



Mitigating Supply Chain Risks

Risk Insights

- Despite the global economic recovery, supply chain risk remains elevated.
- Short-term factors will increase pressure to develop contingency plans for managing risks associated with extended supply chains and over-reliance on single suppliers.
- Supply chain risk has moved beyond traditional concerns that focused on the supplier.
- Procurement managers will have to develop ever-more sophisticated tools to deal with changing global supply chains.
- Awareness of the need for leadership in relation to supply chain risk needs to spread across the whole organization.

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*Risk mitigation
strategies must
change*

Recommendations

The increasing complexity of the global business environment and the speed at which it changes means that businesses will have to modify their view of risk mitigation in relation to supply chain risk.

1. Procurement managers have to build models that move beyond the traditional 'supplier-centric' focus to include all risks that can affect the supply chain, including natural disasters.
2. Monitoring risk levels in individual countries (i.e. political, economic and commercial trends) is increasingly advisable.
3. Businesses have to widen responsibility for managing supply chain risks so that these risks are considered across all parts of the company (including the design, sourcing and manufacturing functions).
4. Businesses should review contingency plans for responding to short-term supply chain threats in order to manage the risks posed by complex supply chains and by over-reliance on a single supplier.

Introduction: the World Keeps Changing

For nearly 20 years, procurement executives have watched their supply networks extend and become more complex and interrelated. Their responsibilities have grown from merely ensuring the supply of inputs to meet short-term needs (as was formerly the case) to a position where they must also be concerned with cutting costs, maintaining/improving quality, and ensuring that the supply network is positioned to support the company's strategic goals.

In an increasingly global business environment, where operations and suppliers are located in many time zones and embody a host of different cultural norms, procurement executives face multiple layers of complexity when it comes to ensuring supply. In order to achieve the highest standards of procurement performance, organizations need to understand and respond to risk and opportunity based on factors well outside their traditional expertise, including political, macroeconomic and commercial risk. The impact of these factors on the supply chain is now as much a part of the supplier-centric strategy as financial stability and the performance of suppliers themselves.

This paper highlights how country risk is assessed; defines the factors affecting global risk in 2011; analyses what this means for the supply chain; and outlines a discipline/best practices for managing the impact of global risk factors on the supply chain and supply networks.

Short-Term Factors Affecting Supply Chains

In early 2011, the global business environment appeared to have weathered the worst of the 2008-09 storm. The prospects of a double-dip recession were receding rapidly, although risks remained on the downside. However, a number of events since early 2011 have highlighted just how fast risk can change for procurement managers. These events include: 1) political instability in the Middle East and North Africa; 2) economic factors; 3) the earthquake and tsunami in Japan; and 4) new trends in piracy in the Indian Ocean. These developments have all created new challenges for global supply chain managers.

*New factors are
affecting supply
chain risk*

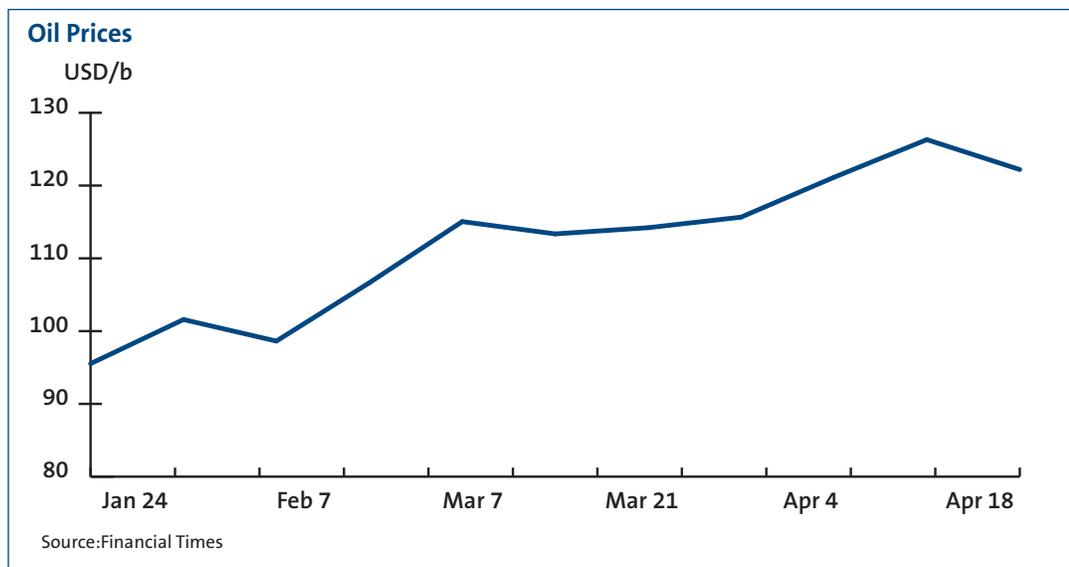
Political Instability in the Middle East and North Africa

