An international survey of more than 530 organisations from over 65 countries, which considers the origin, causes and consequences of supply chain disruption, along with proven approaches to building confidence in supply chain resilience.
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Executive Summary: Disruption more consequential, outsourcers under scrutiny

Introduction
This survey is the fourth in a series, starting back in 2009, that sets out to consider the challenge of developing resilient supply chains.

Key Findings
- 73% of survey respondents experienced at least one disruption with an average of five. This high level is consistent with the trend-line over the past four years.
- 39% of analysed disruptions originated below the immediate tier one supplier, underscoring for the second consecutive year the deep-rooted nature of disruption.
- Unplanned IT or telecom outages jumped to the top of sources of disruption with 52% affected to some or a high degree. The level was 41% in 2011.
- Adverse weather maintained its prominent position with 48% citing it as a cause of disruption, but relatively unchanged from 51% in 2011.
- Failure of service provision by outsourcing suppliers has doubled from 17% to 35% of disruption and joins the top three causes.
- 21% suffered more than €1M in costs for a single incident; higher than 2011 and in spite of lower overall levels of disruption.
- 59% cited loss of productivity as the primary impact of the disruption experienced, up from 49% in 2011. Across all indicators there was a deepening on impact experienced with an average of three distinctive consequences per incident.
- 25% of respondents have still to consider supply chain disruption in their business continuity programmes, and 44% of respondents have weak supply chains, while major sector differences persist especially in manufacturing and retail and between countries such as the UK and USA.
- While 47% now look for evidence of a business continuity programme over a simple plan and 23% run joint exercises—all improvements on 2011—15% still do not collect any information from key suppliers, and 41% do not validate that key supplier plans might work in practice.
- 42% stated the biggest on-going challenge is to secure buy-in to implement supply chain continuity practices in their firm.

Review & Conclusions
Since 2009 consistently high levels of supply chain disruptions have been experienced and events are becoming more consequential even with absolute levels dipping after 2011, a year, which saw the Great East Japan Earthquake and extensive flooding in Thailand.

Business continuity is widely seen as effective in resisting the impact of disruption, alongside its core benefits of enabling continuity and faster recovery from incidents.

The dramatic rise in disruption through outsourcer service failures requires further study into service chains and the specific challenges inherent in them.

Given the dominance of supply chain disruption through unplanned IT or telecom outages, there is now a need to evaluate the contribution of “the cloud” to resilience.

The challenge of securing executive buy-in requires an understanding of the broader trends driving supply chain vulnerability and its disruption. In this way it will become possible to demonstrate that high levels of disruption are not going to go away, however fragile corporate memory may be.
**Introduction: 73% experienced at least one disruptive supply chain incident with an average of five**

This report is the fourth in a series that, starting in 2009, set out to consider the challenge of developing resilient supply chains.

While we have continued to track trends in supply chain disruption, mitigation and assurance methods employed, the 2012 survey is re-focused on events that cause at least some if not high levels of disruption, rather than disruption in general, much of which can be dealt with as part of business as usual.

When reviewing the results it is naturally important to consider the profile of the respondents: In this case 82% of respondents work “in-house” i.e. they are employed to run business continuity, supply chain or risk programmes with 18% providing consulting services in these domains. The organisations responding are typically large ones—42% employ between one thousand and fifty thousand staff and 12% employ more than fifty thousand people.

The 2012 survey has also achieved a stronger balance of views from across risk, business continuity and supply chain professionals.

Finally, we asked respondents to articulate the tough challenges where they are still to find an answer, insights which inform the Business Continuity Institute’s thinking on next steps.

So, what do we mean by supply chain? Here is a reprise of the definition that we first used in 2011 (Christopher 2005):

The network of organisations that are involved, through upstream and downstream relationships, in the different processes and activities that produce value in the form of products and services in the hands of the ultimate consumer.

The headline figure for disruption in the 2012 survey is that 73% of responding organisations experienced at least one disruption in the previous 12 months, with an average level of five incidents. In 2011, supply chains were widely disrupted by the Great East Japan Earthquake and flooding in Thailand causing a jump to 85% in the headline disruption figure and peaking above the established trend-line, to which we have now returned.

It is also worth noting that only one in four firms have the full picture on supply chain disruption, which would be achieved by recording, measuring and reporting on performance-affecting supply chain disruptions across the whole enterprise. For 75% of respondents, this is therefore not the case, so the level of disruption recorded here is likely to be an underestimate of actual levels, albeit major disruptions are likely to be picked up across company boundaries.

We hope this year’s survey provides some new insights and would welcome your feedback.
Experience of Disruption

Origin of disruption
Following on from providing information on the number of disruptive incidents experienced in the last 12 months, those who had experienced disruption were asked whether they had analysed the original source of the disruption within their supply chain. The question specifically asked whether the disruption occurred with the immediate supplier (tier one) or their supplier (tier two), or much lower down in the supply chain (tier three or four etc). 87% of respondents to this question were able to provide an analysis of the source of disruption as seen in Chart 2.

61% of disruption originated with the immediate supplier according to this year’s survey meaning that 39% originated in the extended supply chain (tier two, three, etc). This level of disruption is consistent with levels reported in 2011, and confirms the deep-rooted nature of disruption. The comments suggest that buying organisations take it upon themselves to scrutinise their extended supply chain rather than rely on their immediate supplier to audit their suppliers in turn, which would be an alternative method of addressing a difficult challenge.

“We reach to the original source of the supply chain to minimize contamination to produce high purity products. When suppliers of original source are hired, we have exceptional confidence they are not contaminating”

“While we don’t routinely analyse the full supply chain, I was able to review three of the disruptions that I was made aware of and found one to be an immediate supplier failure and two to be tier two”

Causes of disruption
When considering causes of disruption in the 2012 survey, we refined the main question to distinguish between disruption that caused some impact from disruption that had high impact in order to qualify the severity of the disruption. The results in Chart 3 show the totals of each threat type experienced over the previous 12 months.

Overall some 1,200 causes of disruption were reported with 301 of them designated as high impact. The top five causes by high impact represent 42% of severe events.

Unplanned IT or telecom outages are the most commonly experienced source of some or high levels of disruption with 52% of responding organisations selecting this option. Adverse weather drops from first place in the 2011 survey to second place in 2012 at 48%.

Failure in service provision by an outsourcer reaches the top three with 35% stating they experienced some impact or high impact from...
such an event. This is a significant increase from the 17% level recorded in 2011.

In 2011, we wrote that intellectual property violations was one to watch and this has proved to be the case in jumping to 16th place above cyber attack, industrial dispute and act of terrorism with 11% and 26 responses compared with 25th place in 2011 with just five responses. Other significant climbers included energy scarcity in sixth place (14th in 2011) and new laws/regulations in seventh place (17th in 2011).

Cyber threats tend to score highly in horizon scanning and the media, so it is interesting to note the low levels of disruption actually experienced: only 16% of respondents recorded severe or some supply chain disruption as a result of a cyber threat, ranking it 18th on the list of threats experienced by severity out of 25, and 14th by number of incidents registered. What is notable is the concentration of this disruption in the financial services sector, which claimed 41% of incidents recorded. The finding suggests that this threat has a strong sector bias rather than one for all - data from 2009, 2010, and 2011 support this conclusion as well.

