

A Beginner's Guide to Supply Chain Risk Management

IDENTIFY, ASSESS, MITIGATE

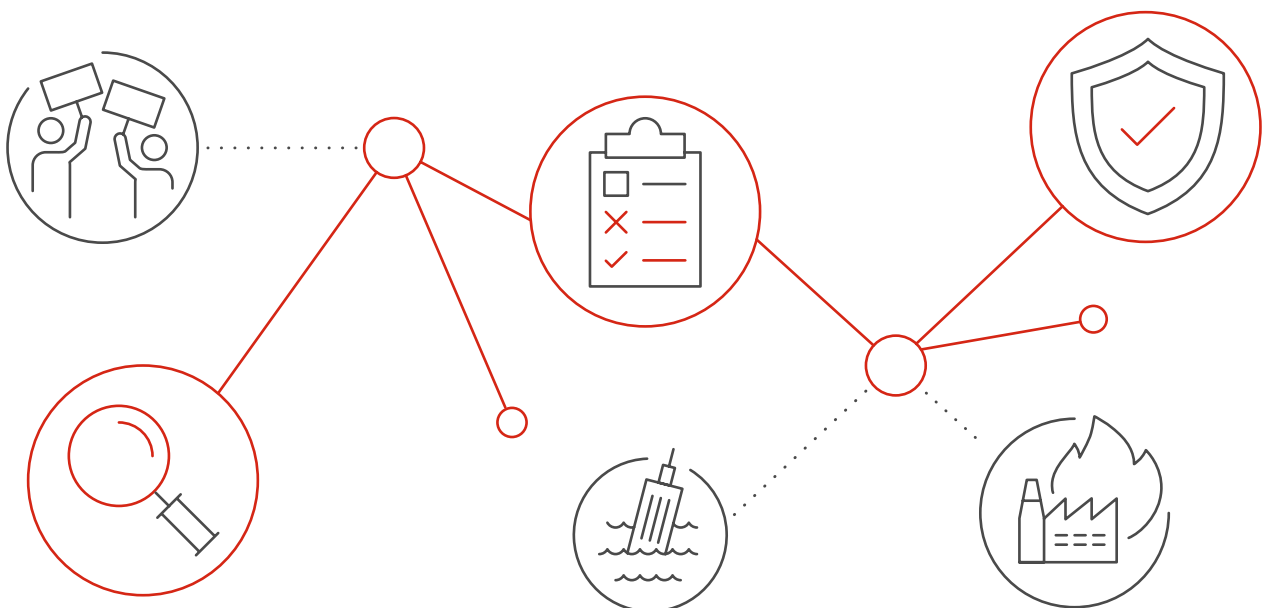


Executive Summary

Natural disasters, strikes, sanctions, fires or insolvencies—the causes of supply disruption are numerous. Globalization is making supply chains susceptible to disruption, regulations are evolving and the hyper-connected world means your brand is only one imprudent supplier away from harm. Together, these forces expose your company to critical threats: contractual penalties, production standstills, drops in sales and reputational damage.

That's the problem. Now what do you do?

The answer: Employ a comprehensive supply chain risk management program that will help you secure supplier relationships, prevent supply bottlenecks and ensure your company is operating both legally and ethically. To do that, you have to first understand the three phases of the risk management lifecycle: identification, assessment and mitigation. In this beginner's guide to supply chain risk management, we'll walk you through what each of these phases means for your supply chain.



Risk Identification

The first phase of the risk management lifecycle is risk identification. After all, the only way to address risk is to make sure you know about it in the first place. So your first step is to establish risk profiles for all elements of your supply chain, and then enact active monitoring to keep these profiles up to date.

Remember, active monitoring is key to this step—an initial risk assessment upon onboarding of a supplier, for example, is simply not enough. Circumstances change, and your strategy for risk identification must account for that. (At riskmethods, we employ Risk Intelligence™ to make sure our risk identification practices are as sophisticated as they can get. [Check out our video to learn more.](#))

1

Identify which elements of your supply chain to monitor.

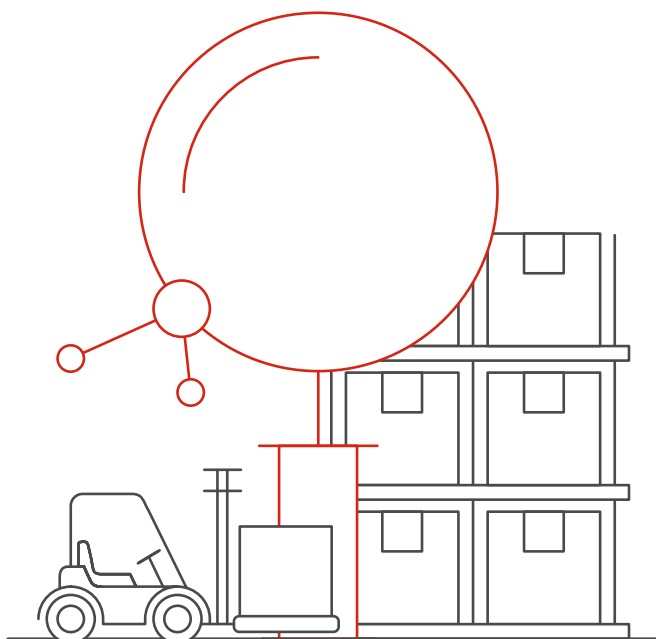
2

Decide how to measure risk.

