



## Supply Risk Assessment

*Know each supplier's risk factor and impact on your company.*

As companies increasingly adopt global sourcing and supply chain management practices, they are discovering both opportunities and challenges. On the one hand, global sourcing is lowering purchase prices and expanding market access. On the other hand, operating a global distribution channel increases the level of supply chain risk with an increase both in the potential for product and service disruptions and in the magnitude of those disruptions.

According to Aberdeen Research, more than 80% of supply management executives reported that their companies experienced supply disruptions within the past 24 months and these supply glitches negatively impacted their companies' customer relations, earnings, time to-market cycles, sales, and overall brand perceptions. They also found that less than half of enterprises have established metrics and procedures for assessing and managing supply risks. and many procurement organizations lack sufficient market intelligence, skills, and information systems to effectively predict and mitigate supply risks.

In response to this, DRK Research has created a framework and process to better understand the drivers that create supply disruptions and mitigate the risk more proactively. This framework and process consists of a set of **disruption predictors** developed through several years of research and experience with global supply chains. The process and framework, shown in figure 1, has been used by Risk Management teams and commodity managers to aid in identifying, predicting and managing risk on a timely basis or to be alerted to possible risk factors that require their attention.

# Structuring the Relationships of Supply Chain Risk

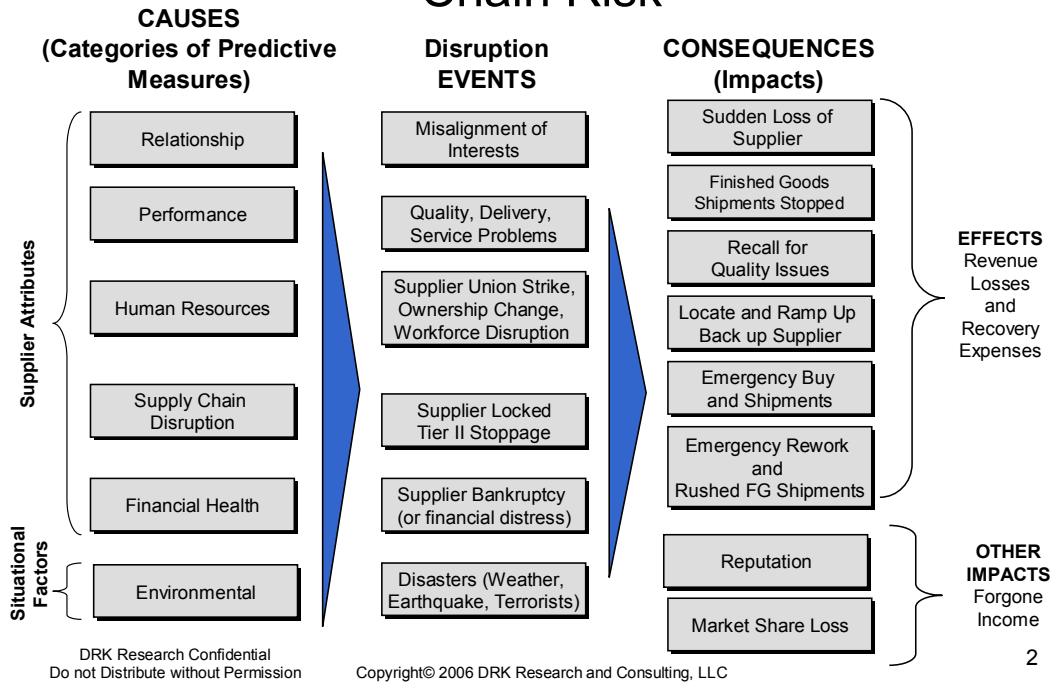


Figure 1. The DRK Supply Chain Risk Model

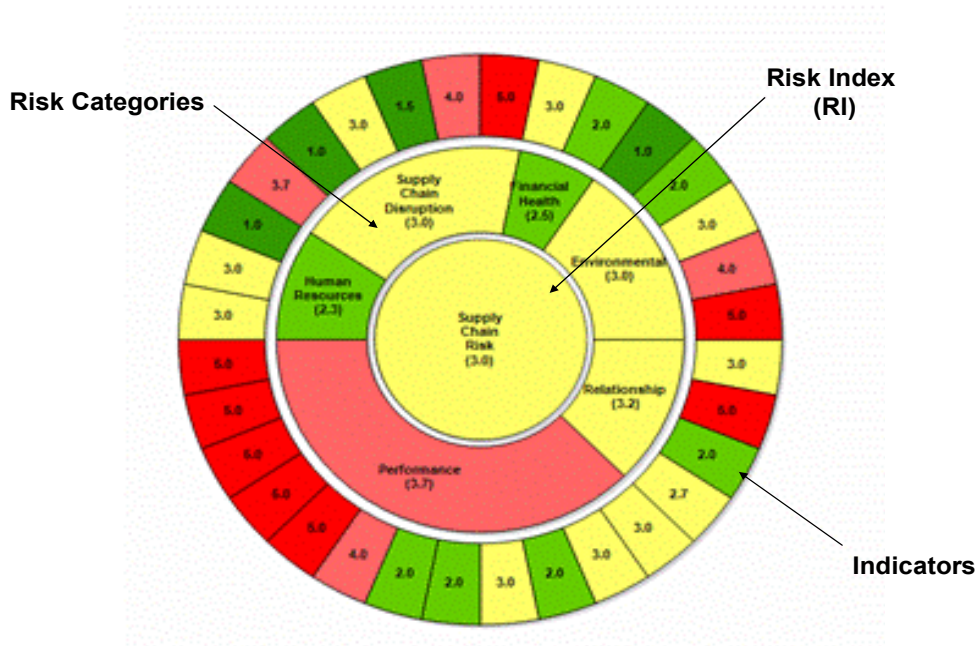


Figure 2. Risk Wheel – Diagnostic

The primary reporting view of the system is the “risk wheel”. The diagnostic view is shown in Figure 2. This view is available for any demographic and any level of drill down. The center of the wheel is the Risk Index for the demographic (supplier, sub category, commodity, etc.). In the second ring are the risk categories and the outer, the risk indicators. Each item is color coded. Red (high risk), Light Red (medium risk), Yellow (low risk), green (no risk). A description of each element of the wheel becomes visible as the cursor touches the area and the details are available by “clicking” on the section of interest. This report can be used to understanding the base factors about the supplier that are driving risk.