The prominence of earthquake/tsunami in the list underscores the extended recovery times faced by some organisations following the 2011 disaster.

Loss of talent/skills has slipped in 2012 from sixth position down to tenth. The London 2012

Chart 3: 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: 227
Olympics registered as a source of disruption at the UK level but not in the overall international survey.

Consequences of disruption
When comparing 2012 with 2011 data on the consequences arising from disruptions, the first observation is an increased level of responses across all 14 potential areas of impact. As can be seen from Chart 4, loss of productivity is still the primary consequence, with 59% checking this in 2012 compared with 49% in 2011.

Increased cost of working, loss of revenues, customer complaints all increased over 2011 levels. Product release delay jumped from 17% in 2011 to 26% in 2012. Further down the list, the jump in payment of service credits (from 1% to 9%) mirrors the prominence of outsourcer failures among the top three sources of disruption. Incidents forcing a product recall or withdrawal also increased from just 5% in 2011 to 11% in 2012. As identified in 2011, longer term impacts are being experienced more frequently with damage to brand reputation increasing from 17% to 24% in this year’s survey.

Overall the survey recorded 741 impacts from 215 respondents. Of the 195 survey respondents who experienced ‘1-5’ disruptive events, 18 stated they endured six or more consequences (9%), i.e. evidence that there is more than one consequence from a single event. Events which lend themselves to this cascading effect are unplanned telecom/IT outages, outsourcer failure, loss of talent/skills and currency volatility.

Economic consequences
One in five responding organisations had suffered a single loss event of more than €1M in the past 12 months up from 2011, when 17% registered a similar magnitude of loss. This increase is noteworthy given the overall lower level of disruption experienced in this year’s survey, suggesting an increase in the
consequential nature of supply chain disruption.

The aggregate annual figure could clearly be higher given that the average level of incidents experienced was five.

It is worth comparing the single loss event against the annual revenues of organisations to understand the significance of the event.

Considering the 29 cases where this comparison can be made the average (mean) minimum loss is €8M but there is significant variation. For example, three firms experienced a single event loss between €1M and €10M on annual revenues of €1M to €10M indicating a significant bottom line hit. While another suffered a loss of between €51M and €100M on annual revenues greater than €50BN. The economic consequences will therefore be subject to further study.

One question that arises is around the profile of those organisations suffering a single event loss of more than €1M. Are these firms simply laggards in terms of business continuity?

The answer is, in fact, quite the opposite.

Firstly, the affected organisations were much larger ones than the survey average with 58% employing more than 10,000 employees and 49% had revenues in excess of €1BN (compared with 23% and 22% respectively in the overall sample). Larger organisations tend to have business continuity programmes, even if they are not labelled as such.

These organisations do have more key suppliers than the average with 43% recording more than 100 key suppliers compared with the survey average of 23%, indicating increased complexity and higher need for assurance resources.

What is also clear is that those affected had stronger business continuity programmes with 63% having BC in place for supply chain disruption, and a more rigorous approach was taken across all assurance methods (more on the criteria will follow in the following section of the report).

Most noteworthy is that in spite of the economic hit over the past 12 months, this group is convinced that business continuity has helped them resist the impact of disruption (63%) and helped with continuity and recovery (96%).

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*Chart 5: 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. Base: 182*
Supply Chain Continuity—25% of in-house BC programmes do not consider supply chain disruption

Does your business continuity programme consider supply chain disruption?

When asked whether the responding organisation had business continuity (BC) arrangements in place to deal with supply chain disruption only 58% stated that this was the case with 25% stating they definitely did not and a further 17% not knowing.

For those with BC in place for their supply chain (237) a series of follow up questions were asked. The first was to consider three business continuity benefit statements and rate their strength of agreement with each one based on a scale from strongly agree through to strongly disagree (refer to Chart 6) The conclusion is that BC is an essential component of supply chain resilience, as more than 90% agree it delivers the capability of faster recovery and the capability to continue to deliver key products and services. There is less agreement about BC allowing survey respondents to resist any impact of disruption, but even so, still more than 60% agree with the statement.

As the supplier base for larger organisations can number hundreds if not thousands of companies, the next logical step is to seek to understand supplier BC arrangements. This can be a daunting task, even assuming resources are available to do so. The BCI Partnership has published separate guidance on how to perform the task of identifying key supply chain partners from among the wider supply base in a separate paper available to download from the BCI website. In the case of this survey, 77% of responding organisations had less than 100 key suppliers, a level which is felt to be a manageable one.

The survey found that 77% of survey respondents who have BC themselves took the step of asking their key suppliers whether they had business continuity arrangements in place for their own needs. 16% did not ask this question.

The response to this question provides an insight into the state of supply chain resilience across a wide range of sectors (and beyond...
the BCI’s membership). This can be viewed in Chart 7 below.

In 2012 we can see that 55% of survey respondents have key supply chains where at least half of the companies that comprise these supply chains do have business continuity in place for their own needs. However, 44% have much weaker supply chains, where less than half have BC arrangements in place. In the sector and country analysis that follows later in this report, the strength of supply chains is one of the key indicators for comparison. Nevertheless, we can report that their has been a modest strengthening of supply chains compared with 2011.

Another new dimension in the 2012 survey was to consider not just upstream supply chain but also the presence of BC arrangements downstream among channels, distributors, franchisees etc. Here 17% ensured that all have BC in place, while 50% focus on the key channel partners. 19% do not take this step, leaving a major vulnerability in the end-to-end business continuity picture.

**Building confidence**

In order to understand what the presence of BC arrangements among the key supplier base may mean in practice, the survey looked at the information requested from key supply chain partners, how this information was collected and subsequently validated and reviewed. These steps are clearly essential in developing a sense of confidence in the resilience of supply chains. Naturally the picture that is then developed may require one or more subsequent actions. Within the survey, we asked about the measures taken to deal with any uncertainty generated from feedback from key supply chains.

**Information sought by survey respondents**

As set out in Chart 8 (overleaf) the most popular questions to ask relate to the existence
of a business continuity programme (47%), whether its scope is appropriate (44%) and relevant to the product or service being purchased (44%). This may seem obvious but in earlier surveys the focus was on the business continuity plan rather than the overall programme. In 2011 only 28% of respondents were looking for the BC programme.

Standards and codes of practice play an important role in assessing the resilience of key suppliers with 37% and 36% respectively looking for alignment or compliance. Certification lags behind on 28%.

One area with a significant increase from 2011, is asking where responsibility for BC is held in the organisation and the involvement of senior management. This clearly provides evidence of the level of commitment behind the BC programme. In 2011 the figure was just 23% but has jumped to 36% in this year’s survey.

The least likely question to ask is around the credentials of those who run the BC programme, such as statutory membership of the BCI, which would seem to be a critical one given the programme can only be as effective as the people assigned to deliver it. Only 18% asked this question, albeit this level has doubled from 2011.

How is the information collected?

