

Building supply chain resilience

The practicalities for the construction industry



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Welcome to the first of our construction community white papers. The idea behind bringing our construction sector customers, along with insurance and industry experts, together in an informal community is to share views on key risk management issues. That way, companies can learn from the experiences of their peers and we can support best practice approaches that benefit the whole community.

Perhaps one of the most significant challenges the sector faces lies in the supply chain. As supply chains extend and become more complicated, the desire to build greater resilience in them increases. This white paper highlights the need for a focused approach to risk management in supply chains and suggests actions to mitigate the risks.

As well as white papers, we intend to run webinars for the construction community to offer valuable insights and debate the issues you tell us are important.

Please contact us if you would like further information about supply chain resilience or if you would like to know more about our construction community, or to attend one of our webinars.

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Introduction

Volatile. Uncertain. Interconnected. Complex. Four words that commonly feature in discussions about the difficulty of managing supply chain risk in the construction sector. Views from the sector underline the challenge and highlight the need for a focused approach to risk management of supply chains.

In common with the issues faced by all sectors in managing a supply chain, construction faces specific problems that complicate the challenge of building resilience. These include the project-based nature of the work, contract requirements that change regularly and the sector's efforts to address the economic uncertainties of the boom and bust of the industry.

The construction sector recognizes that more action is needed to mitigate supply chain risk. It is a prime concern, according to StrategicRISK magazine's survey of risk managers in the construction sector, which found that nearly two thirds (63%) of respondents put supply chain risk at the top of their list.

Given the uncertainty and complexity in supply chains, the importance of having the right people making key decisions to manage risk is a priority for construction companies.

This construction community white paper looks at key vulnerabilities typically found in construction sector supply chains. It then outlines actions to identify, quantify and measure vulnerabilities that can help to mitigate risk.





Supply chain disruptions need to be better understood

The latest research by the Business Continuity Institute (BCI) on supply chain disruption affecting all sectors shows problems occur regularly.

According to the BCI's 2013 annual survey, 75% of companies said they have experienced supply chain disruption. Of these, 42% were linked to suppliers from below tier one. In other words, the problem lies a step further away from the control of the organization that will pay the price of disruption.

But introducing change to address the situation can be frustrating. This is evident in the largely unchanged average number of supply chain disruptions reported by businesses. The BCI's review of the last five years of its survey found 79% of organizations had experienced at least one supply chain incident in a given year over the period.

The regularity of disruption incidents suggests that although there may be plenty of actions available to tackle supply chain risk, businesses find it hard to take decisive steps that have the desired positive effect. There are numerous reasons why reducing risk is difficult.

A key factor that could provide a trigger for lasting improvements is identifying who should lead action to mitigate supply chain risk across the whole organization.

Risk v reward imbalance

If construction companies want to change their current approach, a significant

barrier they face is that views are often pre-determined at the outset of supply chain management. The balance of risk and reward in the way construction contracts are negotiated and awarded traditionally pushes risk on to contractors and their subcontractors.

If a contractor goes out of business, the repercussions on the success of a project and on the construction company leading it can be immediate. Smarter companies realize the benefit of taking as much risk as possible out of the equation rather than passing it on. This can be achieved through a combination of risk management and insurance.

A pro-active attitude is needed

The BCI's 2013 annual survey results underline the need for businesses to take more decisive steps to tackle supply chain risk. The Supply Chain Risk Leadership Council (SCRLC), in its 2013 report, says businesses should "move from being reactionary to being proactive and resilient". Risk issues should be "factored into your overall supply chain planning", it adds.

In its 2013 report the SCRLC identifies another major hurdle when multiple problems manifest themselves at the same time. "Recognizing the potentially devastating impacts posed by a multitude of diverse and growing risks, every smart business must consider and plan for unknown disruptions," it says.

75% of companies said they have experienced supply chain disruption. Of these, 42% were linked to suppliers from below tier one.

Source: BCI annual survey 2013.



What makes supply chain risk management different in the construction sector?

