Foreword

Rapid globalization has increased the interconnectedness of risks. Events that occur in one industry or country can now rapidly transmit to other industries around the globe. In 2011, both the earthquake and tsunami in Japan and the floods in Thailand caused not only immense losses in these countries, but disrupted sourcing and manufacturing in industries around the globe.

Globalization has introduced fundamental systemic risk into corporate supply chains which are threatened by natural catastrophes, pandemics, cyber risks or terrorism. The very flexibility and cost-effectiveness that give a modern supply chain its strength and competitive advantage also create its vulnerability to disruption. The only way to deal with this threat is to develop better supply chain risk management systems even if these might add some cost back into today’s very lean processes. Organizations need to consider the necessary trade-off between business efficiencies and operational redundancy.

Not only are companies re-examining how to better mitigate disruptions in the future, but insurers are also reassessing risks in their portfolios. Their key concern is a potential accumulation of risk – or the potential of one catastrophic event triggering multiple insured supply chain-related losses.

In this report, Allianz Global Corporate & Specialty (AGCS) examines the complexities of supply chains, how natural catastrophes and other perils are increasingly putting them at risk, and what that means for both insurance and industry. The study investigates how industry can make supply chains more resilient and outlines the evolving role insurers should play in the process.

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Contents

01 Foreword
05 Executive Summary
06 The ripple effect
Insurance is one tool for managing costly and common supply chain interruptions
11 Take cover
Business interruption coverage is a necessity, not a luxury when managing supply chain interruption risks
14 Mission critical
To maintain business continuity companies must identify key suppliers and prepare for disruptions
21 Information is key
Robust data collection, greater transparency and active risk management will ultimately benefit all parties
26 Two-way street
Insureds need to move beyond the simple filling in of forms for quicker claims processing and payments
29 Leading the evolution
Gap in business interruption insurance is being addressed by emerging non-damage policies

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Globalization has introduced fundamental systemic risk into corporate supply chains which are threatened by natural catastrophes, pandemics, cyber risks or terrorism. The very flexibility and cost-effectiveness that give a modern supply chain its strength and competitive advantage also create its vulnerability to disruption. The only way to deal with this threat is to develop better supply chain risk management systems even if these might add some cost back into today’s very lean processes. Organizations need to consider the necessary trade-off between business efficiencies and operational redundancy.

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Gap in business interruption insurance is being addressed by emerging non-damage policies
Managing disruptions
Supply chain risk: an insurer’s perspective

While insurance can provide cover for some of the losses faced by business disruption, dependence on insurance alone is a risky strategy. Coverage for financial losses does not take account of a loss of market share, declines in investor confidence, or share price losses caused by the failure of a key supplier. The impact of these blows can be just as devastating, if not more so, to a business than financial losses on their own.

To cover all bases, companies must improve their risk management strategies to manage stakeholder interests after a business interruption. Robust business continuity plans will go some way towards validating supply chain resilience in the event of a breakdown in these links. Companies should also look to improve supply chain resiliency by adding redundancy, even if that process adds cost back into previously stripped back supply chain calculations. Sourcing alternative suppliers in advance of a chain collapse will increase a company’s preparedness, while resiliency can be further improved by ensuring where possible that the chain contains no single supplier sourcing.

Insurers support these risk management strategies as a means of reducing their exposure to an accumulation of risk. Under business and contingent business interruption covers insurers are increasingly finding that the ripple effect of one event can affect multiple insureds and therefore lead to high losses. Insurers want and need to better understand supply chain risk and are encouraging companies to provide improved information about their critical suppliers and their risk management approaches.

While the sharing of supply chain resiliency data can, for some companies, be a bitter pill to swallow because of the perceived propriety value of the information, reciprocal data sharing with insurers will ultimately improve relationships, facilitate claims handling, and ensure that capacity (at prices which accurately reflect risk) is available in the insurance markets. Co-operation and transparency in equal measures have already resulted in the emergence of alternatives to traditional business interruption and CBI coverages and this trend can be expected to continue as relationships between insurers and insureds mature further.

Executive Summary

Today’s global supply chains work to an ever tighter set of interdependencies, with ‘just-in-time’ and ‘lean manufacturing’ now standard practices. This evolution, combined with an increasing trend to source globally and with a rise in disruptive natural catastrophes, has led to growth in business interruption and contingent business interruption. Manufacturers are increasingly being caught out by the closure of critical suppliers, a trend which has both insurers and businesses concerned.

Today’s supply chains work to a ‘just-in-time’ mentality.
Managing disruptions  Supply chain risk: an insurer’s perspective

THE RIPPLE EFFECT

Intrinsically linked, revenues, profits, reputation, market position, and share price are seen as the pillars of corporate resilience: a blow to any of these props could cause serious problems for a company and its management team. Yet, all are at risk of crumbling if an organization cannot maintain its supply chain of raw materials or critical component parts in the wake of a natural catastrophe, an information technology breakdown or labor strife.

In a global sourcing world, disruption in one part of the world is rarely contained to that area; the ripple effect of localized devastation, disorder or calamity has the power to significantly damage international business interests.

Paradoxically, while complex supply chains are designed to minimize production costs, their reach from a manufacturing plant in one part of the world to an off-shored or outsourced operation in another makes them a conduit for catastrophe-related disruption. The impact of a disturbance at the manufacturing end of the chain is almost immediate, but the knock-on impact follows rapidly down the supply chain to other companies and it can take years for affected companies to recover fully. That loss can be only partially protected by insurance.

As an example, PC manufacturers located thousands of miles from Southeast Asia suffered significant losses in 2011 because of the massive flooding in Thailand. Floodwaters, three meters deep in some places, drove suppliers of hard drives for PCs out of their factories for months. With those suppliers producing 45% of the world’s computer hard drives, PC manufacturers either had to slow their production or purchase hard drives at a higher cost from other suppliers located elsewhere in the world.

According to market research and consulting firm IHS iSuppli, the flooding slashed computer hard drive production by 30% and shipments by 27.7% in the fourth quarter of 2011. The drop in shipments exceeded the 21.2% decrease in 2008’s fourth quarter, the worst point of the last downturn in the electronics industry.

Paul Carter, Global Head of Risk Consulting at AGCS, attributes today’s supply chain vulnerability to the development of business strategies that promote the ideas of “lean manufacturing” and “just-in-time” supply: “In reality, this means rationalizing supply, centralizing distribution, and even holding virtual inventories. In addition to these strategies, there has been an increasing trend to source globally, in order to reduce costs yet further, all along the chain. This has become the dominant economic model, but its success has been achieved at the expense of a significantly increased risk of disruption within companies’ overall supply chains. The very flexibility that provides the supply chain with its cost advantages has also caused its inherent vulnerability.”

