5th Annual Survey

Supply Chain Resilience 2013

An international survey to consider the origin, causes and consequences of supply chain disruption

Published November 2013
ABOUT THE SURVEY

Fieldwork for the fifth annual Supply Chain Resilience survey commenced on the 16th April 2013 and the survey closed on the 16th August with 519 responses validated. All members of the Business Continuity Institute received an individual email invitation to complete the online survey. This was then complemented by the Chartered Institute of Purchasing and Supply inviting its members to contribute through their existing communication channels. In addition, support is acknowledged from the following people and organizations:

- Colin Ive MBCI and the BRiSC community
- Chartered Institute of Logistics and Transport

We would like to thank Zurich Insurance Group for sponsoring this research for the fifth successive year.

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Reviewer: Andrew Scott, Senior Communications Manager at the Business Continuity Institute
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Executive Summary

Introduction

This Supply Chain Resilience report is the fifth in a series that started in 2009 to consider the challenge of developing resilient supply chains. This report, the result of a survey of 519 respondents from 71 countries, highlights the level, range and cost of disruptions that organizations face, and demonstrates how a disruption in one organization can spread out over the entire supply chain.

Key Findings

- 75% of respondents still do not have full visibility of their supply chain disruption levels. Only 25% coordinate and report to gain an enterprise-wide view of disruption. This is unchanged from 2012.

- 75% of respondents experienced at least one incident that caused disruption. This is consistent with findings in each of the previous four years.

- 42% of disruptions originated below the tier one supplier, an increase from 2012.

- 15% of respondents experienced disruptions that cost in excess of €1M and 9% experienced a single event disruption that cost in excess of €1M.

- The primary sources of disruption were unplanned IT or telecom outages, with 55% stating they experienced high or some impact from this type of disruption. This was followed by adverse weather (40%) and outsourcer service provision failure (37%).

- While insolvency in the supply chain maintained its ninth place in 2013, other financial risk related sources of disruption did recede: lack of credit fell to 21st place from 12th and currency exchange rate volatility dropped from fifth place to 17th.

- Below the top three, there have been some significant changes from 2012 to the main causes of disruption: transport network disruption climbed from 14th place to fourth with 30% experiencing high or some impact. The high profile media reporting of the danger of cyber-attacks has resulted in this type of disruption rising from 18th place to fifth. The non-availability or loss of talent/skills increased from 10th place to sixth.

- When considering sources of disruption by country and sector of activity, some new sources rise to prominence: product quality incidents are prominent in manufacturing, engineering and construction, while in the USA adverse weather takes the top spot in 2013 as a source of supply chain disruption.

- 41% stated that customer complaints were received as a consequence of disruption, an increase from 35% in 2012, bringing it into second place behind loss of productivity (55%) as the primary consequence of supply chain disruption.

- Strategic consequences maintain their presence with 24% stating they experienced damaged to their brand and reputation and 26% stakeholder/shareholder concern. 3% experienced a fall of share price as a result of a disruption.
Conclusions

Consistently high levels of supply chain disruption are being reported with a number of threats being re-considered as new evidence and concerns emerge.

Supply chain disruptions are not a matter of if but when, although their relative impact on the organization can vary widely. As a starting point it can be useful to look at your most profitable product or service and look at the profit impact of related supplier failure on your organization. The Business Continuity approach to Business Impact Analysis can be a valuable technique to identify key suppliers and operational impacts.

It is clear from the results of this survey that supply chain disruptions continue to have a significant impact on business performance and the problem is not being effectively managed. One of the key challenges is to get consistent top management support for investing in improved supply chain resilience.

The following conclusions emphasise the importance of continuing with this type of research:

• Supply chain failure is still a key performance issue for business
• Consistent top management support is required to make a change
• Professional procurement practitioners can play a key role but they need to work with Business Continuity practitioners
• Business Continuity is too often a tick box exercise other than in top performers
• Proactive leadership, not crisis management, is required
Main Report Findings

Introduction

This survey is the fifth in a series that started in 2009 to consider the challenge of developing resilient supply chains. The methodology used in 2013 was consistent with previous years although some additional questions have been added. Because this annual survey has now collected data over a significant time period, the BCI is also looking at producing a further report showing the trends since 2009. This will be released during Business Continuity Awareness Week 2014.