While companies in other sectors may face some of the following issues, construction sector companies often have to deal with all of them at the same time:

- Construction projects can have unique characteristics that place different and changing demands on supply chains.
- Strategic suppliers who are essential to the success of projects may be the sole source of material or expertise, with limited choice for dual sourcing or using alternative suppliers.
- Construction projects often feature multiple overlapping risks that include commercial, design, project, quality and safety.
- Responding to economic pressures by cutting costs can open the door to greater risks.
- Just-in-time manufacturing of products used in construction can place greater strain on supply chains.
- Increasingly complex supply chains with multiple contractors and subcontractors can add risk.

- The cyclical nature of the industry makes it harder to manage supply chains effectively.
- Although the quantity of locally sourced materials is often high in construction, there is a growing trend towards globally-sourced goods and services, with international transportation and infrastructure requirements.

More like manufacturing?

An emerging trend in the construction sector is for some major businesses to become manufacturers of produce materials. A production line fabricates assets that are then transported to the construction site. The aim is:

- to achieve greater quality control
- to improve product consistency
- to benefit from cost efficiencies.

Companies that opt for a manufacturing-style approach must get used to a new range of risks experienced with large-scale production. For example, reliance on key production assets which, if they break or if there are other issues at the production facility could severely impact a number of projects.

Who should be responsible for managing supply chain risk?

Identifying who is responsible for managing supply chain risk helps improve the understanding of disruptions and to gain a more in-depth appreciation of risks specific to the construction sector.

Personal relationships and collaboration are crucial to the successful management of supply chain risk. Companies in the construction sector tend to be characterized by separate sites, multiple divisions and operational 'silos' that may not communicate very well with each other.

Better communication and transparency about supply chain risks would improve the way disruption is tackled and avoided. Yet according to the BCI's 2013 annual survey, 68% of organizations don't have full visibility of their supply chain disruption levels due to a lack of company-wide reporting.

So who is – or should be – responsible for supply chain management? The Board and senior executives, risk directors, supply chain managers or project managers running individual contracts?

The answer is probably a combination of all key personnel. The problem, then, is not a lack of people charged with managing risk but perhaps a lack of communication, especially where responsibilities overlap, which can create a disjointed approach to sharing information.

Lead from the front

The BCI notes "one of the key challenges is to get consistent top management support for investing in improved supply chain resilience. Proactive leadership, not crisis management, is required."

A lack of clarity on ownership and governance exposes businesses to greater risk. And it can hide inconsistencies within organizations. For example, a company can have projects that are well run in terms of risk management due to the experience

of key individuals, while other projects suffer from a lack of such expertise. As a result, it can be harder to win business if customers make decisions based on their total experience of a company.

On global construction projects, the International Institute of Project Management (IIPM) says companies should identify risks by "looking at what lies beneath the tip of the iceberg". It identifies poor skills in planning, communication, stakeholder management, risk management and multi-culture management. The IIPM advises that risks are identified and discussed more often and are an item of project performance review meetings. www.iipmchenail.net

Strengthening supplier relationships

The importance of relationships extends beyond having a reliable internal communications framework. A construction company will have invested time and effort developing its corporate governance and risk ownership principles. But how does it ensure suppliers know and adhere to them?

Governance and corporate social responsibility need to be auditable across the supply chain in order for construction companies to meet their own targets – and demonstrate to customers and prospects that they do. The more complicated the chain, the harder it is to keep tabs on what suppliers are doing – or failing to do. A crucial aspect is to determine whether suppliers have the right skill sets and people in place to deal with risk issues.

One solution is to establish robust, well-documented processes with clearly mapped supply chains. These have to be flexible so they can be adapted quickly as situations change and communicated clearly with suppliers.



Proactive leadership, not crisis management, is required."