51% of survey respondents required copies of supplier documentation, up fractionally from 48% in 2011. The self-assessment questionnaire retains its popularity in second place with 45% of respondents selecting this option, while there has been a rise from 37% to 42% of those who will retrieve information through audit. Requesting an independent audit is still the least popular option among those who collect information at 9%, down from 12% in 2011. 15% still do not collect any information, implying it is good enough for the supplier to just state they have business continuity in place.

“We do not ask to see their BCP but rather we ask that they state whether they have a BCP and will only award the contract to those who have a BCP for key contracts”

There were a significant number of comments to illustrate approaches taken, which are listed in Annex 1, but four are quoted here to reflect the range of approaches undertaken:

“Initial questionnaire followed up with further questions, meetings and site visits as appropriate to nature of the service being supplied”

“We would ask them to set out their BCM plans in response to particular scenarios”
“We personally visit each key supplier each year and if they have presented any significant problems then have moved to audit them”

“Activities may be performed by various disciplines, for example, internal audit, department-level vendor managers and procurement”

Validating that plans may work in practice
The crucial step of validating whether plans and intentions might be effective in practice is still one that 41% do not take. The good news is that this level has fallen from the 49% figure registered in 2011.

A number of options were offered to respondents and naturally most would use a variety of techniques depending on the assigned criticality of the supply chain partner. The most popular selection was to request documented outcome reports and actions plans following recent exercises conducted by the supplier. 40% chose this option, up from 34% in 2011. Another angle on the same technique is to approve the scope of tests in advance and sign-off all post-test reports, this was used by 11% of respondents. Holding a workshop with a key supplier or running a desk-top exercise were techniques used by 16% of respondents, unchanged from 2011. One area that has grown in popularity is the running of joint exercises based around likely scenarios, which was selected by 23% of respondents compared with just 17% in 2011.

One respondent summarises the challenge and benefit of validating supplier planning:
“The extent we get involved does depend on risk, cooperation and relationships. Most key suppliers are open to close engagement and see the opportunity of shared learning and improved longer term relationships and resilience”

Reviewing requirements
One of the biggest changes in the 2012 survey comes in the section on reviewing requirements. Given the frequency of change within organisations, it seems highly likely that priorities, scope and resources around business continuity programmes may change more frequently than key supplier contracts. Likewise new threats or opportunities may arise that need to be considered within an organisation and through its supply chain.

In the 2012 survey, 44% of respondents still wait until contract renewal before reviewing their business continuity requirements with key suppliers and their ability to meet them. This has increased from 37% in 2011.

Having said this, only 8% never review, significantly down from 18% in the 2011 survey. Likewise ad hoc meetings have dipped from 24% in 2011 to 21% in 2012. Scheduled review meetings with key suppliers at appropriate time intervals as part of an existing governance process has jumped to 40% from 31% in 2011, providing a good example of embedding BC in the organisation.

Three more dynamic options are less popular, namely reviewing business continuity whenever there is a major change event at the buyer (21%) or supplier end (20%), and whenever a new significant external threat is identified (20%).

Again comments received provide some clues into how practitioners approach this issue:
“We plan to develop a schedule, but have not at this time. We have inadequate staffing to execute at this time”
“Contracts are usually for three years, we audit at the start of the contract and mid term”
“Our concerns tend to be greater on companies that are smaller with less public information available”

“On an annual basis we select four critical suppliers for capability assessment”.

Seeking alignment and adapting

The next logical step is to check whether the BC plans of the supplier would help you. In the survey we termed this alignment. As BC programmes are organised around the objectives and priorities of the supplying firm, it is important for the buying firm to understand where it fits in the picture should an event occur. It is quite common for organisations to prioritise between services and hence customers in terms of continuing and restoring impaired activities. In practical terms being able to respond that you have been largely successful, i.e. most key suppliers are aligned, would seem to be a good result. In 2012, 23% could state this while a further 6% stated all of their key suppliers were aligned. The number who had not tried alignment was 14%, down from 24% in 2011, which again is a positive trend.

When key suppliers do not, cannot or will not meet alignment needs, then respondents will typically take a number of actions as set out in Chart 9. 48% of respondents are keen to work with the supplier where there is a will on the other side to improve. Fewer in 2012 just accept the risk at 26%, down from 39% in 2011. Bringing an additional supplier on board has become more popular at 38% (2011: 31%). Insurance or risk transfer is consistently one of the least chosen options at 5%.

Comments from respondents illustrate the choices available:

“After identifying vulnerabilities, we implement mitigation programs, generally around multi-sourcing”

“Until we find a more cost effective solution, we are using inventory to decouple our supply capability from our supplier”

End of section.
Business Continuity in Tendering and Contracting Processes

Being asked about BC in tendering
Results show that more organisations are being requested to provide evidence of their business continuity arrangements when tendering for new business. The figure for those receiving this request for the majority if not all tenders has increased from 28% to 33%. Mirroring this increase, the number who stated they are rarely, if at all asked to provide such evidence has fallen from 24% to 19%. Comments from respondents suggested the trend was driven by major global customers, the banking and financial sector, the healthcare sector and large automotive manufacturers.

Among those not seeing a customer pull are retailers and local authorities, the emergency services and regulated monopoly service providers, who either do not seek to win business or whose customers don’t have the buyer power to ask for evidence of BC programmes (i.e. consumers).

BC involvement in procurement processes
When considering the involvement of business continuity practitioners in the procurement process, there is still a long way to go. 51% stated that business continuity featured as an integral part of the procurement process from the start, a modest improvement on 47% in 2011, but a significant minority either ignore business continuity or make it a post-purchase activity. However, the comments from respondents are more encouraging, suggesting that this is one area of intense activity, so we should see future improvements on this indicator. Here’s one example:

“Increasingly BCM is becoming an integral part of the procurement process and in some cases a key upfront objective. There are still occasions where parts of the business make purchasing decisions before engaging on BCM, though the frequency is fast reducing”

![Chart 10](chart10.png)

Chart 10: 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: 207

![Chart 11](chart11.png)

Chart 11: Does business continuity feature as part of your supplier contractual discussions? Base: 202
Geographical and Sector Perspectives

Sector comparisons

Table 1 provides a comparison of selected industry sectors to highlight the significant variation in terms of disruption, preparedness and customer pull. A full sector listing is available in Annex 2.

The criteria for comparison are as follows:
- The level of incidents reported with a focus on those reporting “zero”
- The origin of the disruption in terms of tiers, with a focus below tier one
- The top five causes of disruption by levels of high impact
- The number who state their internal BCM programme considers supply chain disruption

And two further measures:
- The strength of supply chains, where the percentage against “weak supply chains” refers to how many respondents have key suppliers where less than half have BC programmes in place for their own needs
- Customer pull, where this means the frequency with which evidence of BC is requested in tendering for new business, and the percentage relates to those who do so every time or the majority of times

Table 1: Comparison data for four selected sectors. Refer to Annex 2 for full sector breakdown.