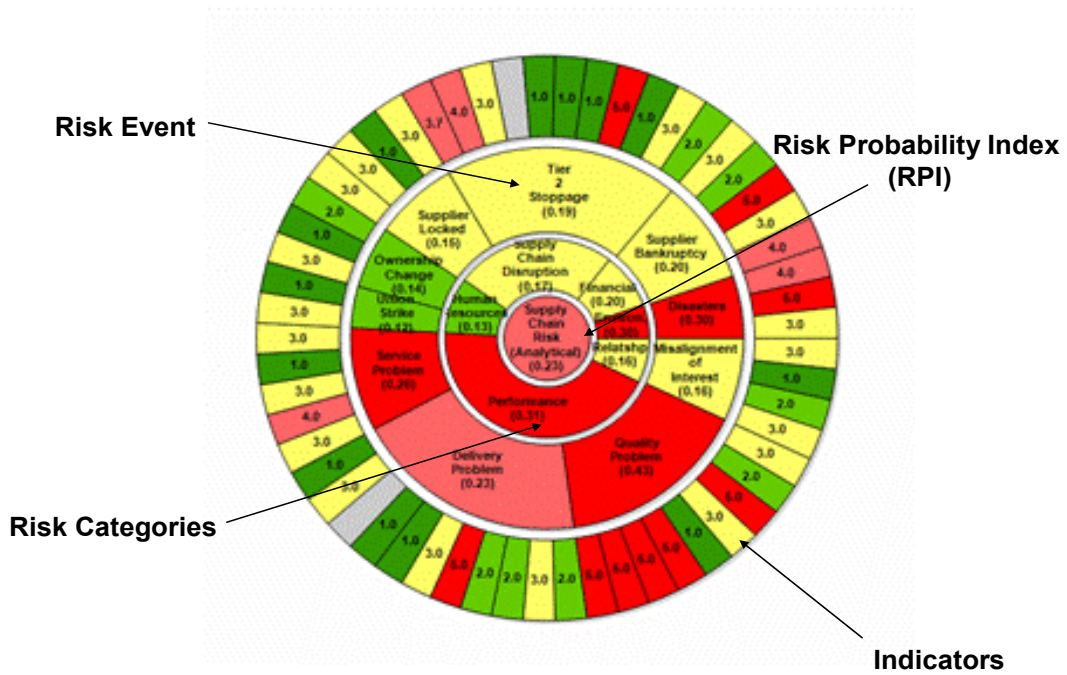


Figure 3. Risk Wheel – Analytical

Figure 3 is the Risk Wheel for the analytical or risk event mode. This view takes into account the indicator scores by applying them to potential risk events that would result in a supply chain disruption. The events are assigned a probability of occurrence within a specific supply chain by experts within that supply chain. This probability is multiplied by the risk indicator score for that event. The averages of the results are rolled up to produce the Risk Probability Index (RPI). This is a relative measure used to rank order the suppliers according to the potential of a supply chain disruption.

Best Practice	ADAC PLASTICS, INC.	CARY PRODUCTS CO INC	CK TECHNOLOGIES, LLC	CONSOLIDATED METCO	DOUGLAS CORPORATION	ENDURA PLASTICS INC	GUARDIAN AUTOMOTIVE	KASO PLASTICS INC	KURZ-KASCH, INC.	LACKS ENTERPRISES, INC.	MACK HOLDING COMPANY INC.	MERIDIAN AUTOMOTIVE SYSTEMS INC
Accreditation	1	3	1	3	1	1	3	3	3	1	1	1
Capacity utilization	1	1.8	1.4	1	3	1	3	1	2	4	1	2.3
Capacity change	3	2.5	2	5	3	3	2	3	3	3	3	1.5
Delivery flexibility	2	1	1	3	2	2	2	2	1	2	3	2.3