One issue we looked at in 2013 in more detail was the extent to which non-physical events in the supply chain were causing disruption, i.e. events where supply itself is unaffected in the short term but could cause potential long term damage to reputation or business viability. Two notable 2013 events are picked up in the response to this question: the factory collapse in Bangladesh and the equine DNA scandal in Europe.

Another new question in 2013 looked to understand the extent to which supply chain failures were generating negative and positive social media discussions. 18% of respondents were aware of the issue while 14% did not know. As might be expected, negative discussion outweighed positive ones by a large majority, whilst many respondents stated that they were not aware of any discussions. This probably supports the fact that many incidents recorded have either limited external impact and/or are managed before they become public – but clearly there’s a potential for many more social discussions around incidents that are not well managed.
**Frequency and Origin of Disruption**

Surprisingly, it is not easy to get a full picture of the numbers and reasons for supply chain disruption. 75% of all respondents claim they do not have the full picture on numbers and/or causes whilst 36% do not record it formally at all.

This raises a question as to why more companies do not do this – it potentially implies it is either too difficult to do, or not seen as a big enough issue to invest time in finding out. The authors believe that more research is needed to determine why this is the case. It does seem likely however that the value of better understanding the levels of supply chain disruptions is not appreciated by top management. It would also seem likely that more management attention should be paid to ensuring such data is collected.

There were some interesting responses regarding the methods used to collect this disruption data. They included:

- The impact of any incident/disruption is recorded individually by affected business units and entered into a firm-wide incident reporting system
- Calculated within the business areas that own the relationships with supply but not shared or acted upon
- Risk management works in collaboration with other departments in documenting and reporting incidences and disruptions
- Any disruptions which affect supply chain are discussed at contract management meetings
- We will soon be reported on maximum potential loss, and this will require estimating lost opportunity and foregone revenue, often the result of third party poor performance

**Question 7 (Tracking question).** Do you record, measure and report on performance-affecting supply chain disruptions (i.e. where an unplanned cost has been incurred or loss of productivity or revenue experienced)? Base: 461
Given this situation, it is safe to suggest that the levels of disruption reported in this survey might well be conservative as some of the lower impact interruptions might not have been captured. Even with this proviso however, 75% of respondents experienced at least one supply chain incident that caused disruption. This is consistent with the findings over the previous four years.

Of the analysed incidents, 42% were shown to have originated below the immediate tier one supplier. This shows a slight increase on levels below tier one compared with 2012 and 2011. Examples of tier two events were around quality control issues, power outages affecting suppliers and banking network failures.
Question 10. How severely has your supply chain been affected by any of the following sources of disruption over the past 12 months? Severity levels can be considered in terms of initial impact, ability to continue to deliver key products and services and recovery time, as well as the consequences on brand and reputation. Base: 245. Multiple responses allowed.

Causes of Disruption

With regards to the known causes of disruption, the survey asked what had caused interruption and how severely supply chains had been affected by it. A wide range of sources of disruption over the past 12 months were identified; unplanned IT/Telecoms outage being the most reported, followed by adverse weather and outsourcer service failure. Transport network disruption and cyber-attack disruption had risen considerably since 2012, with animal diseases the least reported of known incidents. Severity levels for each cause are considered in terms of initial impact, ability to continue to deliver key products and services and recovery time, as well as the consequences on brand and reputation. The top three causes overall were also seen as the top three high impact causes.

For the first time in 2013, we have also looked at this response from a slightly different point of view, the percentage of organizations that actually reported that type of incident. Almost 90% of organizations report an IT or telecom failure, with 55% of them recording it as causing high or some impact. This is perhaps predictable but even more interestingly 38% experienced at least one insolvency in their supply chain during the year. At the other end of this scale, 85% have not been affected by any animal disease related event and only 3% reported any serious impact from it.