<table>
<thead>
<tr>
<th>Sector/Criteria</th>
<th>Zero Incidents</th>
<th>Disruption below tier 1</th>
<th>Top causes (% high impact)</th>
<th>In-house BCM covers Supply Chain</th>
<th>Weak Supply Chains</th>
<th>Customer pull for BCM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial Services</td>
<td>24%</td>
<td>37%</td>
<td>IT &amp; Telecom 45% Data breach 13% Outsourcer failure 11% Adverse weather 11% Cyber attack 11%</td>
<td>78%</td>
<td>21%</td>
<td>45%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>15%</td>
<td>31%</td>
<td>Currency volatility 15% Energy scarcity 15% Adverse weather 9% Product quality 9% Transport Network 9%</td>
<td>47%</td>
<td>52%</td>
<td>20%</td>
</tr>
<tr>
<td>Public Administration</td>
<td>29%</td>
<td>41%</td>
<td>IT &amp; Telecom 22% Adverse weather 17% Outsourcer failure 11% Insolvency 6% Loss of talent/skills 6%</td>
<td>61%</td>
<td>32%</td>
<td>11%</td>
</tr>
<tr>
<td>Retail &amp; Wholesale</td>
<td>25%</td>
<td>40%</td>
<td>IT &amp; Telecom 13% Fire 13% Outsourcer failure 13% Civil unrest/conflict 13% Adverse weather 6%</td>
<td>38%</td>
<td>33%</td>
<td>0%</td>
</tr>
</tbody>
</table>

The financial services sector is more advanced than other sectors in terms of extending BC programmes to consider their supply chain at 78% and their key supply chains are stronger than other sectors, confirming a head-start in the introduction of supply chain continuity. This sector also stands out for having to provide evidence of their BC programme in tendering, with 45% having had this experience in the past 12 months.

Given the high reliance on technology it is not surprising to see IT and telecom outages as the leading source of disruption in financial services coupled with information and cyber security threats.

Manufacturing serves as a good contrast, experiencing high levels of disruption relative to others (85% experienced at least one disruption) and a different range of disruptive events consistent with the sector. At 47%
fewer in-house BC programmes consider supply chain partners than in financial services and those that have addressed this issue face a major challenge with their supply base—52% of respondents in manufacturing concede that less than half of their key supply chains have business continuity for their own needs (let alone any attempt at alignment). It is also evident that to date there has been a low level of customer pull to change this situation at 20%.

With public administration, we would not expect to see a high level of customer pull but there are often statutory requirements that drive BC programmes. The range of sources of disruption provides some contrast with outsourcer failure, insolvency and loss of talent or skills causing disruption. Policy changes for public administrations to move to shared service models and private sector providers may well be exposing organisations in this sector to these threats.

The retail and wholesale sector does not have their customers requesting evidence of BC arrangements before making a purchase, and it’s good that the survey confirms this long standing assumption. It’s also consistent with the nature of the sector that their supply chain may be affected by riots or civil disturbances as these tend to occur in city centres. The sector does stand out from others for the lack of in-house BC programmes considering supply chain disruption at just 38%.

Geographical comparisons
There is significant variation in maturity with respect to considering supply chain disruption within in-house BC programmes when viewed on a geographical basis. Respondents from the UK and USA form a substantial part of the survey response and therefore lend themselves to comparison (Annex 2 provides a fuller geographical breakdown of responses).

The UK sample is drawn from 14 different sectors with 28% from financial services, 16% from public administration, 11% from professional services and IT/communications and transport/storage each sharing 7%. 80% experienced at least one disruption and 33% found the disruption originated in the extended supply chain. The London 2012 Olympics registered as one of the top five causes of some or high impact disruption and was ahead of industrial action but some way behind IT and telecom outages and adverse weather. The UK stands out from other countries in considering supply chain disruption within BC programmes with 75% confirming this compared with just 44% of US

<table>
<thead>
<tr>
<th>Country</th>
<th>Zero Incidents</th>
<th>Threats (% with High Impact incident)</th>
<th>In-house BCM covers supply chain</th>
<th>Weak Supply Chains</th>
<th>Customer pull for BCM</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK Base: 153</td>
<td>20%</td>
<td>IT &amp; Telecom 23% Adverse weather 17% Outsourcer failure 6% London 2012 Olympics 6% Industrial dispute 4%</td>
<td>75%</td>
<td>28%</td>
<td>34%</td>
</tr>
<tr>
<td>USA Base: 158</td>
<td>32%</td>
<td>Adverse weather 10% IT &amp; Telecom 7% Product Quality 7% Outsourcer failure 7% Lack of credit 5%</td>
<td>44%</td>
<td>37%</td>
<td>23%</td>
</tr>
</tbody>
</table>

Table 2: Comparison data for the UK and USA. Refer to Annex 2 for country and regional breakdown.
respondents and similar levels in Australia, New Zealand and Canada. The UK also differs from other countries in respect of customer pull for the provision of information around business continuity in tendering processes, where 34% stated that they typically have to do this compared with 23% in the US. The US sample in this survey was also drawn from 14 sectors, however manufacturing was the lead sector in terms of response at 18% with retail/wholesale at 13% and financial services at 13%. The US respondents reported lower levels of disruption and the top threat profile reflects the different mix in sectors with product quality incident and lack of credit featuring prominently.

Although the US respondents may lag on considering supply chain business continuity, those that do are slightly ahead of the UK and other countries in terms of having stronger supply chains, i.e. more than 50% of key supply chain partners have BC arrangements, and they are less likely to wait for contract renewal before reviewing their business continuity requirements with their key suppliers.

Looking beyond these two countries to a broader regional picture, we see that the region which experienced most disruption was the Middle East & Africa where 78% experienced at least one disruption. 70% of respondents from continental Europe and Central & Latin America experienced at least one disruption, while respondents in Asia experienced a quieter year with 43% registering “zero incidents”. There is a significant difference in threats when viewed on a regional basis with energy scarcity and exchange rate volatility dominating in Middle East & Africa, while IT and telecom was the primary source of disruption in continental Europe.

<table>
<thead>
<tr>
<th>Criteria/No. of employees</th>
<th>0 to 1K</th>
<th>1K to 10K</th>
<th>10K +</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample size</td>
<td>246 (46%)</td>
<td>166 (31%)</td>
<td>120 (23%)</td>
</tr>
<tr>
<td>Zero incidents</td>
<td>32%</td>
<td>28%</td>
<td>17%</td>
</tr>
<tr>
<td>More than 10 incidents</td>
<td>8%</td>
<td>8%</td>
<td>20%</td>
</tr>
<tr>
<td>In-house BCM covers supply chain</td>
<td>48%</td>
<td>59%</td>
<td>77%</td>
</tr>
<tr>
<td>Between 2 and 20 key suppliers</td>
<td>69%</td>
<td>37%</td>
<td>22%</td>
</tr>
<tr>
<td>Not tried alignment with key suppliers</td>
<td>18%</td>
<td>16%</td>
<td>7%</td>
</tr>
</tbody>
</table>

Table 3: Comparison data by size of organisation. Base: 532

Comparison by organisational size

The size of an organisation also has an impact on the experience of disruption and business continuity approach as Table 3 shows. The results are consistent with expectations—the larger the organisation, the greater the likelihood of experiencing disruption. 20% of firms with more than ten thousand staff experienced more than ten incidents compared with 8% in smaller sized entities. Larger organisations are also more developed in considering business continuity for the supply chain and more likely to have tried to align their requirements with their key supply chain partners.