The political success of the Tunisian revolution set a dangerous precedent for authoritarian regimes in MENA, with Egypt following a similar path: large crowds gathered in the country's main cities to protest against deteriorating living conditions, corruption and authoritarianism; despite the relatively peaceful management of the protest by the security forces, the death toll amounted to around 150 by early February. Under pressure from the military, on 11 February President Hosni Mubarak stepped down and handed over power to the Supreme Council of the Armed Forces (SCAF), led by former Minister of Defense Mohamed Hussein Tantawi. The SCAF dissolved the parliament, appointed a committee to amend the suspended constitution, and committed to holding elections within six months. Although demonstrators cheered this military coup, there are significant concerns regarding the real intentions of the SCAF, which is made up of high-ranking officers linked to the previous regime; the outcome of the transition is still extremely uncertain.

Unrest in the Middle East hikes oil prices...

A widespread outbreak of regional instability creates major difficulties at the best of times. However, when the instability occurs in a region that sits on top of 61.1% of the world's total oil reserves and 45.0% of total natural gas reserves, and which produces 35.3% of total oil production and 18.9% of natural gas output (according to energy company BP's Statistical Review of World Energy), the markets start to worry about interruptions to supply. Oil and gas supplies from Libya have been curtailed since the outbreak of the civil war there, and this was reflected immediately in oil and gas prices. Oil prices rose from under USD95 per barrel (/b) on 24 January to over USD125/b in mid-April (an increase of over 30% in just twelve weeks). Furthermore, the price had been only USD70/b as recently as late August 2010.

Although we do not expect the situation in the Middle East and North Africa to deteriorate significantly in the short term, it should be remembered that in the 1970s a number of events (the outbreak of the 1973 Arab-Israeli conflict, a tanker shortage, pipeline outages, surging demand and stagnant supply) conspired to create a short-term hiatus in the supply of oil, which led to energy- and fuel-rationing in some advanced countries.



...and leads to reassessment of the risks associated with emerging markets

The current political instability has also had a wider impact, with markets re-pricing risk in emerging markets as a whole. Previously, the association of authoritarianism with political stability meant that political risk premiums in these countries were unrealistically low. However, the unexpectedly swift fall of the regimes in Tunisia and Egypt highlighted the unsustainability of these low premiums. In 2010, capital had flowed into the emerging markets as they recovered more quickly than the advanced countries, sparking asset booms, but since late January 2011, and with markets now pricing political risk in emerging markets more realistically, regional stock markets have fallen and the price of raising debt (sovereign and corporate) has increased.

Commodity prices surge...

Economic Factors

Commodity prices more broadly have also risen over the past year as the global economy has undergone a slow recovery. Base metals such as copper have seen prices almost double since 2009, while gold and aluminum prices have increased by more than 25% in the past year. In addition, food prices are increasing strongly, driven by adverse weather conditions (including the floods in Australia and drought in China).