Nick Wildgoose, Global Supply Chain Product Leader, Zurich Global Corporate

68% of organizations don't have full visibility of their supply chain disruption levels due to a lack of company-wide reporting

BCI's 2013 annual survey



Five important building blocks for construction companies to plan into their supply chain risk management programme

Managing supply chain risk requires a well-planned step-by-step approach. This begins by building an in-depth understanding of disruption risks across the entire supply chain. It enables more informed decisions to be made on the most appropriate ways to mitigate risk. **Five areas of supply chain risk the construction sector should consider are:**

1 Changing political landscapes

Political uncertainty in eastern Europe and the Middle East and economic crises from Japan to Greece, have all lead to volatile prices and financial turmoil. This can place considerable strain on suppliers in countries affected by political and economic uncertainty. Any sourcing activity needs to take account of these political and economic challenges.

2 Climate change

The list of disruptive natural catastrophes grows all the time: floods, windstorms and severe winters. All can cause major problems to supply chain reliability. Recent natural catastrophic events exposed the weakness of supply chain resilience in many industries. For example, the Thailand floods indicated the interconnectivity in the automotive industry as production lines in Japan and the US were halted. There was also a significant impact on the computer industry due to the impact on hard disk production.

3 Know your suppliers – and their suppliers

Due diligence checks should extend beyond tier one suppliers to include the supplier's suppliers and subcontractors, who may be critical to a construction company's ability to perform. One aspect that is often overlooked during due diligence work is checking for open legal cases against suppliers. Carrying out legal checks is not an expensive exercise to carry out and can highlight unresolved problems a supplier faces, for example, on labour, intellectual property or environmental issues.

Checks should also determine a supplier's attitude to quality management and risk management. This is an opportunity to look at the size and experience of the supplier's workforce and the degree to which individuals are relied on in a particular contract. Also, suppliers need to display a proven track record managing assets and sites and demonstrate robust continuity planning should a disruption occur.

The approach of suppliers to risk management should be included in contract negotiations, in the same way that health and safety issues have become an important part of the assessment process. Risk management should appear in key performance indicators and service level agreements.

Corporate Social Responsibility (CSR) is a Board-level concern. A supplier should be a good cultural fit, display similar corporate objectives, especially in its environmental and corporate social responsibility goals.

It is useful to understand how important you are to the supplier. A major project for a construction company may only be a minor commitment to the supplier. This situation might raise doubts about the resources the supplier is willing to devote to risk mitigation in respect of delivery on behalf of their contractor customer.

Checks on financial risk management to safeguard supply chain resilience should be as comprehensive as possible. As well as standard checks using established sources, it is important to apply predictive techniques such as Z scores based on the latest financial statements.

4 Keep up with current legislation

Regulations that can affect supply chains are changing all the time, especially around import/export rules and transporting hazardous materials for example those based on Registration, Evaluation, Authorization & Restriction of Chemicals (REACH) regulations. (REACH is a European Regulation (No 1907/2006) that applies in all 28 Member States of the European Union. It also applies to Iceland, Liechtenstein and Norway as member countries of the European Economic Area).

Construction companies should have the latest data available to ensure they and their suppliers do not breach rules that could lead to penalties or disrupt the supply of goods and services.

5 Plan for business continuity

The BCI's 2013 annual survey shows that even companies committed to being better are not content with their continuity planning. A good plan is not difficult or expensive to devise and then review regularly. It is also critical that business continuity plans are properly tested within the context of the construction project.



Tools of the trade: methods to manage supply chain risk

A detailed assessment of risks facing suppliers/supplies enables action on the most vulnerable areas to be prioritized. Loss scenarios and the likelihood of specific risks occurring can be assessed. A company can then develop appropriate risk mitigation measures, using assessment and mapping tools identify the weak points where failure is more likely.

Assess and grade risk on a comprehensive basis

A supply chain risk assessment typically rates vulnerability in key areas (see graphic below). A thorough supplier/supply assessment helps businesses to identify quantify and benchmark risk exposures and prioritize the actions they need to take to mitigate these risks. This assessment also supports senior-level decision-making.

Chart your progress in reducing risk

The SCRLC provides a useful maturity model for businesses to identify where they currently are on the curve and where they need to be. The maturity model illustrates the 'journey' of managing risk in the supply chain.