The ripple effect

Insurance is one tool for managing costly and common supply chain interruptions

“The very flexibility that provides the supply chain with its cost advantages has also caused its inherent vulnerability.”

Paul Carter, Global Head of Risk Consulting

The flooding in Thailand swamped seven industrial parks around Bangkok, causing worldwide shortages of technical components.
Catastrophes are no anomalies

The flooding in Thailand was just one of 820 catastrophes that caused record economic and insured damage in 2011. More than 800 people were killed and more than 7,700 square miles (20,000 kilometers) of farmland—an area the size of Slovenia—were damaged by the floods, according to reports from the country. The flooding also swamped seven industrial parks around Bangkok with up to 10 feet (3 meters) of water, causing worldwide shortages of components for automakers and computer manufacturers. The flooding caused more than $45 billion of economic damage, according to World Bank estimates3, of which about $10 billion was insured.

Earlier in the year, the powerful earthquake-triggered tsunami and nuclear disaster in Japan claimed nearly 16,000 lives, with thousands more still missing, according to Japan’s National Police Agency4. More than 129,000 buildings were destroyed, and 945,000 more were damaged, the agency estimates. The disaster was the insurance industry’s biggest loss in 2011 at $35 billion to $40 billion5.

Combined, these two events rank among the four worst catastrophes ever, along with Hurricane Katrina and the 1995 earthquake in Kobe, Japan, according to World Bank and NOAA figures6. While the number of events in 2011 was 20% fewer than the record 1,025 in 2005, the 2011 events caused a record $380 billion of economic damage, only $105 billion of which was insured. However, the record-setting devastation in 2011 was not an anomaly. The number and level of destructiveness of catastrophes have increased steadily over the past three decades. According to Munich Re, there were fewer than 400 events in seven years during the 1980s. Then, in every year from 2000 to 2011, there were more than 600 events, and there were more than 800 events in six of those years. In 2005, there were more than 1,000 events7.

Munich Re calculates that annual economic and insured losses averaged $75 billion and $19 billion, respectively, during the 31-year period. During the last decade, however, annual economic losses averaged $113 billion, and annual insured losses averaged $35 billion. This can be partly attributed to economic growth, which has driven natural catastrophe losses, and significant increases in insured values and insurance density, according to Tina Baacke, Global Head of Catastrophe Risk Management at AGCS. “Across the globe, trends like urbanization and coastal/flood plain development increase the overall loss potential due to the high risk of windstorms and floods,” says Ms. Baacke. “Socio-economic changes combined with rapidly developing technology and increasingly global supply chains create growing potential for losses and a threat to business continuity.”

In spite of this evolving socio-economic environment, 2012 is shaping up to be a more moderate year compared with the previous year when it comes to catastrophe losses. Compared with the same period last year, overall first-half 2012 losses were significantly lower at $26 billion of total economic damage, $12 billion of which was insured, according to Munich Re.

Socio-economic changes combined with rapidly developing technology and increasingly global supply chains create growing potential for losses and a threat to business continuity.”

Tina Baacke, Global Head of Catastrophe Risk Management

Slimmed down

Stripped to the bone, lean supply chains are vulnerable to common and costly disruptions. The UK Business Continuity Institute’s (BCI) Supply Chain Resilience 2011 survey of 559 companies in 62 countries evaluated supply chain disruptions over the previous year8. It found that 85% of survey respondents experienced at least one supply chain interruption during the previous year and that a significant percentage of respondents reported that their disruptions were not resolved smoothly.

Nearly half, 49%, reported productivity losses, 38% reported higher costs, and 32% noted a drop in revenues. BCI’s survey respondents also reported other long-term problems because of supply chain disruptions: some 19% said shareholders were troubled, and 11% said they would likely face increased regulatory scrutiny.

In a survey of 559 companies in 62 countries, 85% of respondents reported experiencing at least one supply chain disruption over the previous year. Nearly half of the respondents reported productivity losses, 38% reported higher costs, and 32% noted a drop in revenues. The companies also reported other long-term problems because of supply chain disruptions: some 19% said shareholders were troubled, and 11% said they would likely face increased regulatory scrutiny.

Two-pronged approach

Companies can address this risk of financial loss either through business interruption insurance or contingent business interruption insurance. Business interruption insurance covers lost profits after a company’s own facility is damaged by an insured peril, while contingent business interruption (CBI) insurance covers lost profits if an insured peril skips over the policyholder’s own facility but shuts down its critical supplier or a major customer. For large companies, insurers typically provide both coverages as part of policyholders’ property insurance. Business interruption and CBI losses typically account for 50% to 70% of catastrophe losses9.

However, while insurance is an important risk management tool for companies with complex supply chains, taking out insurance should not be seen as a panacea, as ACCIS’s Paul Carter explains: “The best defense against supply chain risk is a combination of ‘prevention’ and ‘cure’: insurance will address part of the risk, but practical risk management is also essential to prevent or at least reduce that risk.” Business interruption and CBI insurance typically only cover supply chain disruptions resulting from a physical loss or damage to insured property. Consequently, standard BI policies do not cover other disruptive events without a physical loss such as power and telecommunication outages, information technology problems and labor strike. Also, standard insurance cannot restore an eroded market position after a policyholder’s customers have turned to competitors that did not have to curtail production after the event, and it cannot re-inflate sagging share values after investors have lost confidence in a company’s ability to manage its way through adversity.

Source: Supply Chain Resilience 2011, The Business Continuity Institute

An earlier academic study10 adds to the weight of evidence that supply chain disruptions can be the root cause of performance-related costs for many years after the event. According to the study, companies which suffered a sustained supply chain disruption operated at a lower performance level for at least two years after the interruption. Companies suffered median downturns of 42% in operating income, 32% in returns on sales, and 35% in returns on assets. In addition, the studied companies saw sales growth drop 7%, inventories increase 14% and costs rise 11%. Share values also took a hit, falling between 33% and 40% during the same period. Here, the academic study co-author Vinod Sinhal notes that in some cases share prices began dropping before supply disruptions were announced because investors became aware of a problem even though they did not yet understand the root cause of it.
Managing disruptions  Supply chain risk: an insurer’s perspective

TAKE COVER

Take cover

Business interruption coverage is a necessity, not a luxury

In an increasingly fast-paced business environment, the domino-effect of supply chain disruption on business productivity and profitability can be extremely damaging. To mitigate potential damage, companies can seek cover through business interruption and contingent business interruption coverages, both of which provide property insurance policyholders important financial protection in the aftermath of a supply chain disruption. However, there are some significant distinctions between the coverages, how they apply to policyholders with different levels of risk and how the two coverages are written in different parts of the world.