End of section.
Lessons Learned and Key Challenges

“Assurance from suppliers can only go so far. A plan for dealing with the effects of a disruption is needed, even if the supplier’s business continuity arrangements are extremely robust.”

Survey respondents felt the main lesson to be taken away from the disruption they experienced was to improve their approach to business continuity in terms of risk assessment, mitigation efforts, planning and exercising.

“The plans we have in place and work we’ve done with suppliers have helped anticipate incidents, proactively plan our response, communicate to stakeholders and minimise impact. Several years ago this would not have been the case.”

Specific actions taken over the past 12 months can be divided into three broad areas of activity: More analysis, securing new policies or introducing new processes, and taking the extra step of running joint workshops or exercises with partners, the latter generated some very positive outcomes:

“Joint exercises with key suppliers and observing their exercises. These really focus the minds and the general improvement in exercising is reassuring”

### Top 10 challenges to achieving the desired level of assurance in supply chain resilience

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of buy-in from management and/or procurement as evidenced in strategy or policy</td>
<td>21%</td>
</tr>
<tr>
<td>Resource and budget availability</td>
<td>20%</td>
</tr>
<tr>
<td>Complexity/structure of the organisation</td>
<td>16%</td>
</tr>
<tr>
<td>Lack of information/cooperation from supply chain partners e.g. “confidentiality”</td>
<td>10%</td>
</tr>
<tr>
<td>Lack of options: limited by physical location, monopoly providers, specialist providers</td>
<td>10%</td>
</tr>
<tr>
<td>Trust in suppliers to do what they promise</td>
<td>6%</td>
</tr>
<tr>
<td>Lack of awareness of the impact of supply chain disruption</td>
<td>4%</td>
</tr>
<tr>
<td>Competency or education: internal and among supply chain partners</td>
<td>4%</td>
</tr>
<tr>
<td>Lack of focus e.g. too many suppliers</td>
<td>3%</td>
</tr>
<tr>
<td>Getting BC requirements into legacy contracts</td>
<td>2%</td>
</tr>
</tbody>
</table>

Table 4: Base: 167 respondents provided free-form responses

Some changes in procurement policy were also required including moving away from single source (where possible), making provision for alternative suppliers, transport routes and payment methods, and introducing buffer stocks.

“We have amended tender packs to request details of suppliers’ BCM. We have introduced a consistent rating methodology to assess supplier criticality in line with our own BIA process”

The top 10 challenges (see Table 4) are led by two related subjects in the sense that resource and budget availability in larger organisations, where most respondents are, is really a matter of priority and buy-in and not a lack of people or funds. Beyond these leading factors, there is a wide range of issues to be addressed, in some cases it would warrant a re-evaluation of the strategy. For more comments, please refer to Annex 1.
Review & Conclusions—avoiding a $4 million failure

Since 2009 consistently high levels of supply chain disruption have been experienced and events are becoming more consequential even with absolute levels dipping after 2011, a year which saw the Great East Japan Earthquake and extensive flooding in Thailand.

One area for further work is a better understanding of the cascading nature of risks and their consequences in supply chain continuity. The research in 2012 has identified that there are multiple consequences from the same event.

A number of non-traditional business continuity risks have registered in this year’s survey, most notably disruption caused by exchange rate volatility. Applying business continuity expertise specifically around contingency planning presents an excellent opportunity for practitioners to provide a more valuable service to their organisations. One other risk type also became more visible, namely disruption caused by intellectual property violations, and this deserves further analysis.

The dramatic rise in disruption through outsourcer service failures requires further study into service chains and the specific challenges inherent in them.

Given the dominance of supply chain disruption through unplanned IT and telecom outages, there is now a need to evaluate the contribution of “the cloud” to resilience.

The challenge of securing executive buy-in requires an understanding of the broader trends driving supply chain vulnerability and its disruption. In this way it will become possible to demonstrate the trend is not going to go away, however fragile corporate memory may be.

More work is also required to understand the economic impact of supply chain disruption including the value of investment in raising the level of resilience in key supply chains.

This latter work will help support the challenge of unlocking resources through executive commitment. In addition, the broader trends that are driving supply chain vulnerability and hence disruption need to be better understood.

One useful next step from this research would be to develop an assurance model that would allow a calibrated response to the question “how confident are you in the resilience of our key supply chains?”

Another business continuity specific perspective to track is whether the new international business continuity standard ISO 22301 will make efforts to seek alignment easier and thereby contribute to improved resilience.

The good news for business continuity professionals is that the BC methodology is widely seen as effective in resisting the impact of disruption, alongside its core benefits of enabling continuity and faster recovery from incidents. Good practice is documented in abundance in the survey and there is little excuse for not trying out some of the ideas.

The value of moving from a documentation centric approach for evaluating supply chain resilience to one based on active engagement and joint exercises is also clear. In closing, let’s not find ourselves in the situation that one person did:

“A major failure that impacted our customers drew management attention to the issue. It took a $4million (US) loss to get any attention.”
Respondent Profile—base 532

Chart 12: Functional role
- Business Continuity "in-house" 30%
- IT Disaster Recovery / IT Service Continuity 15%
- Risk Management "in-house" 10%
- Supply Chain/Procurement "in-house" 10%
- Supply Chain/logistics "in-house" 10%
- Health & Safety management 5%
- Corporate function (audit, finance, HR, executive) 4%
- Line of Business /Service Directorate 3%
- Quality / Business Improvement 3%
- Security (physical/virtual) 3%
- Supply chain/logistics consultant 2%
- Emergency Planning 2%
- Business Continuity consultant 2%
- Risk Management consultant 2%
- Supply Chain/Procurement consultant 2%
- Education (Risk, BC, Supply Chain) 2%
- Other 2%

Chart 13: Primary activity of the organisation
- Financial & Insurance Services 20%
- Professional Services 11%
- Manufacturing 11%
- IT & Communications 11%
- Public administration and defence 10%
- Transport & Storage 9%
- Health & Social Care 8%
- Retail & Wholesale 8%
- Energy & Utilities 6%
- Engineering & Construction 5%
- Education 4%
- Administrative & Support Services 4%
- Other (5)

Chart 14: Geographical location
- United States 22%
- United Kingdom 15%
- Australia 11%
- Germany 11%
- France 10%
- Other (20 countries) 8%
- Other (5)

Chart 15: Size of organisation by number of employees
- 0 11%
- 1-5 11%
- 5-49 7%
- 50-499 7%
- 500-999 7%
- 1,000-4,999 5%
- 5,000-9,999 3%
- 10,000-19,999 3%
- 20,000-49,999 2%
- 50,000-99,999 1%
- 100,000-199,999 1%
- 500,000-999,999 1%
- 1,000,000-19,999,999 1%
- 20,000,000 or more 1%
- don't know 10%

Chart 16: Size of organisation by revenues or budget (public sector): 460 respondents
- Less than £15M 13%
- £15M-£25M 12%
- £25M-£50M 9%
- £50M-£100M 9%
- £100M-£250M 9%
- £250M-£500M 6%
- £500M-£1B 6%
- £1B-£2.5B 6%
- £2.5B-£5B 6%
- £5B-£10B 6%
- £10B-£20B 6%
- £20B-£50B 6%
- £50B-£100B 6%
- £100B-£500B 6%
- £500B-£2T 6%
- £2T-£5T 6%
- £5T-£10T 6%
- £10T-£20T 6%
- £20T-£50T 6%
- £50T-£100T 6%
- £100T-£200T 6%
- £200T or more 6%
- don't know 10%

Fieldwork for the 4th Annual Supply Chain Resilience Survey commenced on 22nd June and closed on 31st August 2012 with 532 responses validated. All members of the Business Continuity Institute received an individual email invitation to complete the online survey. This was complemented by the Chartered Institute of Purchasing and Supply inviting its members to contribute through their existing communication methods. In addition, support is acknowledged from the following people and organisations:

- Chartered Institute of Logistics & Transport
- AIRMIC
- Colin Ive MBCI and the BRiSC community
- Buyers Meeting Point
- Kuniyuki Tashiro MBCI for translating the survey into Japanese.