Question 10. Alternative view of this question: Prevalence of risk events. Chart shows that almost 90% of respondents record an IT or telecom failure, while 85% have not been affected by an animal disease related event. 38% experienced an insolvency in their supply chain. Base: 245. Multiple responses allowed.
It is becoming increasingly clear that both physical and non-physical issues can cause disruption in the supply chain. Non-physical disruption is defined here as an incident that does not cause a short-term interruption to supply of a product or service but may require a crisis response particularly in terms of communicating with stakeholders and have medium-longer term supply chain consequences, for example, data breach, or a business ethics incident. Only 41% reported that all their supply chain disruptions were due to physical events alone, so 59% of all respondents recognized the importance of taking this wider threat into account. Examples given included:

- Media focus on supplier working environment at factories after building collapse (Bangladesh) leading to new government regulations, even though our company did not use suppliers in collapsed factory
- The horse meat scandal caused interruption to supplies in our staff canteens. We also had to issue HR statements on the safety of food served to staff and visitors

The conclusion we draw is that is that resilience professionals need to be prepared to deal with non-physical events and not just those which affect short-term availability.

We identified 15 different generic consequences, some of which had an immediate financial impact and others which had the potential for long term damage.

In order of importance they were ranked as:

- Loss of productivity
- Customer complaints received
- Increased cost of working
- Service outcome impaired
- Loss of revenue
- Damage to brand/reputation/image
- Product release delay
- Product recall/withdrawal
- Payment of service credits
- Share price fall
- Stakeholder/shareholder concern
- Delayed cash flows
- Expected increase in regulatory scrutiny
- Loss of regular customers
- Fine by regulator for non-compliance

Whilst loss of productivity maintains its place as the most likely negative outcome from a supply chain disruption, 41% stated that customer complaints were received as a consequence of disruption, an increase from 35% in 2012, bringing it into second place behind loss of productivity (55%) as the primary consequence of supply chain disruption.

Strategic consequences maintain their presence in 2013 with 24% stating they experienced damaged to their brand and reputation and 26% stakeholder/shareholder concern.
Economic Impacts of Disruption

We asked respondents to estimate the cumulative cost to their organization of supply chain disruption over the past 12 months. Considerations included a loss of revenue and/or increased cost of working. Responses were collated in Euros and we found that 15% experienced an annual cost of disruption of more than €1M.

We also asked about the largest single loss and found that 9% experienced a single event loss of more than €1M. This compares with 21% in 2012 and 17% in 2011. Hurricane Sandy and some major IT outages contributed to some of the larger losses experienced this year. Here is one specific example from the construction industry:

Question 14 (New question): What would you estimate the cumulative cost to your organization of supply chain disruption has been over the past 12 months? Please consider loss of revenue and/or increased cost of working. Please give your response in EUROs (x-rate: 1GBP = 1.2EURO; 1US$ = 0.8EURO).
Base: 157 responses.

Question 15 (tracking question): Considering the single most significant incident in the last 12 months what was the approximate financial cost (loss of revenue and/or increased cost of working)? Please give your response in EUROs (x-rate: 1GBP = 1.2EURO; 1US$ = 0.8EURO).
Base: 155 responses.

| Less than €50,000 | 45% |
| €50,000 – €250,000 | 19% |
| €250,000 – €500,000 | 9% |
| €500,000 – €1 Million | 9% |
| €1 Million – €10 Million | 1% |
| More than €1 Million | 1% |

| Less than €50,000 | 59% |
| €50,000 – €250,000 | 25% |
| €250,000 – €500,000 | 8% |
| €500,000 – €1 Million | 7% |
| €1 Million – €500M | 1% |
| €500M – €11M | 1% |
| €11M – €250M | 1% |
| €250M – €500M | 1% |
| More than €1 Million | 1% |
Management Commitment

There is a significant contrast between those who have top management commitment, even on an inconsistent basis, and those who have low commitment. 100% of those citing low commitment experienced at least one disruption. 47% of the low commitment group stated that disruption was not recorded systematically and only 3% had an enterprise wide view. 40% of this subgroup stated their BCM programme did not account for supply chain disruption and 61% had supply chains where half or less of key suppliers had Business Continuity in place. This group also restrict themselves to just asking suppliers whether they have a ‘BCP’ (54%) – far behind their overall comparative groups.