...and currency volatility continues

Meanwhile, one of the longer-lasting effects of the 2008-09 global crisis is the high level of currency volatility; this has been driven by a number of factors, including government policies to keep currencies under-valued in order to boost exports. China has been a major culprit, but the quantitative easing policies adopted by countries such as the US and UK have ensured that their currencies have also remained weaker than they should be. The Euro has also fluctuated wildly because of the continuing debt crisis in the periphery countries, including Portugal, Ireland and Greece.

Global industries have been hit by events in Japan

Japan

The effects of the Japanese earthquake, tsunami and nuclear reactor crisis have destroyed factories, damaged others and left existing factories short of power, all curtailing output: the automotive, electronic component and agricultural manufacturing sectors have been particularly hard hit. For example, Toyota's North American plants have had to scale back their working hours in order to conserve supplies of parts that are sourced from Japan. Moreover, around 60% of all silicone wafers (a key component in mobile phones) are made by Japanese companies, a fact that is threatening not only to halt technology production in China, but also to send the price of 'flash chips' soaring. Adding to the difficulties is the refusal of some shipping companies to enter Japanese ports because of the fear of radiation.

Percentage of Japanese Companies Affected by the Tsunami

		Tsunami-hit (%)
Agriculture	9.9	21.1
Construction	7.7	32.7
Manufacturing	6.2	36.9
Transportation	7.8	34.8
Wholesale/retail	6.9	37.0
Financial	6.2	40.7
Hotels/recreation	5.7	44.7

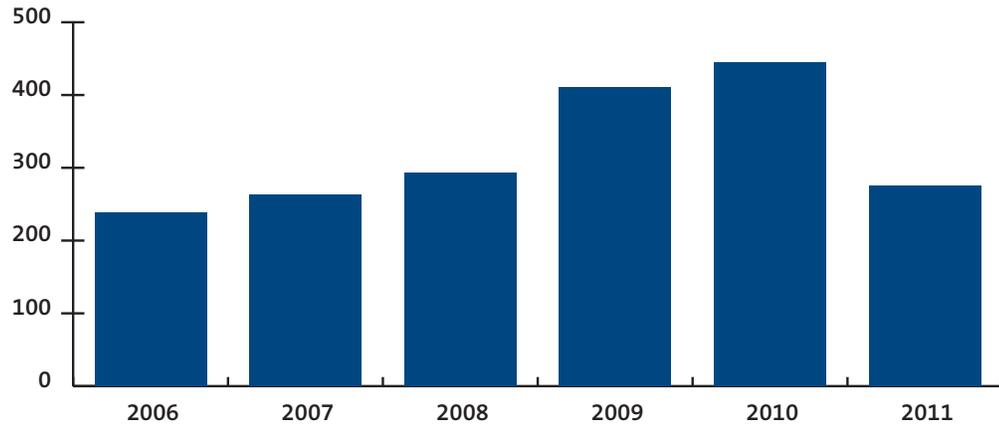
Source: D&B

*Increased piracy
threatens vital
oil routes*

Piracy

In recent months it has become apparent that international maritime forces have had relative success in policing the Gulf of Aden, which lies directly off the coast of Somalia, and which was the focus for the majority of pirate attacks in 2008 and 2009. However, this success has pushed the pirates to operate further offshore, and most worryingly in the area where the Gulf of Oman empties into the Indian Ocean, a stretch of water through which around 33% of the world's seaborne oil is transported: on average, 19 huge tankers pass through these shipping lanes every day. A quick glance at the International Maritime Board's piracy maps shows how quickly the problem has escalated. Already in 2011 there have been five attacks and a further seven attempted attacks in the area. For comparison, in the whole of 2010 there was just one attack (and a further five attempts), while in 2009 just one incident was reported in total. Importantly, piracy is not restricted to this area but is also a problem in the waters off the west coast of Africa, as well as around Indonesia, Malaysia and Singapore.