We would like to thank Zurich Insurance Group for sponsoring this research for the fourth successive year and DHL Supply Chain for joining them for a second year.

We would also like to thank the BCI Partnership Working Party on Supply Chain Continuity under Steve Wicks MBCI, and the wider BCI Partnership Steering Group for their support in the development of the survey.

Author: Lee Glendon CBCI, Head of Research & Advocacy, The Business Continuity Institute

About

The Business Continuity Institute

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 organisations in preparing for and surviving minor and large-scale man-made and natural disasters. The Institute enables members to obtain guidance and support from their fellow practitioners, as well as offers 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 organisations in private, public and third sectors. For more information go to: www.thebci.org


To join as a corporate member, go to: www.bcipartnership.com

Business Continuity

Business Continuity (BC) is the capability of the organisation to continue delivery of products or services at acceptable predefined levels following a disruptive incident.

Business Continuity Management (BCM) is a holistic management process that identifies potential threats to an organization and the impacts to business operations those threats, if realized, might cause, and which provides a framework for building organizational resilience with the capability of an effective response that safeguards the interests of its key stakeholders, reputation, brand and value-creating activities.

Source: ISO22301:2012

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About

The Chartered Institute of Purchasing & Supply

The Chartered Institute of Purchasing & Supply (CIPS) is the world’s largest procurement and supply professional organisation. It is the worldwide centre of excellence on purchasing and supply management issues. CIPS has a global community of over 88,000 in 150 different countries, including senior business people, high-ranking civil servants and leading academics. The activities of purchasing and supply chain professionals have a major impact on the profitability and efficiency of all types of organisation and CIPS offers corporate solutions packages to improve business profitability.

www.cips.org
About

Zurich

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.

Zurich Insurance Group (Zurich) is a leading multi-line insurance provider with a global network of subsidiaries and offices in Europe, North America, Latin America, Asia-Pacific and the Middle East as well as other markets. It offers a wide range of general insurance and life insurance products and services for individuals, small businesses, mid-sized and large companies as well as multinational corporations. Zurich employs about 60,000 people serving customers in more than 170 countries. Founded in 1872, the Group is headquartered in Zurich, Switzerland. Zurich Insurance Company Ltd (ZURN) is listed on the SIX Swiss Exchange and has a level I American Depositary Receipt program (ZFSVY) which is traded over-the-counter on OTCQX. Further information about Zurich is available at www.zurich.com

Zurich Contact Details

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Phone: +44 (0) 0787 588 6068
Email: nick.wildgoose@uk.zurich.com
About

DHL

DHL is the global market leader in the logistics industry and “The Logistics company for the world”. DHL commits its expertise in international express, air and ocean freight, road and rail transportation, contract logistics and international mail services to its customers. A global network composed of more than 220 countries and territories and about 275,000 employees worldwide offers customers superior service quality and local knowledge to satisfy their supply chain requirements. DHL accepts its social responsibility by supporting climate protection, disaster management and education.

DHL Supply Chain Service Capability

DHL Supply Chain provides solutions for all industry sectors including retail and fashion. By understanding your business needs, DHL delivers cost effective supply chain solutions that improve efficiency. From consulting and design, sourcing and transportation through to warehousing, order assembly, distribution and returns, we manage the full supply chain operation. DHL is part of Deutsche Post DHL. The Group generated revenue of 53 billion euros in 2011.

DHL Supply Chain Contact Details

DHL Supply Chain enquiry line: 0800 316 0498
Annex 1
Annex 1—Respondent comments

On recording, measuring and reporting on supply chain disruptions

- Internal distribution centre performance metrics are reported, but any impact on third party vendor deliveries is not. Retail level sales impact is not measured
- Only those functions who align to the BCMS within the company will be aware to provide a post incident report
- Incidents or issues involving third parties are logged in to risk event software. Output generated is exposure relating to third parties
- I use my own developed process called BVI (Business Vulnerability Index)

While a BCMS is being implemented a central recording process is soon to be developed

Source of funding is usually a challenge such that the donor suggests directions, terms and conditions on procurement and supply chain management to name a few

- No post incident reporting is conducted
- All impacts, costs and learning logged and tracked
- Only lost sales measured and reported monthly but effect on productivity and revenue not measured
- This has only just started to be reported on, prompted by new ways of working brought about by the expected disruptions associated with the Olympics
- All critical suppliers identified and working with them on BC process
- We do provide incident management reports and follow-ups when key suppliers cause or threaten to cause disruption
- Our firm mostly imports from our parent company of our own product

On levels of disruption experienced

- Only product quality issues are tracked. This does not include issues with lead time or price
- 1-Scarcity of forex to import goods; 2-Late or no deliveries from local suppliers due to scarcity of forex. No inputs for their products; 3-Unstable price markets for goods and services. Prices increasing by almost 50 or 70% making it difficult for departments to budget for their requirements as a result quantities had either to be reduced or suspend the whole purchase; 4-Sub standard products on the market due to forex shortage
- There was a nationwide labour strike in Nigeria in January 2012. There was no movement for a whole week
- Back-ordered computer equipment has slowed a launch of a new area of business.
- Key incidents include issues with a US execution broker, and power supply failures. If we were to include short term weather disruptions (impact on transport delivery times), it would be 51+. However, these impacts are nominal to the total business
- Delivery of aid in war torn or fragile states
- Thailand Tsunami affected production of components used by our organisation - global shortage
- We record near misses and events. 1 event and several near misses. Event associated with delays in delivery of IT hardware associated with impact of Thai floods
On incidents that caused financial losses

