. Risk heat maps support this process by highlighting high risk areas and their impact on the company.

Mitigating Supply Chain Risks

The first step towards mitigating supply chain risk is to establish strong contingency plans based on the measurement of supplier risk and its impact on the company. In addition, suppliers need to be vetted carefully through site visits and audits of key areas like sustainability and environmental practices and compliance with labor regulations.

Technology can enable more systematic and efficient supplier audits by streamlining the complete audit lifecycle—from audit planning and scheduling, to field data collection, to reporting, to the implementation of audit recommendations. It can also enable a closed-loop audit where gaps are closed, and issues and corrective actions are effectively followed through to closure.

Top-level dashboards can provide an integrated and top-level view of supplier audit processes and results. They also help aggregate supply chain risk intelligence from across the enterprise, enabling executives to slice and dice it across various parameters, and thereby make more informed and strong strategic decisions.

Top Failure Points in Supply Chain Management

1. Paying attention only to large and expensive components: Smaller and cheaper components can disrupt the supply chain just as much as larger ones do.
2. Giving the same importance to catastrophic and small failures: Factors that affect a company's reputation, like non-compliance with regulations, need to be taken more seriously than a change in a shade of color on a finished product.

3. Low risk awareness at different levels of a company: All stakeholders, including suppliers and third-parties need to be well aware of the risks in the supply chain. Risk alignment across these stakeholders is also essential.
4. Failure to classify and document risk tolerances: This can be easily rectified by using a common technology framework to facilitate documentation and harmonization of all risk information.
5. Failure to learn from near-misses and rescue operations: It is important to analyze how failures occurred, and how they can be pre-empted in the future with proper planning.
6. Focus only on costs without an eye on risk: Supply chain changes driven by an urge to save short term costs can end up incurring high costs in the long run.
7. Failure to complete frequent analysis of risk: Changes occur all the time in today's fast moving world. Therefore, risk analysis needs to be conducted in a regular manner with inputs from various data sources. A system that offers a top-level view of all the information at a glance is of immense help.
8. Failure to analyze and react to low-hanging fruit: Companies should proactively respond to areas they know are risky, such as sole-source vendors and unreliable transportation methods.
9. Failure to identify the costs of supply chain decisions: Companies need to factor in the cost of increased risk or the advantage of decreased risk in their decisions.

Conclusion

When it comes to supply chain risk management, companies are currently focused on factors such as supplier compliance, training, education, and collaboration. However, in the future, other factors such as risk quantification and scenario planning will become increasingly important. Therefore, it is crucial for companies to get a head-start and begin adopting a more forward-looking approach to supplier risk management. This approach will help them cut costs, improve quality, become more competitive, and provide a superior customer experience to create a win-win situation for all parties.

About the Authors

Phil Jamison is a Product Assurance and Manufacturing professional with over 30 years of experience in Supplier Quality Engineering and Management. He developed and implemented strategic supplier quality processes and tools for major contract manufacturing companies and holds green belts in Design for Six Sigma, Six Sigma and Lean Six Sigma. Along the way, Phil has traveled the world conducting supplier audits, implementing corrective actions and training suppliers in process improvement techniques. Phil is currently working as Solutions Manager, Professional Services at MetricStream Inc., Palo Alto, CA. He can be reached at pjamison@MetricStream.com

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ALOM is a Fremont, California-based supply chain management provider. Our award-winning services are designed to provide world-class global management and execution of corporations' product supply chain as well as marketing operations supply chain. Services include materials and inventory management, print management, logistics, assembly, light manufacturing, fulfillment, and reverse logistics from 16 locations across North America, Asia and Europe. ALOM caters to the technology, medical, automotive, energy and clean-tech, as well as the government market. More information is available at www.alom.com

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