Essentially, both business interruption and CBI insurance cover the net profits a property insurance policyholder loses after an insured peril damages or destroys a covered property and interrupts production there. Both protections also cover some ongoing costs for the policyholder, such as wages, building lease or mortgage costs and other fixed costs.

Business interruption insurance responds when the policyholder owns the property that is damaged or destroyed. Typically, policyholders can tap their full property insurance policy limits to cover their business interruption losses.

CBI insurance responds when the affected property is controlled by a supplier or customer that is important to the policyholder. In that loss scenario, the insured’s own property is undamaged.

Forms of business interruption

Standard Business Interruption: covers the loss of income that a business suffers after a physical damage at the same facility.

Interdependency: covers the loss of income when a direct physical loss at one of the insured’s facilities disrupts operations at another facility.

Contingent Business Interruption: covers the loss of income of an insured when a supplier or a customer suffers a physical loss resulting in disruption of the insured’s own business.

Major sources of supply chain disruptions

<table>
<thead>
<tr>
<th>Percentage of firms suffering disruption caused by listed incidents</th>
</tr>
</thead>
<tbody>
<tr>
<td>51% Adverse weather (windstorm/tornado, flooding, snow etc)</td>
</tr>
<tr>
<td>21% Unplanned outage of IT or telecommunication systems</td>
</tr>
<tr>
<td>21% Transport network disruption</td>
</tr>
<tr>
<td>18% Earthquake/tsunami</td>
</tr>
<tr>
<td>15% Failure in service provision by an outsourcer</td>
</tr>
<tr>
<td>15% Loss of talent/skills</td>
</tr>
<tr>
<td>15% Product quality incident</td>
</tr>
<tr>
<td>12% Volcanic ash cloud</td>
</tr>
<tr>
<td>11% Insolvency</td>
</tr>
<tr>
<td>10% Civil unrest/conflict</td>
</tr>
<tr>
<td>9% Industrial dispute</td>
</tr>
<tr>
<td>9% Fire</td>
</tr>
<tr>
<td>8% Cyber attack (e.g. malware, DDoS attack)</td>
</tr>
</tbody>
</table>

Source: Supply Chain Resilience 2011, The Business Continuity Institute

Rather than relying on insurance, companies can avoid or mitigate the risk to business continuity by building resiliency into their supply chains. In this respect, the natural catastrophes in Japan and Thailand delivered a wake-up call to businesses that suddenly found their supply chains compromised through events that were very much out of their control. Consequently, since 2011, many corporate executives have turned their attentions to monitoring and managing supply chain resiliency. The results of the AGCS 2012 Risk Barometer support this trend: corporate executives’ second-most feared risk is business interruption; only economic risk concerned the survey’s respondents more.

Business interruption as top corporate risk

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11% Cyber attack (e.g. malware, DDoS attack)
However, CBI insurance would be triggered if the insured is still forced to slow or halt production – and therefore loses profits – because the supplier with damaged operations cannot deliver critical raw materials or parts, or the customer does not request the parts from the insured. Insurers typically offer policyholders sub-limited CBI coverage, or limits that are lower than the property insurance policy’s full limits.

Both insurances also provide cover for external perils too, which could include natural catastrophes – such as hurricanes, earthquakes, flooding and landslides – and fire.

It is certain types of external peril such as earthquakes or hurricanes which can be critical considerations for any policyholder. “Those perils could be quite different from those that threaten the policyholder domestically, so the policyholder’s broker and its insurer should factor those risks into the coverage to ensure adequate protection.”

For example, an industrial risk located in inland Iowa might consider instructing its broker and insurer to omit earthquake and hurricane coverage in a premium cost-cutting move, since those perils do not seriously threaten the U.S. Midwest. But the policyholder should first determine whether it has an important operation or supplier in another part of the world, such as China or Japan, that is susceptible to these perils. If the policyholder itself is not insured against a peril, its business interruption and CBI coverage would not respond if that peril knocks one of its own operations or a supplier’s facility offline.

While all property insurance policyholders can expect the basic elements of business interruption and CBI coverage, the breadth of coverage a policyholder has under either coverage will depend on various factors, including the nature of the insured’s operations and where the policyholder is based. While industrial concerns generally have broader coverage than commercial enterprises – insurers typically write all-risk policies for industrial insureds, meaning the policyholder is covered for a loss resulting from any peril except those the policy specifically excludes – there can be coverage exceptions in the policy forms that insurers offer some industrial risks.

**Different wordings**

Insurers typically offer industrial risks located in Germany, Austria, Switzerland and Japan ‘named peril’ policies, or policies that cover losses resulting from only the perils the policies list. Policies written for industrial risks in those four countries usually cover losses caused by fire, wind, hurricane, earthquake, tsunami and flood and have additional named perils, which bring them close to an all-risk wording. In the United States, insurers typically exclude from their all-risk policies losses resulting from earthquake, flood and wind but then add back those coverages to policies through endorsements.

The policy forms for business interruption that insurers offer clients located in different parts of the world are also written based on two different concepts. Generally, the two coverage forms are the gross profits form, used in Europe and Canada, and the gross earnings form, used in the United States, Mexico and Australia.

Under the gross profit form, the insurer covers the policyholder’s lost profits until its damaged facility is repaired and operational. “So, the policyholder’s lost profits are covered for an undefined period but only until production resumes – the policyholder’s technical recovery – regardless whether net profits have been restored,” explains Timon Mueller, Head of Property Underwriting in the United States.

Under the gross earnings form, the insurer covers a policyholder’s lost profits until its damaged facility is repaired and operational. “But, the policyholder’s lost profits are covered for an agreed period of indemnity, which could be between 12 to 36 months. Of course, if the policyholder recovers its profits levels before the end of its indemnity period, coverage would end at that time. Coverage also would halt at the end of the indemnity period even if the policyholder had not fully restored its earnings levels.

In any case, the policyholder must demonstrate the profit it would be earning during the indemnity period. For example, because of changing economic or market conditions, its profits might have decreased during that period even if the company had not sustained a loss. The insurer would cover the profits the company could reasonably have expected to earn during that period.

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**Pushing the limits**

Limits for business interruption insurance vary strongly according to the industry, type of company and value of assets – as well as geographically and by the relative risk exposure of the insured premises. Typically, BI limits range from over $100 million to over $2 billion for a 24-month recovery period. For CBI, limits are lower, typically covering sums ranging from under $10 million to around $50 million, but can extend up to hundreds of millions of dollars.