Service Promptness	3	2	3	1	2	3	4	1	4	4	3	2
MRR	1.3	2	2.6	1.5	1	2	1	1.2	1	3.2	1.6	3
Audit Date	5	1	1	1	5	5	1	1	5	5	1	5
Audit Score	5	3	3	3			3	3			3	
Employee turnover	1	1	1	1	1	2	2	2	2	2	1	1
Senior staff turnover	1	1	1		1	1	1	1	1	1	1	1
Union issues	1	1	1	5	1	1	1	1	1	1	1	2
Market Power	4.3	3	1.7	2.3	2.3	3	3.7	3.7	1	5	3	3.7
Tier II Information Sharing	1	3	1	1	3	3	1	3	3	3	1	3
Tier II Performance Monitoring	2	3		1	1	3	3	3	1	3	1	2
Disruption Probability	1.4	1		1.3	1	1	2.8	1	1	1	1.3	1.1

Figure 4. MUM Chart

The Multi-Use Matrix (MUM) Chart Report, Figure 4, is used to show the Risk Category Scores for all (or some since the number of suppliers is selectable) of the suppliers in a commodity group. It is also color coded to indicate high to no risk scores. This report is useful in comparing suppliers within a group by risk category. The suppliers can also be rank ordered using this report.

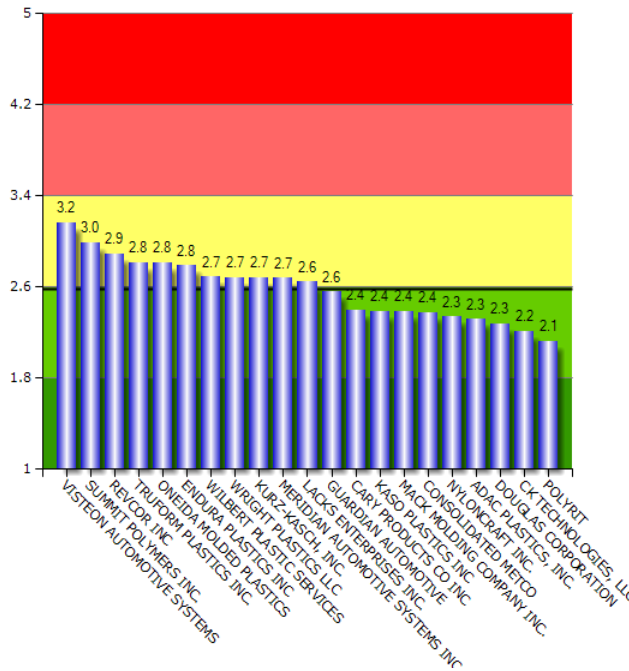


Figure 5. Bar Chart Ranking Report

The Bar Chart Report shown in Figure 5 is used to show the ranking of each supplier's Risk scores within a commodity group.