- Packaging integrity is compromised when alternate materials are used without authorization causing contamination outside the typical specification
- The biggest problems we face are late deliveries from machine shops. This is turn has required us to work additional overtime in order to not ship our product late
- The recent [Company A] bank failure caused disruption to our accounts department. It took them a week to check that all payments had gone through. No financial loss, just disruption. Clients were understanding
- Principle supplier of control brand product insolvency. We incurred significant costs to transfer production and expedite orders from an alternative vendor in time for a time sensitive marketing release
- IT issues and the supply of replacement drives due to issue in the Far East
- The withdrawing of a call divert service by [Company B], so our office numbers couldn’t be directly diverted to the new offices
- Country shut down in Nigeria due to a week’s unrest following the government’s decision to withdraw a fuel subsidy
- In the last year an organisation who provides a front line service became insolvent and approximate cost to place a business continuity plan in place
- Warehouse was completely destroyed in a fire with all stock and building completely destroyed
- Riots impact on retail higher than on supply chain
- Cost to run generator during power outage
- Due to a delay in product delivery we had to postpone some surgeries with loss of income or delayed income
- UK Government changed import laws
- IT hardware delivery delays as a result of Thai floods
- A major failure that impacted our customers drew management attention to the issue. It took a $4million (US) loss to get any attention

On analysing the extended supply chain

- Three different Internet providers. In one case, two of them failed to deliver service few hours one day but the third (the mobile phone network) worked well
- We reach to the original source of the supply chain to minimize contamination to produce high purity products. When suppliers of original source are hired, we have exceptional confidence they not contaminating
- We only look at our immediate supplier
- A prolonged power failure because of the destruction of the main power station, in Cyprus
- 3PL Omani workers on strike
- The source of disruption was not at our supplier but it was a national event in two different countries - Nigeria and Kenya
- While we don’t routinely analyse the full supply chain I was able to review 3 of the disruptions I was made aware of and found one to be an immediate supplier failure and 2 to be tier 2

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Working with key supply chain partners—what if they can’t or won’t meet your BC needs?

- We would not take on a supplier unless we were happy that they had measures in place to provide continuity of service to our customers.
- Increased inventory coverage for key components.
- A mixture of the above [strategies provided as answer options] depending on the supplier / product and the market.
- Ensure that supplier takes steps to mitigate the situation with their infrastructure problems.
- In most cases we also have in-house fall back procedures.
- In truth it could be any of the above depending on circumstances, but our favoured approach is to work with a supplier to agree a plan to better align their approach with our requirements.
- We do not ask to see their BCP but rather we ask that they state whether they have a BCP and will only award the contract to those suppliers who have a BCP for key contracts.
- After identifying vulnerabilities, we implement mitigation programs, generally around multi-sourcing.
- Until we can develop a more cost effective solution we are using inventory to decouple our supply capability from our supplier.
- Changing supplier is not always possible where government departments are involved.

What BC information do you seek?

- We routinely check the financial stability of potential suppliers, number of employees, years in business, credit availability.
- BCM is not yet popular in [Country]! Being a government agency, we have to deal with the rigors of a minimum of a 3 cost canvass from different suppliers before ordering from the lowest bidder, add to that the policy that government agencies should first procure supplies from the [Government Department] and you'll be left with no choice but to make do with what the government mandates.
- We advise them to align to the "Principles for BCM requirements for the Dutch financial sector and its providers".
- We also review SAS 70 or similar reports where necessary.
- We now write the requirement for BCM into all our contracts, and judge this as part of our selection criteria.

How do you collect this information?

- In person follow-up as necessary and we will offer our assistance to aid the development of their plan.
- We personally visit each key supplier each year and if they have presented any significant problems then have moved to audit them.
- We don't collect subject information since most of the agencies and businesses in the Philippines don't have BCMP yet.
- Contractual requirement.
- We have internal procedure for outsourcing. BCM is a major requirement on RFP (Request for Proposals).
- Not currently done for all tiers; Only enforced for third party supply chain.
distribution centre services

- Audit when specified in contract
- Request evidence from critical suppliers to validate the self-assessment questionnaire, meet with critical suppliers if the questionnaire raises concerns.
- Initial questionnaire followed up with further questions, meetings and site visits as appropriate to nature of service being supplied.
- This depends on the criticality of the supplier. The more critical they are, the more we ask for
- We undertake full onshore and offshore due diligence site visits where appropriate
- Self-assessments have only been completed for specific threats such as pandemic; also have the ability in our contracts to audit event though not a mandatory requirement that one be completed
- We would also ask them to set out their BCM plans in response to particular scenarios
- Carry out assurance reviews against our BC policy

- There is a regular internal and external audit of sites and BCM
- We also run face-to-face meetings, telecons/live meetings and undertake site visits, all depending on the risk analysis we undertake. The higher the risk the deeper we look
- We also now include standard provisions regarding BCM into our contracts with suppliers
- We participate in joint testing of BCPs with key suppliers
- Activities may be performed by various disciplines, e.g., internal audit, dept.-level vendor managers, procurement

**Have you checked that key supplier arrangements may work in practice?**

- In some cases the supplier / client refuses to provide such information
- Only specific key suppliers have been subject to these controls such as our outsourced IT contractors
- We have not yet carried out any tests of suppliers BCM plans, but are intending to do so in future
- The extent we get involved does depend on risk, cooperation and relationships. Most key suppliers are open to close engagement and see the opportunity of shared learning and improved longer term relationships and resilience.
- We have plans to begin validation

**How often do you review your requirements with them and their capability to meet them?**

- Contracts are usually for 3 years, we audit at the start of a contract and mid term (circa 18 months)
- Many of our key suppliers are large national or multinational companies. Our concerns tend to be greater on companies that are smaller with less public information available
- Once we do our yearly BCP Simulation Exercise. Contact numbers are ensured to be the current ones
- We proceed with relevant reviews according to our "testing, reviewing and monitoring" procedure under our BCMS
- On an annual basis we select 4 critical suppliers for BC capability assessment
• Done once since 2010
• Annual review of all documentation, BCM and processes. Every 3 years desktop exercise
• Will vary depending on the perceived risk associated with a contract and supplier, though a minimum is at contract renewal
• Typically work on an annual review cycle unless significant change occurs in the interim
• We plan to develop a schedule but have not at this time. We have inadequate staffing to execute at this time
• Every two years as part of a new 3rd party BCM questionnaire process that is mandated by company policy

What actions taken by you have made the biggest difference to your confidence?

• Joint exercises with key suppliers and observing their exercises. These really focus minds and the general improvement in exercising is reassuring
• Workshops held for owners of private residential care homes and the provision of training and templates by in-house BC manager
• We have reviewed the BCP, conducted audits and completed 2 desktop audits for each site. Target is 3 by the end of the year
• Various drills and exercises have allowed us to see weakness and strengths. We follow up on both to improve
• New mandatory Purchasing & Procurement Policy introduced, driving the required risk assessments prior to supplier appointments
• We have sent our letter and survey forms to our key suppliers to find out whether they are BCM ready
• Defining and implementing a BCM Vendor standard. Rolling out a Vendor Continuity Program and making Category Management the owner
• Every key supplier (as a first pass) now has a contingency & continuity score, which allows us to focus out efforts on single source suppliers that have low scores
• We have amended tender packs to request details of suppliers BCM
• We have introduced a consistent rating methodology to assess supplier criticality in line with our own BIA process
• Set up supply chain intelligence department
• Implementation of board approved due diligence policy for existing and potential third parties
• Provision made to train all procurement contract officers in BCM and have offered to support them in terms of auditing critical and strategic contracts
• Identified the truly critical suppliers and specifically what they provide as it related to our value chain towards our customers, and developed a tier structure for reviewing, testing, etc. the suppliers plans based on the criticality tier each falls into
• Full assessment of our critical suppliers using a mix of self-assessment questionnaires and audits
• Mapped key suppliers and developed incident management protocols including resources
• Individual plant by plant, unit by unit risk and mitigation analyses
Annex 2
### Annex 2 - Sector breakdown across key data