**Policy forms for business interruption differ**

**Gross Profits**

- Completion of Repairs
- Indemnity Period
- Value of Lost Production and Sales (covered)
- Resumption of Normal Business (Economical Recovery)
- Date of Loss
- Time
- Decrease in production

**Gross Earnings with Extended Period of Indemnity (EPI)**

- Completion of Repairs
- Technical Recovery
- EPI
- Period of Interruption
- Sales Value of Lost Production (covered)
- Resumption of Normal Business (Economical Recovery)
- Date of Loss
- Time
- Decrease in production

Timon Mueller, Head of Property Underwriting Americas, has over 25 years of insurance experience, all of it with Allianz. In 2011, he assumed the current role with responsibility for the entire Corporate Property book of business in the United States, Canada and Mexico.
Mission critical

To maintain business continuity companies must identify key suppliers and prepare for disruptions

The Japanese earthquake and tsunami and the Thailand floods of 2011 revealed just how vulnerable global supply chains have become. Overnight, companies were left without crucial components or raw materials, which dented profits and reputations of companies that were geographically remote from the sites of the actual catastrophes. Business continuity planning suddenly took on new relevance for companies that rely on third party suppliers for their trade to continue.

Insurance coverage is certainly a powerful component of risk transfer, ensuring that companies have sufficient liquidity to manage any disruption, but it is only one component of a wider risk management plan to support the recovery of companies after a supply chain disruption. Today, companies are taking an increasingly professional approach to addressing specific risks by listing key suppliers and their production locations, running through catastrophe scenarios, applying geocoding, and developing business contingency plans.

Testing the chain

This supply chain vulnerability has developed over the past 20 to 30 years, in line with evolving processes that have minimized any so called ‘waste’ within the overall chain. This has led to the development of business strategies that promote the ideas of ‘lean manufacturing’ and ‘just-in-time’ supply. In reality this has meant supplier rationalization, centralized distribution and, in the most extreme cases, virtual inventories.

There has also been an increasing trend to source globally in order to further reduce costs all along the chain. The Thai floods and Japanese earthquake and tsunami are just two recent events that highlight the risks associated with this slimmed down approach. The global economic crisis, the swine flu epidemic, and the volcanic eruption in Iceland have also tested the resilience of supply chains in recent years.

In many companies, procurement departments tend to focus more on the cost of their organization’s supply chains than on risk of a major disruption. Often, management finds it challenging to determine where their suppliers’ production facilities are actually located and what business continuity plans those suppliers have in place. Taking the example of a typical car manufacturer, which can have several thousand suppliers, which often change quickly and come with their own spread of sub-contractors, the challenge of establishing supply chain resilience is understandable.

It is this far-reaching network that makes up-to-date Business Continuity Plans (BCP) plans essential for both the company and its suppliers and these plans should also be regularly tested. However, companies that currently employ Business Continuity Planning as an integral part of their procurement and supplier selection process are in the minority, according to the BCI survey. This is unfortunate as a sound business continuity plan can build more resiliency into supply chains.

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An essential part of the risk assessment is determining where those suppliers’ production facilities are located. Mr. van der Zwaag points out that while in many cases a company has information on where its suppliers are headquartered, those locations can be far from where their production facilities operate.

“Knowing the physical location of a supplier’s manufacturing facilities is essential in recognizing their susceptibility to threat,” he says. “This is especially important as companies based in the United States and Western Europe begin exploring regions and suppliers outside of China and Southeast Asia – where labor costs have been rising – and consider other emerging markets such as Vietnam or Bangladesh as future supplier locations.” However, companies should carefully analyze a country’s infrastructure and its susceptibility to natural catastrophes, Mr. van der Zwaag adds, and share that analysis with brokers and insurers as requested.

Within the supplier selection process the contracting company also should examine the supplier’s own business continuity plan to determine whether the contractor has acceptable risk mitigation measures in place. In reviewing its critical suppliers and their risk management programs, the contracting company should ask itself: ‘Is this a risk we can accept?’ says Mr. van der Zwaag.

Many companies contend that business continuation reviews are embedded in their supplier selection processes. “However, the audit process is often not detailed enough when it comes to second- or third-tier suppliers,” says Mr. Carter. Indeed, the BCI survey suggests there is a lot of room for improvement here: only about 7% of respondents said that all of their critical suppliers had business continuity plans in place.

Critical supplier criteria
Percentage of companies that use these criteria to identify their key suppliers

- Financial impact of non-supply over a period of time
- Interdependencies with other suppliers
- Regulatory compliance impact
- Reputation impact
- Time taken to change to alternative supplier
- Strategic nature of product/service supplied
- Interdependencies with other suppliers
- Key people/knowledge involved
- Maturity of the industry
- Availability of other suppliers
- Location of suppliers
- Bespoke nature of product/service supplied
- Scale of spend

Source: Supply Chain Resilience 2011, The Business Continuity Institute

With thousands of key suppliers automotive supply chains are highly complex.
To mitigate risks caused by disruptions companies should consider lining up an alternative to a critical supplier in advance, as finding a new supplier in the midst of a crisis situation could be challenging. If a natural catastrophe damages a number of suppliers in the organization’s industry, the business could be competing against its competitors for whatever capacity is available on the market. And even if a potential alternative supplier is found, then certifying that it is capable of meeting the organization’s quality standards can be time-consuming.

While finding an alternative supplier in advance will undoubtedly incur additional costs, one option is to contract with a supplier in advance so the contractor has already been certified and has capacity available as soon as a company loses a critical supplier. However, redundancy of critical suppliers does not necessarily make a supply chain resilient in the wake of catastrophe. Businesses should view the location of an alternative supplier as just as critical as having a replacement lined up. This was an issue for companies with suppliers in Thailand, notes Damien Pang, Regional Manager of Claims for the Asia/Pacific at AGCS. “Many companies that lost their critical suppliers in the floods that swept across Thailand during the second half of 2011 did have additional suppliers – but they were in Thailand, too,” he says. “However, many organizations are more or less forced to put all eggs in one basket because of the clusters of suppliers for various goods around the globe.”

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Damien Pang, Regional Manager, Claims – AGCS Asia/Pacific region.

Rethinking supply chain management: How Siemens managed disruptions after natural catastrophes in Japan and Thailand

Dealing with disturbances and interruptions in the transport process has always been a key logistics issue. Like a blocked artery, sudden bottlenecks can occur in global supply chains, and although they may start out as minor problems, they can very quickly lead to a major system failure that shuts down the entire network.

Martin Bellhäuser works at Siemens Supply Chain Management, where he’s responsible for coordinating the decision-makers in the company’s global supply chain in the event of a crisis. He tells how Siemens successfully managed business interruption after the earthquake and tsunami in Japan.