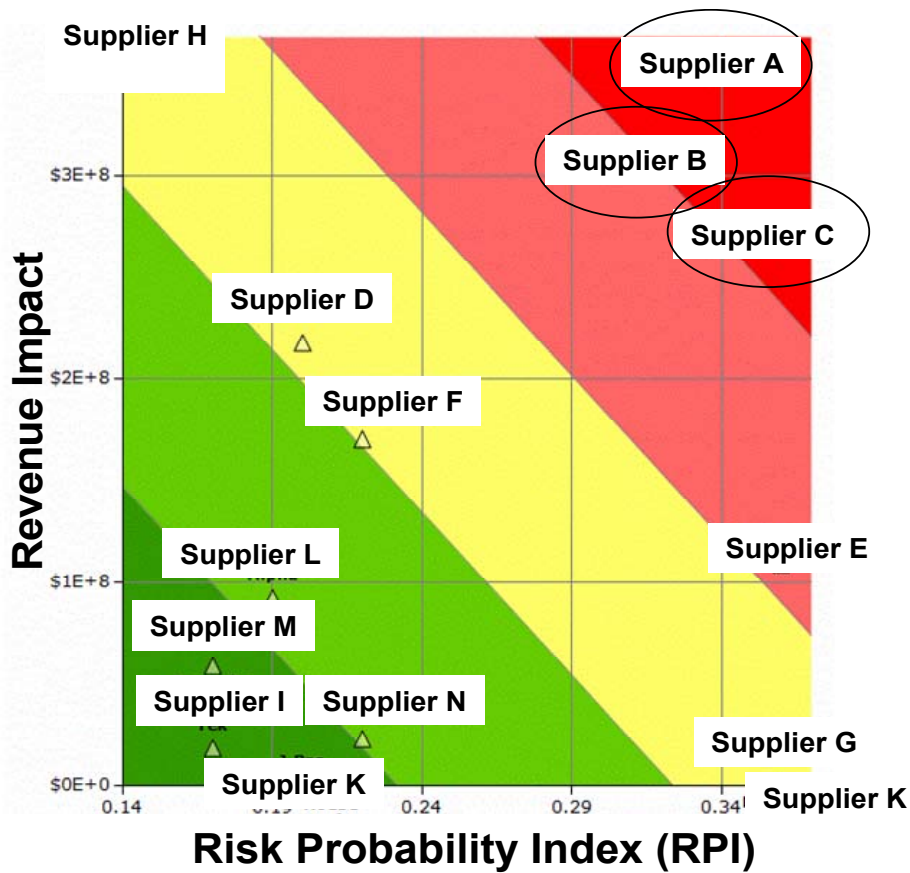


Figure 6. Risk Distribution Matrix

The Risk Distribution Matrix shown in Figure 6, is constructed by plotting the Revenue at Risk (Rev Impact) with a supplier v. the average Risk Probability Index (RPI) of that supplier. It is used to view all the suppliers within a commodity group placed within a 2 by 2 matrix according to their risk and potential impact on your company. The zones are color coded from Red (high risk) to Green (no Risk). This is a visual sorting mechanism used to help prioritize and focus mitigation actions on the high risk suppliers. Many other reports and views are available with this system.

DRK Research (DRK) can help you get started on this approach to managing supply chain risk and disruptions with a rapid pilot (8 weeks) focused on a commodity category of 30-50 suppliers. All technology is hosted and available through the web and there is nothing to buy or install.

DRK Research is a focused provider of business process best practice research and education services to large and mid-size companies. We advise our clients on strategic, business process and technology best practices as well as develop and implement the appropriate education programs. Since 2000, DRK has built a strong history of commitment and success in serving clients in North America, Europe and China.

The mission of DRK Research and Consulting LLC is to provide leading edge, technology enabled business models for clients that result in lasting change. This mission is accomplished through the processes of **D**iscovery (research), **R**euse (consulting) and **K**nowledge transfer (publication and training).

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Dr. McCormack's books on the principles behind the supply risk assessment.