3

Develop a process—preferably automated—for capturing risk data.

Let's dive into a bit more detail about each of these steps.



A risk profile is an assessment of the threat faced by an organization or other asset. The goal is to assess the risk faced by the asset based on an established and defined process. In supply chain risk management, for example, each of your suppliers, locations, and ports should have a risk profile.

Identify What to Monitor

A critical initial step in risk identification is to determine which segments of your supply chain and how many sub-tiers to actively monitor as part of your risk management program. Typically, our customers consider the following parameters to aid in their prioritization: purchasing volume, effect on sales, scarcity, technology and patents, ownership structures, custom requirements and geography. At a minimum, riskmethods recommends including all tier 1 direct material suppliers but urges you

to quickly expand beyond tier 1. According to the Business Continuity Institute, the majority of supply disruptions occur below tier 1—which shows that it is essential to map and monitor all tiers of your supply chain. Besides sub-tiers, it is equally important to capture supply paths and structures; these include critical logistics hubs (ports, airports and bottleneck regions such as Rotterdam and the Suez Canal) as well as internal production sites and distribution centers.

Decide How to Measure Risk

So you've decided *what* to measure...now you have to decide how to measure it. To do this, a company-specific risk assessment methodology must be defined. A risk scorecard that encompasses all of the important key risk indicators, their importance and their scoring is the first step.

To facilitate definition and classification of individual risks, it is useful to create clusters by topic, such as economic stability of the suppliers, supply disruption risk, market and cost risk, image and compliance risk or quality and performance risk. Here it is important to take into account not only the supplier perspective (solvency, CSR conformity, etc.), but also location risk such as natural disasters, strikes and accidents at sites or logistics hubs—which can often affect several suppliers at once. This risk scorecard is useful for many integrated business processes; for example, to integrate risk information into procurement processes such as contract award decisions or supplier onboarding. This makes it possible to

use risk management to yield synergies in many different business processes.

If you're creating a risk scorecard completely from scratch, it's a complicated process that involves a lot of variables. At [riskmethods](#), we've done the heavy lifting for you. Our comprehensive scorecard—powered by Risk Intelligence—works out of the box, but is also fully customizable so you can define what is appropriate for your organization.

What's a risk scorecard?

A risk scorecard is a key tool for assessing the risk profile of an organization or asset. It gives you an easy-to-understand snapshot of the current risk status of an asset, using an established numerical scale, so that you can always keep on top of where your risk lies.

Capture Data

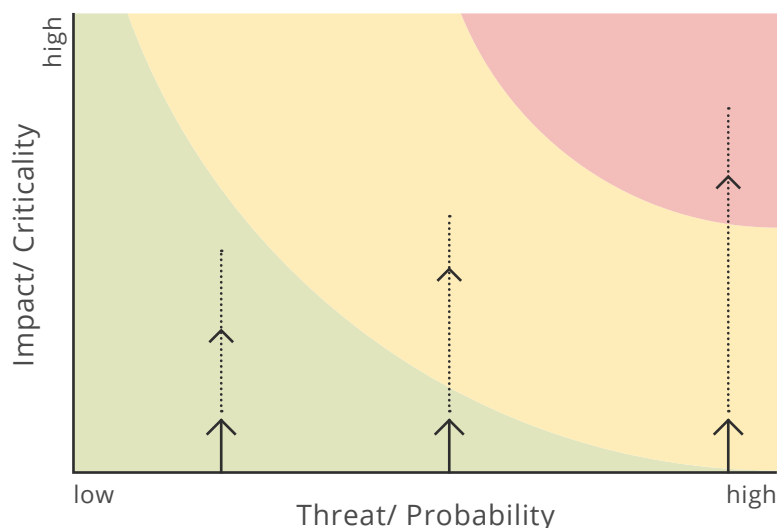
There are three main challenges when it comes to capturing risk data: volume, relevance and standardization.

The primary challenge in performing constant monitoring of risk—which is absolutely necessary for a truly comprehensive supply chain risk management program—is the overwhelming volume of data that has to be sifted through. Initial assessment of latent supply chain risk requires information from numerous third-party sources, government lists, social media and news outlets. The same applies to ongoing risk monitoring on a real-time basis for ad-hoc identification of new and emerging threats. High automation of data capture and data updates on a global scale is therefore indispensable and should be a key requirement when setting up supply chain risk management.