Once Siemens knew its 2,300 employees in Japan were safe, specialists began to examine the disaster’s impact on the logistics chain. “The picture was pretty clear – we had no production facilities of our own in the affected region and also very few suppliers, although some of these were responsible for delivering urgently needed key technologies,” Mr. Bellhäuser explains. The systems in question included components for process control technologies and film capacitors, which are essential for many different types of circuit boards. “We coordinated closely with the suppliers in question, who regularly provided us with status reports on repair work,” says Mr. Bellhäuser. “This enabled us to quickly access extensive information about the estimated production downtimes for each component. We were then able to react accordingly.”

Siemens also transferred some of its component orders to alternative suppliers in order to reduce pressure on its suppliers in the affected region. This in turn allowed Japanese suppliers to focus on urgent repair work. In cases where alternative manufacturing plants couldn’t make up for component shortages, Siemens began to purchase parts on the open market. “For instance,” Mr. Bellhäuser recalls, “we experienced a bottleneck with regard to LED displays. Our procurement people reacted quickly by buying the necessary components on the open market. In the end, excellent communication and the exemplary support we received from our suppliers enabled us to get through the terrible catastrophe in Japan with virtually no damage to speak of. There were no major production shutdowns whatsoever.”

What lessons did Siemens Supply Chain Management learn from the events in Japan? “The most important thing we realized is that you risk having major problems if you use only one supplier for a certain component,” says Mr. Bellhäuser. “That’s why we’re making a greater effort to reach agreements with other suppliers in regions prone to earthquakes and other disasters so that we can fall back on them in emergencies.”

“You risk having major problems with only one supplier for a certain component.”

Martin Bellhäuser, Head of Governance Framework at Siemens Corporate Supply Chain Management.

“Your risk having major problems with only one supplier for a certain component.”

“Many organizations are more or less forced to put all eggs in one basket because of the clusters of suppliers for various goods around the globe.”

Martin Bellhäuser, Head of Governance Framework, Siemens Corporate Supply Chain Management.

“The floods in Thailand in the fall of 2011 also showed us how dangerous it is when a component that is needed at manufacturing facilities around the world is mainly procured from only one region.”

Thailand produces more than one third of the world’s computer hard drives and production is concentrated in the region around Bangkok. The disastrous floods in the region shut down virtually all production facilities in a very short time. The delay estimates of many major suppliers such as Seagate, Hitachi, Toshiba, and Western Digital plummeted. The latter two firms cut their delivery forecasts by around 50%. This resulted in an unprecedented rise in the prices of hard drives and a huge decline in earnings at the manufacturers.

Western Digital, the world’s leading manufacturer of hard drives, has reported that it won’t return to pre-disaster production levels until September 2012.

The floods in Thailand have made it obvious to everyone that even though clustering – i.e. the concentration of similar industries in the same region – can reduce transport costs and generate positive synergy effects, it can also cause huge economic disruptions. Suppliers around the globe will have to rethink their clustering strategies in certain regions in the future if they want to achieve more effective crisis management.

Copyright: Siemens AG, Pictures of the Future Magazine, Spring 2012. An excerpt from the original article “Information lifelines”. 
A different tack

The lesson from those supply chain disruptions is not to “jump from the frying pan into the fire” when developing a business continuation plan, Mr. Carter says. “The cheapest location will not necessarily be the best option for an alternative supplier,” he says. “The additional cost to bring manufacturing back into areas such as Eastern Europe may be worthwhile to ensure that capacity is available in an emergency.”

However, in some circumstances there may simply be no alternative to a defined critical supplier. In such a situation, a manufacturer might consider holding a few months buffer stock of materials or parts from that supplier. If holding that much inventory is not practical, the manufacturer’s business continuity plan should then detail how the company might modify its production until the supplier restores its operations. Perhaps a different component can be substituted for the one that is no longer available. Or if using an alternative component is not feasible, perhaps a larger-scale part substitution would work. Finally, if modifying production is also not possible, the manufacturer could consider increasing its marketing of another product that is comparable to the one that can no longer be produced.

Ensuring that a supplier can deliver consistently and on time is one of fundamentals of supply chain risk management. Investigations into shipment times, modes of transport, carriers and re-routing procedures in the event of a disaster should all be standard practice for supply chain risk managers. However, any measures designed to mitigate supply chain losses come at a price, and “that’s completely at odds with the lean manufacturing model,” Mr. Carter says. “But I think companies will realize, because of the impact of interruptions, that at least having an alternative supplier in a more developed country can be worth the cost.”

“I personally believe we’re seeing a move toward where some major manufacturers are bringing some production back under their control,” he says. “There are the first examples of companies actually buying their suppliers after realizing their supply chains are too lean, too stretched and too complex.” While buying critical suppliers is not financially possible for many organizations, companies do not have to go to that extent to make their supply chains resilient. Indeed, companies putting together a resilient supply chain can look beyond the finances of the system, Mr. Carter adds. More risk managers understand this, especially after the catastrophic events in 2011. Companies that are serious about adding resiliency to their supply chains take a holistic approach in examining them, bringing not only their procurement departments into the examination but also their finance, legal, governance and information technology departments.

Robust data collection, greater transparency and active risk management will ultimately lead to lower premiums

Property insurance policyholders’ newfound attention on supply chain risk management is encouraging to insurers. Given that business interruption- and supply chain-related losses typically account for half and sometimes up to 70% of insured property catastrophe losses, insurers are beginning to put much greater weight on supply chain risk when underwriting large industrial clients. Another key concern for insurers is their accumulation of risk—or the potential of one catastrophic event triggering multiple insured supply chain-related losses. The data on suppliers that insureds have to generate to build greater resiliency into their supply chains is the same data that is critical to insurers in better managing their exposure to supply chain-related losses.

Identifying and sharing this information is a new approach for both parties. But the severity of supply chain disruption in 2011 on the back of natural catastrophes has prompted industry and insurers alike to consider new ways of mitigating risk in the future, including data sharing, collection of more data, better analysis of the same, and more effective action on strengthening supply chains.
With the failure of key suppliers multiple insureds around the globe can be affected

Insurers want policyholders to be transparent with that data for two reasons. First, it gives insurers a clearer view of whether a policyholder understands who its critical suppliers are and what risks those suppliers face. With sound data, the policyholder can develop a business continuity plan that would allow the company to stay in operation even if a key production facility or supplier unexpectedly closes down.