Risk management is a journey

Supply Chain Risk Management (SCRM) Maturity Determines an Enterprise's Capacity to Address Emerging Risks

SCRM maturity level	Risks
Reactionary	All risks
Awareness	Traditional risks
Proactive	Non-traditional risks
Integrated	'Black Swan' events
Resilient	Major emerging trends/risks

Source: SCRLC

Mapping critical supply chains

Construction Industry research by Achilles Group Limited, which provides data and analytics to industry communities, found two in five companies that sourced only in the UK and one in five that sourced globally had no supply chain information beyond their direct suppliers. (www.achilles.com)

Achilles emphasizes the benefits of mapping supply chain risk that include seeing where risks converge in order to highlight potential single points of failure. Mapping risks increases awareness of how global events can disrupt supply chains.

The SCRLC recommends mapping critical supply chains for key supplies and suppliers that might pose the threat by being a single source of failure.

Assessing supply chain risk factors



Source: Zurich



“Transparency is one of the key areas to reduce supply chain risk.”

source: SCRLC 2013 report.

“Transparency is one of the key areas to reduce supply chain risk,” the SCRLC points out. (SCRLC 2013 report)

A solution is to ensure alternative supplies are readily available. Dual sourcing can provide effective ways to avoid a single point of failure in the supply chain but there is likely to be a marginal increase in cost associated with it.

Learn from near misses

Capturing data on the ‘near misses’ that almost disrupt supply provides a valuable source of information to avoid situations being repeated. It is important these lessons are shared with other projects and retained within an organization to be applied to future projects.

Follow international standards

According to the BCI, more companies now use ISO standards as benchmarks in their business continuity programs, expecting suppliers to meet them. But “the overall stance is still marked by a passive stance”, says the BCI

(BCI’s 2013 annual survey). Many construction sector companies are used to operating in accordance with ISO standards, so it should only be a short-step to ensure key supply chain partners match them. Using ISO standards as a benchmark can bring consistency and best practice approaches that help to reduce exposure to risk. A new American National Standards Institute (ANSI) standard on Best Practice Guidelines in supply chain risk management (June 2014) has just been released.