In addition to volume, relevance is also a factor: the alerting logic for your risk monitoring should filter noise from actual risk signals. This is a critical part of the program, as faulty information or misjudged alerting of the business will cause the SCRM initiative to quickly lose momentum.

Finally, it is also critical that you can standardize your data. Reliable measurement can only be ensured if consistent terminology exists. For that reason, data such as financial indicators (e. g., credit ratings: AAA, AA+, ..., D), earthquakes (e. g., probability of occurrence and magnitude based on the range on the Mercalli scale of MM I to XII) or political stability (e. g., Global Peace Index Score in categories on a scale from 1 to 5) must be converted to uniform scales. This is where scales that are easy to understand are helpful, for example: no risk, low risk, medium risk, high risk (see below figure).

At [riskmethods](http://riskmethods.net), we've addressed these three key data capture challenges by developing Risk Intelligence—a technology-driven service that uses big data monitoring and artificial intelligence to zero in on the real risk to your supply chain—and using it as a driver for our comprehensive risk scorecard that standardizes data to give you a clear, easy-to-understand picture of the risk in your supply chain.



Impact Assessment

Identification and proactive monitoring of supply chain risk is the foundation for a comprehensive SCRM program, but alone is not a complete solution for risk management.

The second essential element of an SCRM program is to assess the impact of potential risk scenarios. In most cases, determining criticality related to a specific product group or article is also indispensable. The focus gained through an impact assessment enables adequate and targeted measures to be implemented when a crisis occurs.

To make sure you have an accurate understanding of risk impact on your organization, there are a few steps you have to accomplish:

1

Create a complete inventory of all your suppliers and risk objects.

2

Identify key parameters to assess.

3

Create a general risk assessment.

Let's dive into a bit more detail about each of these steps.

Complete a Risk Object Inventory

To understand the potential impact of risk to your organization, you must consider all business partners—this is the only way to ensure complete transparency with respect to the criticality of the entire portfolio. This includes not only suppliers, but additional dimensions such as locations, countries and logistics hubs. These parameters can impact availability and the degree of substitutability.

When it comes to inventorying your suppliers, we strongly recommend not carrying out a selection according to strategically important suppliers or suppliers with high purchasing volumes. Even C-part suppliers, whose parts may be found in several products, can present a high risk. A study done by the Massachusetts Institute of Technology, in collaboration with Ford, demonstrates this point: the highest risk actually originates from low-cost component suppliers representing only 2% of purchasing volume. In addition, we recommend that sub-tier suppliers be included in the impact assessment. Supplier portfolios previously assumed to be low risk can suddenly have a high degree of criticality when looking at the sub-tier levels. The relationships among suppliers in the sub-tier structure can reveal a network that is effectively in a single-source scenario—making your supply chain very vulnerable to a risk event.

Identify Key Parameters to Assess

In the initial evaluation phase, the less-is-more approach can be applied when asking the key questions regarding the assessment of the extent of loss or damage. Typically in the first stage, having between three and five parameters provides a good overview of criticality/dependencies in the supply chain. For assessing relative criticality, we recommend the following parameters:

- Total time to recover (TTR)
- Degree of substitutability or relocation time
- Impact on corporate image

Possible additional parameters for detailed evaluation in the case of an event include:

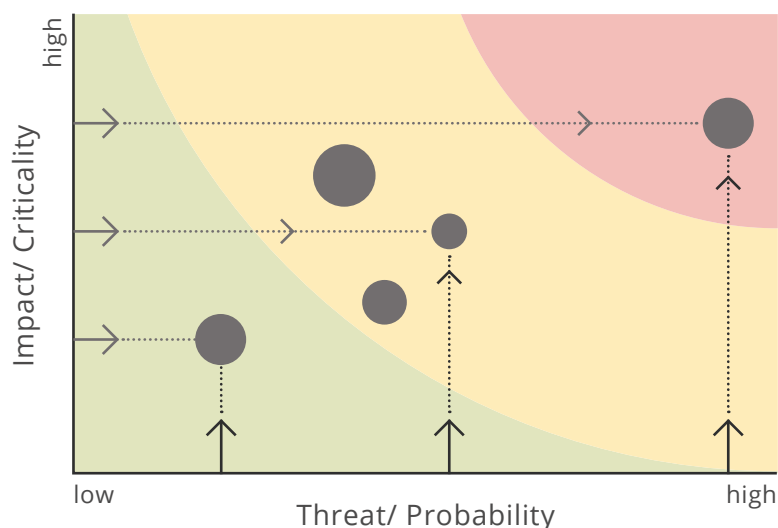
- Number of qualified alternative suppliers
- Number of customers affected
- Costs for corrective marketing and sales activities

The financial impact of a supply disruption can also be evaluated by estimating impact on sales, margins or EBIT. Here, the procurement organization may need to change their traditional way of thinking, as the correlation between the level of purchasing volume and the level of loss or damage may be low in a supply disruption, and spend volume may not necessarily be the best indicator of impact. It is therefore important to use specific sales or lost profit dimensions for the financial evaluation.