One survey respondent also noted that it took the failure of a key supplier for top management to pay attention to this subject. Although this is a cynical view, it seems to be one that is held in various degrees of seriousness and severity by many supply chain practitioners.
Supply Chain Business Continuity Findings

Introduction

Although around 75% of respondents felt that they included consideration of supply chain disruption in their BCM programmes, the extent to which this is validated is highly variable. Around 20% do not even ask their key suppliers (new or existing) if they have any Business Continuity arrangements in place.

Almost 50% of survey respondents stated that half or less of their key suppliers had any BC arrangements in place even for their own needs. It is a safe assumption that such suppliers are more vulnerable to disruption than better prepared companies and the consequences will hit the client organization as well as the supplier organization.

Only 10% of respondents stated that all of their key suppliers have BC arrangements in place.

Question 24. Considering your key suppliers, what percentage of them would you say have Business Continuity arrangements in place to address their own needs? Base: 292
Supplier Business Continuity Information

It was interesting that amongst the Business Continuity practitioner respondents the most frequently cited methodology to identify key suppliers was a Business Impact Analysis (BIA). This would normally be an embedded process within the BCM lifecycle. For those who do not include supply chain as part of their BCM programme and those individuals who are more purchasing/supply focused, the key techniques were seen to be Strategic Positioning along with Supplier Spend/Volume.

Business Continuity information sought from a supplier understandably varies with the criticality of the supplier under scrutiny. Only 31% settle for the presence of a BCP. 43% claim to check if suppliers have a BCM programme, not just a documented plan and others look for compliance with external good practice like the BCI’s Good Practice Guidelines or BS25999-1 Code of Practice for BCM. Only 40% check whether the suppliers programme is relevant to the product or service being purchased – a surprising omission. Only 16% look for the credentials of those who run the BCM programme, another indication that the importance of BCM quality control is not fully appreciated.

Others approaches noted include:
- Ask BCM questions at tender stage depending on value and risk of project
- Rate suppliers on a matrix value base upon a defined list of questions
- Audit suppliers using one or more of the following techniques
  - Obtain physical evidence
  - Conduct a review via WebEx
  - Undertake site visits to obtain positive assurance of control environment
  - Check system for implementation, operation, maintenance, review and continuous improvement of BCM programme
- Demand alignment to ISO22301 or BS25999 or the BCI Good Practice Guidelines.

Some illustrative comments follow:
- Self-assessment questionnaires have only been used with respect to pandemic preparedness. For the most part, we rely on supplier BC plan documentation, information on test cycles and audit reports
- All key suppliers will complete a questionnaire and those categorised as ‘High’ will be subject to independent audit
- We do a little of most things but it is not a coordinated effort, we are in the process of trying to better coordinate this now
- Individual contract managers do their own thing. There is not as yet a firm-wide procedure, but there will be soon
- Provision of evidence of regular testing is a requirement for all our key suppliers. Additionally with some of them we conduct joint exercise scenarios – this is something we find particularly valuable and are planning to do more of in the future
- We ask if we can participate in a joint exercise but this is not always possible. We ask if they participate in the industry-wide exercise

Question 25. What information do you seek in order to better understand the Business Continuity arrangements of key suppliers? Base: 331
Assessing Effectiveness of Supplier Business Continuity

Results in 2013 continue to indicate a passive approach to reviewing the likely effectiveness of supplier BC arrangements with 41% waiting until contract renewal and a 16% not reviewing at all.

It was also recognized however, that this was not a simple problem for which there is one solution. Supply Chain Resilience is very complicated and is not just about continuity. Different parts of the organization need the supply chain to deliver different and potentially conflicting outcomes. For example, cheapest, best quality, ethically sourced, socially responsible are objectives that are sometimes impossible to reconcile.