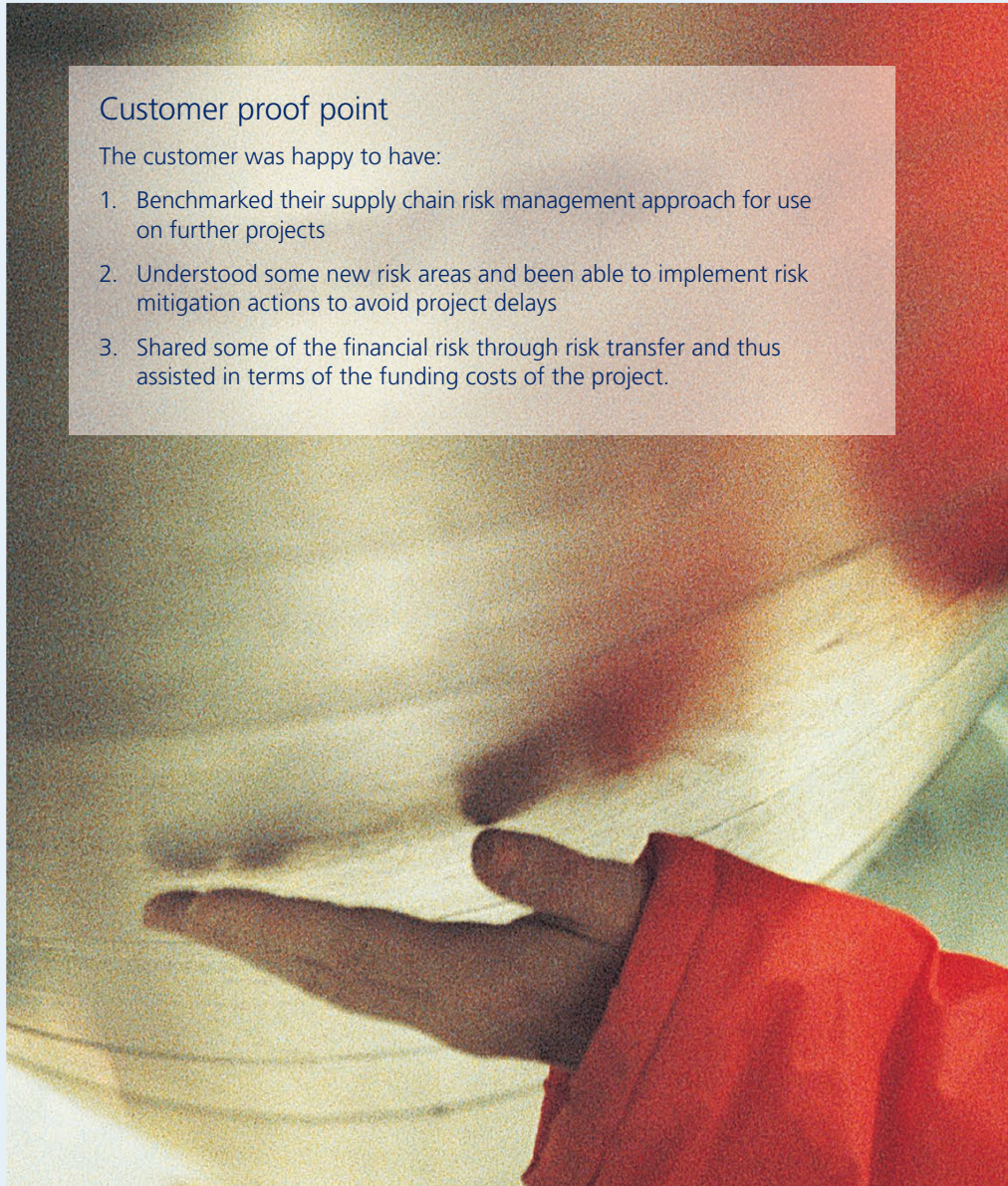
Learn from other sectors

Companies in sectors such as technology and automotive have a strong reputation for mapping supply chain relationships with key product providers in detail. Organizations tend to go beyond tier one (main supplier) to include suppliers’ suppliers. Their monitoring processes include checks on business continuity plans, for example, whether suppliers have alternative sites in place, and the resilience of their buildings and assets.

Customer proof point

The customer was happy to have:

1. Benchmarked their supply chain risk management approach for use on further projects
2. Understood some new risk areas and been able to implement risk mitigation actions to avoid project delays
3. Shared some of the financial risk through risk transfer and thus assisted in terms of the funding costs of the project.



Case study 1 – Zurich helps assess supply chain risk for a construction project in the Energy sector.

Embedding supply chain risk management in construction projects. The Energy sector faces critical challenges in terms of the completion of major construction projects in accordance with agreed timetables. There are often key pieces of capital or other equipment which are essential to a project.

Customer Challenge

The customer needed to deliver the project on time or face substantial financial consequences and wanted to understand the supply chain risks involved. It asked Zurich to assist in developing a comprehensive approach to understand the relevant risks to the project around the supply chain both from the direct suppliers but also from those lower down in the supply chain.

Zurich Solution

Zurich worked with a number of teams across functions in the customer company e.g. finance, procurement and risk to define an approach built around both its own processes and Zurich's well-established supply chain risk assessment framework. The project involved document and control reviews and supply chain risk workshops, to examine critical supplies, supplier management, risk management and



supplier relationships. Having identified key risk areas for the critical suppliers, supply chain risk profiles were developed for each using Zurich's Total Risk Profiling methodology.

The outputs were validated through various loss scenarios, following which Zurich consolidated the risks including relevant financial exposures and presented them to the customer. Zurich then facilitated a discussion to enable an examination of the key supply chain issues from a project perspective and the relevant additional risk mitigation actions that needed to be considered.

What was the outcome?