Once your assessment is complete, you should be able to classify risk objects based on high, medium and low criticality, which will help you make decisions with respect to future impact assessment timeframes. For example, extremely critical risk objects could be assessed on a biannual basis, while longer cycles may be sufficient for medium and low-risk risk objects. In the case of suppliers that serve different product groups, the determination of criticality related to a specific product group or article is also required. This assessment will show whether different criticality levels apply to the individual product groups provided by a supplier. It will also provide information on which suppliers or product groups present the greatest dependencies.

Create a General Risk Assessment

The results of your assessment, combined with the results of risk identification, can be used to form a general risk assessment (see figure). The color of the fields (red, yellow, green) represent the level of risk and impact. The objects in the red area must be given priority in terms of monitoring. Furthermore, it should be noted that the size of the objects reflects the total extent of loss or damage. The larger the object, the higher the potential financial loss in terms of sales or profit of the company. Both the positioning and size of the objects are the basis for planning risk actions.



If impact assessment sounds a little complicated, that's because it can be. However, there are ways to automate the process. At [riskmethods](https://www.riskmethods.net), we've developed a system that allows you to generate impact scores for all your suppliers, and then compare a supplier's risk score and impact score to understand where your supply network is most vulnerable.

Risk Mitigation

Monitoring and assessing supply chain risk form the foundation of a comprehensive SCRM program, but without mitigation you are relegated to the role of a spectator unprepared to react to a risk event. To complete the SCRM process and minimize the effects of a risk event, a set of pre-approved preventive and reactive measures are necessary. These steps provide the basis for addressing risk in a proactive manner using appropriate measures to ensure long-term success.

To this end, a catalog of all risk-prevention or crisis-response activities—action plans—should be created and described. For this step it is useful to group the individual actions by topics according to risk factors; for example, natural hazards, political situations, sanctions, working conditions and strikes. You can also take this one step further and assign a responsible party for each action. To ensure fast response in a risk event, we also recommend describing the actual procedure to be followed for each action plan. Ideally, specific recommendations regarding implementation or support should be added to this description; for example, service providers (e. g., emergency logistics experts, or brokers in the semiconductor or chemical sectors) who can provide valuable support in crisis situations.

Once a risk event occurs, you can use your action plans to decide how to handle the relevant risk. Depending on whether the level of impact is high or low, action plans with appropriate effect should be chosen. Let's take an example: Consider a case where a supplier's production plant is located in an area with a high earthquake risk. What should your framework for preventive action be? For a low impact area, it may be reasonable to decide that the risk of an earthquake hitting the supplier's site is accepted. In this case, no actions need be defined. For a high impact area, on the other hand, you may want to define some actions; for example, establishing an alternative source of supply or taking out CBI (contingent business interruption) insurance.

To implement action planning on a sustainable basis and to ensure long-term success, support by top-level management is imperative. Resources as well as budgets must be made available for implementing preventive actions (when planning is possible) and managing risks on a reactive basis. Many companies are still neglecting this practice within the framework of risk management, and instead allocate most of their budget and resources towards straightforward supplier development programs. Consequently, it stands to reason that the first step should be the integration of supplier development and risk management. After all, a large number of measures in supplier development actually have a risk-mitigating effect.

Risk mitigation isn't easy, but the effort pays off—imagine the time you can save by having predefined action plans in place when a risk event occurs. At [riskmethods](https://www.riskmethods.net), we make it simpler to put these plans in place and enact them when necessary. Automate user workflows, assign tasks and keep a record of activities for compliance authorities—all in one place.

Conclusion

Comprehensive SCRM programs have traditionally been relegated to only the largest of enterprises. This is due to many factors, including the cost and complexity of quality, a lack of informed data to feed the program, a lack of organizational buy-in and a dearth of knowledge about what to measure and how. However, as the complexity of supply chains and regulations continues to grow, it is no longer tenable to ignore supply chain risk management.

The good news is that technology like AI, machine learning and easy-to-use software has changed the supply chain risk management game. The days of simply holding inventory as a primary risk reduction approach—which is quite costly—is over. With the right technology solution, a comprehensive SCRM program is now available to all organizations, large and small.

Do you have questions about the supply chain risk mitigation lifecycle, or do you want to learn more about how risk methods can help you automate and manage all of these processes? Don't hesitate to [contact us](#), [request a demo](#)—or just spend some more time browsing the [additional SCRM resources](#) and tools on our site.

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