Actual and Attempted Piracy Attacks, 2006 to Date¹



Note: ¹2011 data are to 14 April.
Source: ICC International Maritime Bureau

As a result of these attacks, shipping companies are facing increased insurance and security costs, which have to be passed on to customers in some form. In addition, the new focus around the Gulf of Oman is set to raise concerns in the oil market, adding further upward pressure to prices.

What This All Means For Supply Chains

From a longer-term perspective, structural issues that have occurred over the past three decades are set to continue (e.g. cutting costs through the use of cheap labour, computerization that enables complex supply chains to be easily monitored, and just-in-time delivery systems). In the shorter term, important questions need to be addressed with regard to the impact on supply chains of the changes that have affected the global economy as a result of the 2008-09 downturn, along with the risks facing the world in 2011. A number of trends can be seen.

Threats

Disruption to supply chains has increased recently on four levels; 1) threats to oil supply in the Middle East and North Africa at the mouth of the Gulf of Oman; 2) threats to supply lines in general through strikes and demonstrations as countries cut back on government spending; 3) disruption to the global automotive industry because of the situation in Japan; and 4) increased piracy. These threats will create extra pressure to simplify production processes through innovation, shortening supply chains through repositioning factories, and moving away from reliance on a single supplier.

Will it still make sense to outsource production to low wage economies as risks start to outweigh the benefits of cheap labour costs? For example, it might make sense to centralize production in areas closer to the main market of the output. The shortening of supply chains will also be encouraged by increased transportation costs as the price of oil rises, and by high levels of currency volatility (which create additional risks related to cross-border activity).

Market sentiment moving against emerging markets will also raise risk for supply chains. Fears of bursting asset bubbles and rising interest rates will put companies in such countries at greater risk of profit deterioration and cash flow problems, and will eventually lead to higher bankruptcies.

Inflation, in general, increases risk throughout supply chains for three reasons. First, it raises social and political tensions, ranging from the overthrow of regimes in the Middle East and North Africa to large-scale demonstrations and strikes in European countries such as the UK, Greece and Ireland. This unrest creates the conditions for short-term interruptions to supply chains, putting at risk just-in-time delivery systems. Second, inflation reduces profits for businesses, threatens cash flow and undermines payment performance. Third, as inflation climbs, central banks and governments come under more pressure to increase interest rates, raising the cost of borrowing for businesses. This also impacts negatively on profit, cash flows and payments performance across businesses, thereby affecting their ability to meet orders.

Opportunities

However, the oil price spikes in the 1970s and the 1980s highlighted that oil price rises also lead to significant opportunities. The decade saw the temporary end of the gas-guzzling car, with the Japanese automotive industry gaining control of the compact family car market in the US and Europe. The latest price spike will see a renewed interest in energy conservation and renewable energy sources, thus creating opportunities for companies in these areas. The disaster in Japan will also offer fast-acting companies in the automotive and electronics sectors the chance to move into markets vacated by their Japanese counterparts. These developments will all create opportunities for developing new supply chains over the next few years.

Disruption to global supply chains means rethinking production processes, location and suppliers

Profits/cash flow are threatened by asset bubbles and interest rates...

...while inflation and deteriorating payments performance are also threats

Traditional focus on the supplier...

Best-Practice Procurement Disciplines

Beyond the Supplier-Centric Focus for Ensuring Supply Stability

In striving to reduce the likelihood of unexpected problems, procurement organizations have traditionally placed the greatest emphasis on solutions and strategies that reduce the types of risk that can ultimately be connected directly to suppliers, namely:

- **Supplier failure:** the inability of a supplier to fulfil its supply commitments on time, or supplier financial failure/bankruptcy, resulting in disruptions in production or customer fulfilment; and
- **Supplier product quality failure:** defined as quality problems in supplier operations, leading to product defects and the need for recalls, as well as public health and safety concerns.

...needs to expand to embrace a broader risk-mitigation strategy...