The second but equally critical reason insurers want to examine this data is so they can accurately gauge how much supply chain risk they have in their portfolios. Insurers do not want to carry a financially unsound accumulation of risk. “In many cases, we do not have adequate data and therefore face challenges,” says Volker Muench, Global Head of Strategy and Development Property Underwriting. And it’s not only insurers that are keen on better understanding their accumulation of risk in order to right-size their own portfolios to an acceptable accumulation-of-risk level. Reinsurers and insurer rating agencies are also asserting more pressure on insurers. Reinsurers are concerned because their own risk accumulations are multiples of the many insurers they reinsure, while rating agencies want to better understand this risk, because in recent years they have reinsured, while rating agencies want to better understand this risk, because in recent years they have reinsured, while rating agencies want to better understand this risk, because in recent years they have reinsured, while rating agencies want to better understand this risk, because in recent years they have reinsured, while rating agencies want to better understand this risk, because in recent years they have reinsured, while rating agencies want to better understand this risk, because in recent years they have reinsured, while rating agencies want to better understand this risk, because in recent years they have reinsured, while rating agencies want to better understand this risk, because in recent years they have reinsured, while rating agencies want to better understand this risk, because in recent years they have reinsured, while rating agencies want to better understand this risk, because in recent years they have reinsured.

The bigger picture

Even with that data, calculating accumulation of risk is challenging. Supply chains have evolved over the past two generations to become extremely complex — and not just because they stretch around the world into regions increasingly susceptible to natural catastrophes. They are also at risk from other perils, such as information technology or telecommunication outages, transportation network disruptions and civil strife. In addition, policyholder chains incorporate suppliers with their own risk management issues and their own supply chains, which are also at risk of disruption. “Calculating the accumulation of risk is a lot more complicated than it used to be for insurers,” Mr. Muench says.

Consider a peril such as a fire. Just a few decades ago, that peril typically hit only one policyholder at a time. So a fire usually did not pose an accumulation-of-risk problem for insurers. But a fire that shuts down a key supplier for a particular industry now takes on far more significance for an insurer. The incident could trigger an avalanche of CBI losses among the insurer’s policyholders that were supplied by the stricken company.

That scenario developed in spring 2012, when a deadly fire and explosion crippled a chemical plant in Germany. The plant produced almost half of the world’s supply of a chemical necessary for a nylon compound used in producing heat-resistant fuel and brake lines for automobiles. Immediately after the fire, the company estimated that its plant would be down for three months. This triggered an emergency meeting by auto manufacturing executives in the Detroit area in April to establish how the industry would respond to the resulting shortage in fuel and brake lines. Since much of the industry engages in just-in-time manufacturing, automakers and their parts’ suppliers had no significant inventory of the brake and fuel lines or the nylon compound to produce those vital auto parts.

Natural catastrophes pose an even greater accumulation-of-risk problem for large insurers. A disaster like flooding, an earthquake or a hurricane will likely damage or destroy the operations of numerous policyholders or a cluster of suppliers of critical component parts for a group of policyholders in the same industry. If that cluster of suppliers supports a large segment of an insurer’s policyholders, that accumulation of risk will mean a huge loss for the insurer.

Property insurers faced that scenario in 2011 when a significant portion of the world’s suppliers of hard drives for PC manufacturers were closed down for months after floodwaters inundated much of Thailand. Because of supplier clusters like that, insurers have to make sure they are not writing coverage for an excessive number of policyholders that have contracted with suppliers within a geographical cluster.

In order to best establish where those sorts of risks lie, policyholders and insurers must develop a better understanding of which suppliers are critical to keeping production lines in operation and where these suppliers’ production facilities are located. They also need much better risk management information about those suppliers. At the top of that list of necessary information is where those suppliers’ facilities — not just the suppliers’ corporate headquarters — are located, and what supplier business continuity plans the policyholder has in place to remain in operation if faced with a disruptive event.

Manufacturers sometimes refer to companies in their supply chain as tier-one, tier-two or even tier-three suppliers. The terms indicate the commercial distance in the relationship between the manufacturer and supplier. A tier 1 supplier is the immediate vendor directly used by a company, and tier 2 is a vendor to tier 1 and tier 3 is actually supplying tier 2. Although supply tiers can apply to any industry, these terms most commonly describe manufacturer and supplier relationships in the automotive industry.

Cluster effect

The biggest picture

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Volker Muench, Head of Strategy and Development Property Underwriting

Cluster effect

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The latest BCI study \(^1\) bears out that many policyholders need far more data on their suppliers. According to The BCI’s findings, 19% – or nearly one in five – of 559 respondents from 62 countries was not strongly confident they could identify their key suppliers.

Insurers also need a better understanding of their policyholders’ actual supply chain flow charts, since suppliers sometimes offshore and outsource work just like the manufacturers they supply. Many insurers cover CBI losses attributable only to tier-one suppliers with a higher limit or those suppliers that contract directly with the policyholder. This is particularly critical as many supply chain disruptions originate below tier-one suppliers and for those an even lower limitation applies within insurance contracts.

In partnership

AGCS is currently engaged in several data initiatives designed to expand the insurer’s understanding of its exposure to supply chain risks. The development of better data on what materials, component parts and production facilities are truly critical to a company’s business continuity will play a key role in assessing a company’s preparedness and will also enable insurers to better identify their own accumulation of risks. Some initiatives center on policyholder data. “We approach clients now about what level of information they can provide us,” says Mr. van der Zwaag. “Essentially, we ask companies to list their critical suppliers and the location of their production facilities.”

A difficulty that AGCS has encountered, though, is that policyholders could be reluctant to disclose the supplier information needed to evaluate supply chain resiliency. In some cases the data is not readily available. Other insurers find difficulties providing the data because of its proprietary value. Those clients say they would suffer significant harm in their marketplace if their competitors got hold of the information.

AGCS is developing tools (including working with universities) to help determine the probability of a supply chain interruption whenever information on a client’s supply chain is not or only partially available. Such tools will deliver the minimum information required to provide coverage. However, the insurer still cannot determine from such exercises how many policyholders contract with those suppliers. “The issue isn’t the availability of modeling tools,” Mr. Muench says. “It’s getting the data from policyholders to plug into the models.”

Going forward, if their business interruption and CBI insurance is to be properly underwritten and rated, policyholders will have to get comfortable entrusting insurers with that sensitive data. Right now, most are not. “We acknowledge that it is a difficult task, as often several thousand suppliers are listed,” Mr. Muench says. “But both parties need to start working on this right now. What matters is a pragmatic approach and to create a win-win situation.”

It is obvious that uncertainty will cost more in future, whereas greater risk transparency and active risk management will pay off in terms of increased capacity and lower premiums. In return, insurers must develop practical methods of data retrieval and processing, ensure confidentiality and actively relate the findings of their risk assessments back to the policyholders.