One particular concern is that 30% of respondents are completely in the dark when it comes to knowing where they fit in a supplier’s priorities if an incident strikes. Typical respondent quotes are worrying as they seemingly fail to understand the real purpose of having supply chain continuity. They include:

• Some understand the importance they represent to our ability to solve disruptions, other are lower and do not play a significant part
• We don’t care where we are in the ranking as long as they can meet our recovery requirements
• We think we know, and we might be deluding ourselves on this aspect
• We suspect that due to our size we would be low on the priority scale

The sample for 2013 actually shows regression from the levels in 2012 across all of the more proactive indicators such as reviewing with major change events or when a new threat is identified.

**Some positive experiences included:**

- Asking suppliers whether they have actually activated their BCPs in other client engagements and requesting they share the relevant findings
- Asking suppliers how they identify their own ‘critical suppliers’ and what due diligence they undertake on those critical suppliers
- Taking an end to end approach, ensuring the vendor has a BC program and plan, the business has recovery capability built into their BCPs for reduced services in the event of a supplier being impacted, as well as contingency plans owned and developed by the business to cover total loss of a material supplier
- Understanding the risk appetite of the directors of the supplier can be a highly valuable guide as to whether the organization takes resilience seriously and their responsibility to their customers’ continuity
- Rolling out a programme whereby operationally disruptive suppliers as opposed to suppliers who may well be categorised as significant by financial value only have been identified. Then conduct an annual due diligence programme on these suppliers. On top of which there should be regular (at least quarterly) meetings with (potentially) operationally disruptive suppliers

**Question 28. How often do you review your Business Continuity requirements with key suppliers and their capability to meet them? Base: 348**

The sample for 2013 actually shows regression from the levels in 2012 across all of the more proactive indicators such as reviewing with major change events or when a new threat is identified.

**Question 29. If your key suppliers were affected by a significant disruption, which required them to prioritise service between customers, do you know where your organization would be in their ranking? Base 336. Figures exclude those who do not have any key suppliers (20)**
Another concerning finding is that, compared to 2012, the need for tenderers to provide appropriate levels of BCM assurance has declined. In 2012 33% provided assurance for every (or the majority of) proposals compared with just 26% in 2013.

On a positive note however, it does seem that when Business Continuity features in contractual discussions it is much more integrated into the process. In 2012, 29% stated that BC was an afterthought, while in 2013 this figure is down to just 14%. We interpret this as suggesting that where it is important to do so, Business Continuity is more likely to be seriously when discussed during the tender phase.

Some examples of effective Business Continuity provision during a supply chain disruption are:

- We employed continuity plans that maintained customer service without any loss incurred to the customer, and in some cases, the customer did not know we were experiencing anything other than business as usual, and this was very well received.
- During Hurricane Sandy, supplies were increased in advance of the storm, enabling our retail locations to remain open during and after the storm.
- We were able to instigate our own BCP to cater for staff payments when the bank’s IT systems failed. We were also able to work with our client base to structure invoice payments. The bank were of little to no use at all.

Question 30. When tendering for new business clients over the past 12 months, how often have you had to provide assurance to clients that your own Business Continuity arrangements are sufficient? Base: 367

Annex 1: Functional Role of Respondents

For supply chain respondents, there are some notable distinctions from the other groups:

- 89% experienced at least one disruption compared with 75% in the overall sample
- 48% of incidents originated at tier 2 or lower
- Only 10% use scheduled supplier meetings to review BC.
  45% wait for contract renewal and for 35% it’s ad hoc. This demonstrates a lack of in-life contract management

- Top five causes of disruption (high+some impact)
  1. Product quality (42%)
  2. Transport network (40%)
  3. Unplanned IT/Telecom outage (30%)
  4. Adverse weather (29%)
  5. Service failure by outsourcer (23%)

Question 1. Base: 519. Other includes internal audit, quality, health and safety, and “line of business roles”
Annex 2: Respondent Profile

Respondents to this survey were based in 71 countries … and worked in all 15 SIC sectors offered.