These supplier-focused analytical frameworks have indeed made it possible for companies to detect, understand and act on the warning signs that a supplier may be in trouble well before those issues affect the supply chain. However, the past 12 months have shown, more clearly than ever, that supply stability can often be at the mercy of factors outside the control of the supplier. Political unrest in the Middle East; pirate attacks in the Indian Ocean; and volcanic ash shutting down air traffic across Europe have all had a significant impact on supply chains. What all of these events illustrate is the need for world-class supplier management to move beyond a too-narrow focus on supplier-driven instability.

...that includes country risk

Given the geographical extent and complex interconnectedness of supply chains, there is a compelling need to integrate real-time intelligence and insight about country risk: that is, the political, economic and commercial shifts in a country that have consequences for the broader supply picture. Understanding when and how shifts in conditions outside the control of the supplier will impact that supplier's ability to deliver as promised (and making timely decisions based on that deeper view) is becoming the new standard for supplier management excellence.

Close monitoring helps reduce uncertainty...

Close Monitoring Can Ensure Supply Stability

The good news is that influences on supply stability generally evolve over a period of time. This means that they can be anticipated (provided you have the correct level of monitoring) and planned for with a degree of certainty (with the exception of natural disasters). Monitoring the changing levels of political, economic and commercial risk in key countries/regions gives procurement organizations new intelligence that can both fuel better relationships with existing suppliers and provide the business overall with a deeper understanding of the environment into which it wishes to expand.

...from events such as Ireland's financial meltdown

In 2010, the acronym 'PIIGS' became a business media phenomenon, when the weakest countries in the European Union (EU), suddenly (or so it appeared) became victims of the global recession. Portugal, Ireland, Italy, Greece and Spain all faced serious financial crises, but the EU had no financial structure to deal with the situation, exacerbating the uncertainty and instability in the region. Decisions to slash social programmes caused protests and government shutdowns in the following months, and even as recently as April 2011 the call for the EU and IMF to provide funds to Portugal, and Moody's downgrading of Ireland's bond ratings to near-junk status, mean that the crisis keeps evolving.

But was this crisis in the EU 'periphery' really so sudden? In the case of Ireland, the signs of an impending crisis began six months before the actual events. For electronics manufacturers, who continue to rely heavily on Ireland as a reliable source of manufacturing and as a strategic entry point into European markets, the situation was potentially serious. With a lead time of six months, procurement organizations have the latitude needed to make decisions about reallocating capacity, and finding (and ramping up) alternate sources of supply.

Organizational thinking needs to change to reduce supply chain threats

Most organizations have on hand someone who will see a supply chain-related issue, grasp it, and champion it. The identity of that 'someone' varies across organizations: sometimes the role falls under the remit of the CFO, and sometimes it's the domain of the CPO. However, in order to most effectively mitigate risk, this responsibility needs to come out of those 'silos' and be embraced across the whole organization: whether you are in the design, sourcing or manufacturing function, you are likely both to be exposed to supply chain threats and to be able to mitigate those threats through the appropriate level of monitoring of the factors that affect you.

The Discipline for Global Supply Stability

Few businesses have plans to deal with the unexpected

A recent survey of elite manufacturers conducted by D&B Supply Management Solutions found that while these business leaders understand the potential impact of unforeseen events on supply stability, 80% are limited in their ability to respond quickly, and only 20% have clearly-defined plans in place to deal with the unexpected.

Information remains essential to coping with the ups and downs of supply stability. The core information captured in the supplier on-boarding process provides the foundation:

- Who am I doing business with?
- Where are they headquartered?
- Where are their operations located?
- Where are their suppliers located?

Critical to ensuring completeness and accuracy of these profiles is the ability to depend on third party certification of the supplier provided data. This is especially important in emerging economies where infrastructure and business processes are relatively immature.

Effective monitoring and predictive analytics...

With a robust and reliable base profile of the supplier network in place, procurement executives can then design more sophisticated monitoring (integrated with predictive analytics) in order to be forewarned (and forearmed) regarding changes to the environment in which the supplier does business that may affect the supplier's ability to continue meeting their commitments.