Automotive Supply Chains

| 15 - 30 Automotive Manufacturers |
| 500 - 1,000 Key Suppliers |
| 30,000 - 100,000 Suppliers of other parts, components, etc. |

Source: Munich Re

While such measures certainly help mitigate the impact of disaster, a residual risk always remains and it must also be considered. The question is, how and to what degree can the complexity of modern production philosophy be included in an insurance company’s calculations? There are several variables here that make total control next to impossible, for instance: the complexity of interaction, the number of suppliers involved and the rapid improvement of production chains. Certainly, making a proper assessment requires real data on supply chain risk. But since this data is subject to constant change, assessing and modeling this risk is difficult. This, in turn, gives rise to another challenge: providing the insured with a clear understanding of how and why the data provided is interpreted by the insurer.

“While risk assessment is challenging due to the highly complex and volatile nature of automotive supply chains, Daimler aims to engage in risks dialogue with the insurance industry, says Dr. Hanns Martin Schindewolf, CEO & Chairman Daimler Insurance Services GmbH.

“Major global car manufacturers like Daimler must monitor their supply chains very closely to keep the production chain running smoothly. Throughout the automotive industry, companies are acutely aware that any interruptions to business could have a negative financial impact and, worse still, harm their reputation. This is why effective and efficient risk engineering is essential.

Recent incidents such as the earthquake in Japan and the floods in Thailand further strengthened the view that all stakeholders should be involved in the risk management process. Today, our corporate risk management applies a range of measures to minimize our exposure to supply chain interruptions and create transparency. This, we believe, is the basis of modern risk management. We consistently improve smart prevention techniques by identifying regional exposure to natural hazards and classifying the individual parts of the supply chain based on levels of risk. Where necessary, preventive measures such as dual sourcing can be implemented which enable us to improve our response time in the event of an emergency. By establishing crisis mechanisms and task forces that pool expertise and resources, we can ensure that decisions are made quickly and effectively.”

Dr. Hanns Martin Schindewolf, CEO & Chairman Daimler Insurance Services GmbH.

In spite of these challenges, I believe that better aggregation, smarter analysis and further integration of already available data are decisive for the insurance industry. More and better-structured dialogue between corporate risk managers, controllers, engineers and the insurance industry should be the way forward. By acting as a “translator of information” between Daimler and the insurance market, our in-house broker enables us to further enhance our risk management. We aim to engage in regular dialogue on our risk management practices with the insurance industry. This is because dialogue creates transparency, and transparency creates trust. Ultimately, cultivating a relationship based on trust reaps benefits for manufacturers and the insurance industry alike.”

Hanns Martin Schindewolf, CEO & Chairman Daimler Insurance Services GmbH

The question is, how and to what degree can the complexity of modern production philosophy be included in an insurance company’s calculations?”

**Managing disruptions: Supply chain risk – an insurer’s perspective**
Two-way street

Insureds need to move beyond the simple filling in of forms for quicker claims processing and payments

When a catastrophe, natural or otherwise, significantly dents a manufacturer’s capacity, recovery will hinge on an expedient claims payment. But the speed of claim process rests on how engaged the insured is with its insurer. For any policyholder to recover its business interruption or CBI losses with little or no delay, the insured must look beyond simply filing a claim form; expedient claims payment depends on several factors the policyholder controls.

In that respect, how agricultural vehicle parts producer Titan Italia responded after earthquakes damaged one of the company’s manufacturing plants in Italy in May 2012 is a model for other policyholders that want to ensure a smooth and quick claims-payment process, according to Dr. Andreas Shell, Global Head of Claims Short-tail at AGCS.

Two powerful earthquakes in Italy’s Emilia-Romagna region heavily damaged Titan Italia’s manufacturing plant in Finale Emilia. Titan Italia, an important supplier of agricultural vehicle parts in Europe, produces tractor wheels and other parts at the Finale Emilia plant. Equipment at the facility, including production robots, survived the tremors, but damage to the plant would take about six weeks to repair. Because many roof-support columns either were structurally compromised or shaken loose from the foundation, management decided that the facility would be unsafe for production workers until repairs were complete.

Titan Italia had business interruption coverage, yet management reacted aggressively to minimize its losses. Recognizing that insurance would cover lost profits but cannot restore a company’s market position, management took several steps to prevent losing significant market share to competitors. Especially important was holding on to the company’s position in the market for large tractor wheels. Few manufacturers outsourced. Management also quickly arranged to stabilize the plant’s roof with 126 temporary iron girder support devices to prevent any additional damage that could further delay restarting production at the facility in Emilia-Romagna.

In partnership

Taking swift and professional action following damage is critical, because available insurance limits might cover only a portion of losses, and no coverage will protect or restore market share after the indemnity period.”

Joachim Hufenreuter, AGCS Senior Loss Adjuster

The company diligently kept track of all of these additional expenses and turned over a file with detailed figures to AGCS. “As far as dealing with insurance, I believe it is imperative to communicate using solid facts and information on what has been done and what has been planned,” Managing Director Cecilia la Manza explains. “Dealing with insurance is like dealing with customers or suppliers; you need to be clear, honest and transparent.”

Titan Italia’s bold moves and attention to detail allowed AGCS Senior Loss Adjuster Joachim Hufenreuter to assure the company of an advance payment on its claim when the plant had been repaired to a sufficiently safe level for him to inspect it, far earlier than might otherwise have been the case. “Taking swift and professional action following damage is critical, because available insurance limits might cover only a portion of losses, and no coverage will protect or restore market share after the indemnity period,” Mr. Hufenreuter says. Therefore, ‘active damage limitation’ benefits the policyholder as well as the insurer.

Taking back control

How can insureds reduce property losses in the event of an incident? Andreas Shell, Global Head of Claims Short-tail at AGCS, advises other policyholders facing a business interruption loss to:

• Open a cost center in its accounting department to centralize data on its loss-related expenses so the data is quickly available and complete when filing claim.
• Provide the insurer access to the damaged site.
• Communicate clearly and often with the insurer.
• Be transparent. Exaggerating claims to maximize an insurance recovery only creates more work for the insurer as it examines and attempts to reconcile the claim with data provided by its own experts.
• Refrain from bringing in an attorney early in the claims process. If the insurer and policyholder are not disputing a claim, introducing attorneys “can stifle the claims process,” Dr. Shell says. The greater the cooperation between the policyholder and its insurer, the faster claim is resolved, he says.
Water rules
Flood losses can also pose a potentially significant claims-handling problem, but here too issues can often be resolved before they develop. Business interruption claims stemming from the flooding in Thailand during the second half of 2011 underscore the issue. Many manufacturers with operations in Thailand to produce parts had business interruption insurance that covered flood losses. But some policy language in those companies’ global master insurance programs was not well suited to be applied in Thailand, which led to claim disputes, Dr. Shell explains. Thai regulations require that any insured risk in the country must be underwritten by an insurer located in the Southeast Asian nation.