*Table 5A: Comparison data for individual sectors. Refer to page 15 of this report for a description of the comparison criteria*

<table>
<thead>
<tr>
<th>Sector/Criteria</th>
<th>Zero incidents</th>
<th>Disruption below Tier 1</th>
<th>Top Causes (% high impact)</th>
<th>In-house BCM covers supply chain</th>
<th>Weak supply chains</th>
<th>Customer pull for BCM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial Services</td>
<td></td>
<td></td>
<td>IT &amp; Telecom 45%, Data breach 13%, Outsourcer failure 11%, Adverse weather 11%, Cyber attack 11%</td>
<td>78%</td>
<td>21%</td>
<td>45%</td>
</tr>
<tr>
<td>Base: 108 / 29 countries</td>
<td>24%</td>
<td>37%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manufacturing</td>
<td></td>
<td></td>
<td>Currency volatility 15%, Energy scarcity 15%, Adverse weather 9%, Product quality 9%, Transport network 9%</td>
<td>47%</td>
<td>52%</td>
<td>20%</td>
</tr>
<tr>
<td>Base: 61 / 18 countries</td>
<td>15%</td>
<td>31%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public Administration</td>
<td></td>
<td></td>
<td>IT &amp; Telecom 22%, Adverse weather 17%, Outsourcer failure 11%, Insolvency 6%, Loss of talent/skills 6%</td>
<td>61%</td>
<td>32%</td>
<td>11%</td>
</tr>
<tr>
<td>Base: 41 / 8 countries</td>
<td>29%</td>
<td>41%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IT &amp; Communications</td>
<td></td>
<td></td>
<td>IT &amp; Telecom 41%, Adverse weather 18%, Outsourcer failure 18%, New law/regs 18%, Energy scarcity 18%</td>
<td>71%</td>
<td>21%</td>
<td>57%</td>
</tr>
<tr>
<td>Base: 46 / 23 countries</td>
<td>26%</td>
<td>40%</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Professional Services</td>
<td></td>
<td></td>
<td>Adverse weather 11%, London 2012 Olympics 7%, IT &amp; Telecom 4%, Outsourcer failure 4%, New laws/regs 4%</td>
<td>54%</td>
<td>71%</td>
<td>41%</td>
</tr>
<tr>
<td>Base: 72 / 24 countries</td>
<td>40%</td>
<td>33%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Annex 2 - Sector breakdown across key data

<table>
<thead>
<tr>
<th>Sector/Criteria</th>
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<th>Weak supply chains</th>
<th>Customer pull for BCM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retail &amp; Wholesale Base: 30/7 countries</td>
<td>25%</td>
<td>40%</td>
<td>IT &amp; Telecom: 13% Fire 13% Outsourcer failure 13% Civil unrest/conflict 13% Adverse weather 6%</td>
<td>38%</td>
<td>33%</td>
<td>0%</td>
</tr>
<tr>
<td>Health &amp; Social Care Base: 30/8 countries</td>
<td>14%</td>
<td>28%</td>
<td>IT &amp; Telecom 19% Adverse weather 11% Outsourcer failure 11% Earthquake/tsunami 11% Product quality 6%</td>
<td>44%</td>
<td>30%</td>
<td>11%</td>
</tr>
<tr>
<td>Engineering &amp; Construction Base: 25/5 countries</td>
<td>31%</td>
<td>80%</td>
<td>Insolvency 22% Lack of credit 22% Loss of talent/skills 11% Outsourcer failure 11%</td>
<td>29%</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Energy &amp; Utility Base: 26/15 countries</td>
<td>33%</td>
<td>50%</td>
<td>Adverse weather 25% Fire 25% Health &amp; Safety event 13% Outsourcer failure 13% Earthquake/tsunami 13%</td>
<td>40%</td>
<td>14%</td>
<td>29%</td>
</tr>
</tbody>
</table>
Annex 2 - And by country

Table 6A: Comparison data for individual countries. Refer to page 15 of this report for a description of the comparison criteria.

<table>
<thead>
<tr>
<th>Country</th>
<th>Zero incidents</th>
<th>Threats (% with High Impact incident)</th>
<th>In-house BCM covers supply chain</th>
<th>Weak Supply Chains</th>
<th>Customer pull for BCM</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK Base: 153</td>
<td>20%</td>
<td>IT &amp; Telecom 23% Adverse weather 17% Outsurcer failure 6% London 2012 Olympics 6% Industrial dispute 4%</td>
<td>75%</td>
<td>28%</td>
<td>34%</td>
</tr>
<tr>
<td>USA Base: 158</td>
<td>32%</td>
<td>Adverse weather 10% IT &amp; Telecom 7% Product Quality 7% Outsurcer failure 7% Lack of credit 5%</td>
<td>44%</td>
<td>37%</td>
<td>23%</td>
</tr>
<tr>
<td>Australia &amp; New Zealand Base: 31</td>
<td>23%</td>
<td>IT &amp; Telecom 32% Earthquake &amp; Tsunami 16% Energy scarcity 11% Adverse weather 5% Outsurcer failure 5%</td>
<td>45%</td>
<td>22%</td>
<td>25%</td>
</tr>
<tr>
<td>Canada Base: 22</td>
<td>40%</td>
<td>IT &amp; Telecom 40% Insolvency 20% Energy Scarcity 20% Outsurcer failure 20%</td>
<td>47%</td>
<td>25%</td>
<td>20%</td>
</tr>
</tbody>
</table>
Annex 2—And by region

Table 6B: Comparison data for individual regions. Refer to page 15 of this report for a description of the comparison criteria.

<table>
<thead>
<tr>
<th>Region</th>
<th>Zero incidents</th>
<th>Threats</th>
<th>In-house BCM covers supply chain</th>
<th>Weak supply chains</th>
<th>Customer pull for BCM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe Base: 59 / 21 countries</td>
<td>30%</td>
<td>IT &amp; Telecom 32%</td>
<td>67%</td>
<td>39%</td>
<td>46%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fire 18%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lack of credit 18%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Insolvency 18%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Adverse weather 14%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asia Base: 36 / 11 countries</td>
<td>43%</td>
<td>Earthquake/Tsunami 30%</td>
<td>57%</td>
<td>73%</td>
<td>29%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Product quality 20%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Outsourcer failure 20%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Adverse weather 10%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Loss of talent/skills 10%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Middle East &amp; Africa Base: 52 / 18 countries</td>
<td>22%</td>
<td>Energy scarcity 33%</td>
<td>49%</td>
<td>76%</td>
<td>47%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Exchange rate volatility 30%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>IT &amp; Telecoms 20%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Outsourcer failure 17%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Transport network 17%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central &amp; Latin America Base: 14 / 9 countries</td>
<td>30%</td>
<td>Adverse weather 33%</td>
<td>70%</td>
<td>29%</td>
<td>20%</td>
</tr>
</tbody>
</table>