Question 2 and Question 3. 519 total responses (reviewed).
Survey fieldwork 25th June to 22nd August 2013. Responses from 71 countries across 15 sectors.
### Annex 3: Cause of Disruption by Region or Country

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<td><strong>Sub-Saharan Africa</strong> (10 countries)</td>
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**Annex 4: Cause of Disruption by Sector**

<table>
<thead>
<tr>
<th>Financial &amp; Insurance Services</th>
<th>Professional Services</th>
<th>Public Administration &amp; Defence</th>
<th>IT &amp; Communication Services</th>
<th>Manufacturing</th>
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<tbody>
<tr>
<td>1. Unplanned IT/Telecom outage (64%)</td>
<td>1. Unplanned IT/Telecom outage (70%)</td>
<td>1. Unplanned IT/Telecom outage (50%)</td>
<td>1. Unplanned IT/Telecom outage (48%)</td>
<td>1. Transport network disruption (43%)</td>
</tr>
<tr>
<td>2. Outsourcer service failure (38%)</td>
<td>2. Outsourcer service failure (68%)</td>
<td>2. Adverse weather (36%)</td>
<td>2. Adverse weather (33%)</td>
<td>2. Product quality incident (42%)</td>
</tr>
<tr>
<td>3. Adverse weather (33%)</td>
<td>3. Adverse weather (47%)</td>
<td>3. Loss of talent/skills (28%)</td>
<td>3. Cyber attack (29%)</td>
<td>3. Energy scarcity (35%)</td>
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<tr>
<td>4. Transport network disruption (21%)</td>
<td>4. Transport network disruption (43%)</td>
<td>4. Outsourcer service failure (24%)</td>
<td>4. Outsourcer service failure (25%)</td>
<td>4. Unplanned IT/Telecom outage (35%)</td>
</tr>
<tr>
<td>5. Loss of talent/skills (20%)</td>
<td>5. Loss of talent/skills (35%)</td>
<td>5. Transport network disruption (22%)</td>
<td>5. Loss of talent/skills (24%)</td>
<td>5. Outsourcer service failure (33%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Energy &amp; Utility Services</th>
<th>Retail &amp; Wholesale</th>
<th>Health &amp; Social Care</th>
<th>Transport &amp; Storage</th>
<th>Engineering &amp; Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Product quality incident (44%)</td>
<td>1. Adverse weather (71%)</td>
<td>1. Adverse weather (50%)</td>
<td>1. Adverse weather (67%)</td>
<td>1. Product quality (57%)</td>
</tr>
<tr>
<td>2. Loss of talent/skills (44%)</td>
<td>2. Unplanned IT/Telecom outage (40%)</td>
<td>2. Transport network disruption (50%)</td>
<td>2. Transport network disruption (56%)</td>
<td>2. Unplanned IT/Telecom outage (57%)</td>
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<tr>
<td>3. Civil unrest/ conflict (33%)</td>
<td>3. Transport network disruption (39%)</td>
<td>3. Insolvency (50%)</td>
<td>3. Outsourcer service failure (56%)</td>
<td>3. Adverse weather (57%)</td>
</tr>
<tr>
<td>4. Lack of credit (30%)</td>
<td>4. Product quality incident (31%)</td>
<td>4. Unplanned IT/Telecom outage (43%)</td>
<td>4. Unplanned IT/Telecom outage (44%)</td>
<td>4. New laws/regulations (50%)</td>
</tr>
<tr>
<td>5. Industrial dispute (30%)</td>
<td>5. Environmental incident (31%)</td>
<td>5. Product quality incident (43%)</td>
<td>5. Health &amp; Safety incident (33%)</td>
<td>5. Transport network disruption (43%)</td>
</tr>
</tbody>
</table>
About The BCI

Based in Caversham, United Kingdom, the Business Continuity Institute (BCI) was established in 1994 to ‘promote the art and science of business continuity management’ and to assist organizations in preparing for and surviving minor and large scale manmade and natural disasters. The Institute enables members to obtain guidance and support from their fellow practitioners, as well as offering professional training and certification programmes to disseminate and validate the highest standards of competence and ethics. It has over 7,000 members in more than 100 countries, active in an estimated 2,500 organizations in private, public and third sectors. For more information go to: www.thebci.org


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Zurich is a thought leader in supply chain risk management. It has developed supply chain risk assessment tools and an innovative and award winning supply chain insurance product. The company has extensive experience of working with clients to help them make their supply chains more resilient.

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