After the flood claims came in, the local insurers paid the flood limits they wrote. Then, the insurers participating in the policyholder’s master coverage would examine whether there were difference-in-condition limits or difference-in-limits coverage under the master policy – either of which could provide the policyholder an additional insurance recovery beyond the amount the local policy provided. In many master policies, more flood insurance limits are available when the insured risk is located in a moderate-hazard flood zone rather than in a high-hazard flood zone.

Thailand, however, is one of many countries outside of the United States and Western Europe where flood zones are not officially charted and classified by risk level. When covering flood losses in those countries, insurers examine various meteorological and geological data that indicate how often and severely a specified region floods. Dr. Shell says, The flooding risk that insurers calculate determines whether the master policy provides additional coverage.

Some policyholders, however, contend their insurer’s calculations are inaccurate. Those disputes have delayed some claim payments by a half year or more beyond the normal two- to five-month claims-resolution period in some cases, Dr. Shell says. “That’s why an advance classification of the flood zone where a facility is located is needed, especially when the facility is a critical supplier,” he says.

Time and tide
While there is certainly more to a smooth claims process than filing a claim, Dr. Shell emphasizes that filing a claim – and soon after a loss – is also important. Some insureds, especially those with CBI losses, do not focus on their claims until long after they suffer the loss. Instead, they understandably concentrate on reestablishing their broken supply chains. In some cases, a policyholder waits so long to file a claim that the supplier that sustained damage is back in operation by the time the insurer receives the claim. Such lengthy delays in reporting claims can cause claims processing delays, because investigating the circumstance surrounding a loss becomes increasingly difficult for an insurer the older a loss is.

Dr. Shell does not suggest that a policyholder neglect reestablishing its broken supply chain just so it can file an insurance claim, but he advises insureds to submit at least a notice of a claim as soon as possible. The insurer then can begin its portion of the process and examine the loss when it is fresh and details about the loss are easier to obtain.

Policyholders are masters of their own destiny when it comes to claims processing expediency and a transparent relationship with an insurer will certainly aid prompt payments. Accurate and timely claims, evidence of a determination to minimize business disruption, and a clear understanding of what is covered all combine to improve claims outcomes, whatever the business interruption might be.

Gap in interruption insurance is being addressed by emerging non-damage policies
Business interruption and contingent business interruption insurance have helped companies maneuver through what otherwise would have been crushing supply chain disruptions. Without the coverage, policyholders would have lost millions of dollars of profits with no certainty of ever recouping it. But as policyholders demand coverage that will respond to even more perils than those addressed by traditional business interruption and CBI insurance, new forms of covers are evolving.

Since the inception of business interruption and CBI insurance, which is provided through property insurance policies, the coverage trigger for both has been property damage resulting from perils such as fire, earthquake, windstorm and flooding. Damage at the policyholder’s own property triggers business interruption coverage and damage to property controlled by a policyholder’s supplier trips CBI coverage. But many more perils that are not covered can also shut down a policyholder’s own operation or a supplier’s facility, causing a costly supply chain disruption. According to The Business Continuity Institute’s Supply Chain Resilience 2011 study, these so-called non-damage perils are a bigger threat than natural catastrophes. For example, 41% of respondents cited unplanned outages of information technology or communications systems, 21% cited transportation network problems, 16% cited a loss of talent or skills and 10% cited civil unrest (see illustration on page 10) as significant sources of supply chain disruptions.

In a separate survey of more than 60 large corporations released in February 2012, forensic accountant and risk management consultant Dempsey Partners found the same issue. Dempsey reported that 61% of the survey’s respondents had suffered supply chain disruptions within the past five years but that insurance covered less than half the lost income and extra expenses as no physical damage was involved. It also found that more than half of the respondents had never recovered a supply chain disruption claim.
Managing disruptions

Supply chain risk: an insurer’s perspective

Different perspective

To bridge this gap, alternatives to traditional business interruption and CBI coverages now are emerging. AGCS has launched a policy to cover many traditionally uninsurable non-damage perils that have either disrupted supply chains in recent years or that risk managers fear could cause major disruptions, such as closed air space and political risk. The policy extends business interruption and CBI coverage to core non-damage scenarios including utility service interruptions, labor strikes, insolvency of suppliers and transport operators or actions taken by civil and military authority – such as closing air space because of a volcanic ash cloud or cordoning off areas.

This is not an off-the-shelf product but closely tailored to a client’s specific needs and strongly depends on the company providing data for the insurer’s accumulation control. To provide this non-traditional cover for business interruption that does not include property damage brings its own challenges, says Mr. Muench. "First, there is no historical data for conventional price modeling by our actuaries. This means that pricing can only be based on the judgment of our experts in Claims and Underwriting. Second, we have to allow for accumulation risks since, as with conventional business interruption solutions, whole regions or industry sectors can be affected. This means that we require a highly detailed understanding of our clients’ risks.” That means that the client needs to provide AGCS with information about its suppliers’ and customers’ sites and transport routes at a minimum. Thankfully, risk management is now so sophisticated among multinational groups that they are able to provide this data; this would have been unthinkable as recently as 10 years ago.

This evolution of data transparency and accuracy has helped insurers more precisely ascertain risk levels on non-traditional covers. This development has been the catalyst for emerging coverage of what were previously perceived as uninsurable risks. While this move has thrown up some of its own challenges, the progression to wider and more comprehensive covers is certain to continue as data availability and reliability further improves.

Ash disruptions

In April 2010, the Icelandic volcano Eyjafjallajökull generated an ash cloud disrupting European air traffic with rippling effects across the world. The International Air Transport Association (IATA) estimated that airlines collectively lost US$400 million per day in revenues during the three day peak period16, and absorbed a total loss of US$1.7 billion17. The Airport Operators Association (AOA) estimated that airports themselves lost US$128 million over the 6.5 day air traffic disruption15.

Importers and exporters of perishable goods such as flowers and fruits, as well as those in the pharmaceuticals industry were greatly affected. The Kenyan economy is one example, which was estimated to have incurred losses of $3.8 million each day of the air traffic disruption and was forced to destroy in total 3,000 tonnes of flowers19. Asian economies were affected by the shortage of deliveries as Nissan suspended the production of three models for a day and Honda announced a partial halt to production due to the disruption of supply of parts.

Overall economic impact totalled around US$5.0 billion in GDP, including productivity losses, air travel disruption, international trade and visitor spending.

“We have to allow for accumulation risks since, as with conventional business interruption solutions, whole regions or sectors can be affected.”

Volker Muench, Head of Strategy and Development Property Underwriting

In April 2010, the Icelandic volcano Eyjafjallajökull generated an ash cloud that disrupted European air traffic.
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