...should include country risk assessment...

Monitoring in this context has to consider country-specific risk data that looks at all the factors that affect the risk for investing or doing business with cross-border counterparties in that country in three over-arching categories: political, economic and commercial. The D&B Country Risk Indicator provides a comparative, cross-border assessment of the risk over a time horizon of two years.

Political risk assesses the internal and external security situation, policy competency and consistency, and other such factors that determine whether a country fosters an enabling business environment.

Economic risk assesses factors such as real GDP growth, the inflation rate and government balance, along with fiscal and monetary policy, all of which determine if a country is able to deliver sustainable economic growth and a commensurate expansion in business opportunities. The current account balance, capital flows, foreign exchange reserves, size of external debt and risk of default, and all such factors that determine if a country can generate enough foreign exchange to meet its trade and foreign investment liabilities are assessed.

Commercial risk assesses factors such as sanctity of contract, judicial competence, regulatory transparency, degree of systemic corruption and other factors that determine whether the business environment facilitates the conduct of commercial transactions.

Customers have to shift from a supplier-centric view of risk...

Continuous monitoring and the use of predictive analytics to keep abreast of the most critical suppliers and those regions where a disruption would have immediate and significant impact on the business overall increasingly differentiates companies in the global marketplace. By adopting tools and applications that significantly accelerate the time required to transform data into insight and predictive metrics, businesses become much better positioned to evaluate and determine which global markets to stay away from and which global markets can drive competitive advantage.

...to build a culture of awareness over threats to supply chains...

First, it is vital to realize that the changes in the global business environment triggered by the global financial crisis, natural disasters and increasing global piracy could have far-reaching consequences for global supply chains. Customers, if they have not already done so, need to shift from a supplier-centric view of supply chain risk to a more holistic one that builds in plans to deal with natural disasters, and which monitors and responds to changing levels of risk in individual countries and regions.

...and simplify production, shorten supply chains and use multiple suppliers

Second, companies have to build a culture across the business to ensure everyone is aware of the threats to the supply chain. Thus, it is necessary to broaden responsibility for monitoring changes in supply chain risks to encompass all stakeholders who are dependent on the supply chain.

Third, given the increasing number of threats to the long, complex supply chains that have evolved over the past thirty years, businesses need to look at all aspects of the supply chain. Managers should consider simplifying production processes through innovation, shortening supply chains through repositioning factories, and moving away from an over-reliance on a single supplier.

Feedback

We greatly value your feedback on how relevant you find our analysis and focus. To tell us how effectively this special paper addresses the issues facing your business, email us at **CountryRiskServices@dnb.com**. If you have any suggestions for future areas of coverage that would be of use to you, we will be happy to consider them.

Our Team and Products

D&B Country Risk Services has a team of trained economists dedicated to analyzing the risks of doing business across the world (we currently cover 132 countries).

We monitor each country on a daily basis and produce both shorter analytical pieces (Country RiskLine Reports), as well as more detailed 50-page Country Reports. For further details please contact Country Risk Services on **1.800.234.3867** or email **CountryRisk@dnb.com**.

D&B Supply Management Solutions offers the tools and expertise trusted by more businesses with global supply chains for focused and predictive insights to help certify, monitor and analyze suppliers, and mitigate risk. Whether you need supplier insight to manage risk, diversity, compliance or information, you can leverage D&B's vast resources and expertise throughout the supplier lifecycle management process. For further details, please visit www.dnb.com/supplymanagement or email us at **supplymanagement@dnb.com**.

Additional Resources

The information contained in this publication was correct at the time of going to press. For the most up-to-date information on any country covered here, refer to D&B's monthly International Risk & Payment Review. For comprehensive, in-depth coverage, refer to the relevant country's Full Country Report.

This paper was jointly written by: D&B Country Risk Services and D&B Supply Management Solutions

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