The result for the customer was a much better understanding of the financial exposures that might come from supply chain failure relevant to the construction project. They also understood what a number of the triggers might be to create these project delays and were therefore able to start mitigating them. They decided to cover some of the risks by making use of insurance coverage for the named supplier and supplies.

Case study 2 – Zurich helps build risk into multi million pound cost improvements in UK rail industry

Embedding risk into supply chain management of the UK rail industry.

The UK rail industry while successfully growing capacity, usage and train reliability over the last decade still remains complex. In 2010 a major independent report commissioned by the UK Government was published.

The purpose of this report is to examine the overall cost structure of the railway sector and to identify options for improving value for money while continuing to expand capacity. Supply chain management was one of eight areas highlighted where opportunities were felt to exist to drive efficiency through more effective procurement.

Customer Challenge

In its drive to optimise capacity, affordability and performance against this backdrop, one of the UK's leading train leasing companies ('the Company') wanted to give proper recognition to the supply chain risks involved. It engaged Zurich to assist in developing an approach to define and improve its own risk profile and to encourage industry collaboration in the supply chain at the same time.

Zurich Solution

Zurich worked with the procurement function of the Company to define an approach built around both its own processes and Zurich's well-established supply chain risk assessment framework. The project involved document and control reviews and supply chain risk workshops with key suppliers, to examine critical supplies, supplier management, risk management and supplier relationships. Having identified

key risk areas for the suppliers, supply chain risk profiles were developed for each using Zurich's Total Risk Profiling methodology.

The outputs were validated with the suppliers following which Zurich consolidated the risks and presented them to the Company. Zurich then facilitated a discussion to enable an examination of the key supply chain issues from the Company's own perspective and developed its supply chain risk profile.

This process identified six key risks outside of the Company's risk tolerance boundary.

What was the outcome?

While the threat of conflicting agendas and commercial sensitivities presented challenges to the overall assignment, the level of cooperation from the chosen suppliers was very positive and reflected well on the relationships that existed despite inherent barriers within the industry. The results were presented to the Company's Board of Directors who accepted the findings and requested the development of an action plan to address the risks. Further discussions ensued to determine how to implement improvements that to further enhance the risk profile.



Customer proof point

The Chief Operating Officer of the company commented:
“We have valued Zurich’s broad experience in helping us and our Tier 1 suppliers to understand supply chain risks better. We appreciate the contribution Zurich has made in assisting us to define key risks and to demonstrate to our stakeholders that we are fully committed to managing our business effectively through the appropriate consideration of risk.”



Summary

Robust supply chain risk management enables construction companies to:

- Make better-informed decisions.
- Deliver projects on time and within budget.
- Identify and manage key exposures to risks.
- Reduce volatility in business results:
 - with steady and reliable supplies.
- Maximize growth opportunities:
 - understand the risks attached to them.
- Decrease the total cost of capital by increasing risk transparency.

Appendix:

Test your resilience – how prepared are you?

The Zurich risk management health check challenge

Zurich Construction Health Check

1. Do you know who your critical suppliers are and how much their failure would impact your company's profits?
2. Have you fully mapped your critical supply chains upstream to the raw material level?
3. Have you integrated risk management processes into your supply chain management approaches?
4. Do you have routine timely systems for measuring the financial stability of critical suppliers?
5. Do you understand your tier 1 production facilities and logistic hub exposures to natural catastrophes?
6. Is supply chain risk management integrated into your project risk management approach?
7. Do you record the details of supply chain incidents and the actions you have put in place to avoid future incidents?
8. Do your tier 1 suppliers have business continuity plans that have been tested in terms of their viability?
9. Have you provided risk training to your supply chain management team?
10. Is risk on the agenda at performance meetings with your strategic suppliers/subcontractors?

<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
<input type="checkbox"/>	Yes	<input type="checkbox"/>	No

Your supply chain 'Health Indicator'

How many 'Yes' answers did you score?

- 8-10** – You probably have a good understanding and control over the risks you face.
- 5-7** – You may have a number of key gaps which could impact your reputation or profitability.
- 3-4** – How are you sleeping at night?
- 0-2** – Good luck.

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