Risk in 21st Century Supply Chains

A second survey by Aon Limited and State of Flux Limited

July 2009
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Introduction

In 2008, Aon and State of Flux undertook research on supply chain risk that focused on identifying and contrasting the different practices that organisations adopt to manage their supply chain risks\(^1\). The 2008 findings showed distinct differences between the extents that supply chain risk management practices were embedded. The 2008 report put forward the concept of 'leaders' and outlined what the 'leaders' were doing that others were not and the challenges that others may be exposed to if they did not respond.

This 2009 research document focuses primarily on reporting the changing trends over the past year. Additionally, it presents six considerations that Aon and State of Flux believe should be reflected upon as part of an organisation’s approach to embedding supply chain risk management.

For 2009, we have increased the number of invitees requested to complete the survey and accordingly have received an excellent level of response. The response is double that of 2008 and stands at 100. We believe that this improves the significance and relevance of feedback.

An overview of themes from the survey

1. The risk of financial failure of suppliers has increased, perhaps unsurprisingly, given the recent economic turmoil. 75% of respondents report that they view supplier financial failure as a key risk area. Those respondents reporting actual business interruption incidents state that 7% relate to financial failure of suppliers.

2. The importance of supply chain risk management as a priority for 2009 has increased significantly (up 15% to 42% in 2009) and accountability is being raised up the organisation to board and chief officer level.

3. Organisations are embedding processes to address supply chain risks and taking a more hands-on and proactive approach. This includes communicating expectations to suppliers and using regular follow-up, supported by questionnaires and audits. Less reliance on passive strategies such as risk assessment and insurance is reported.

4. This pressure is travelling up the supply chain with respondents reporting an increased scrutiny by customers (49% reporting some or significant increase).

5. However, supply chain risk management is still relatively immature with only 15% of respondents reporting that they have a complete understanding of their suppliers’ supply chains and where they impact their operations and 42% reporting that they have no key performance indicators in place to monitor supply chain risk.

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\(^1\) Risk in 21st Century Supply Chains, a survey by Aon Limited and State of Flux Limited, June 2008
Survey findings

91% of respondents report that their supply chains have inherent risk. This has increased from 78% in the 2008 survey.

75% of respondents report financial stability of suppliers as a major risk area. This has increased from 31% in the 2008 survey. Pandemic risk is a growing concern, reported at 19%.
In 2008 the top three risks reported were: physical incident impacting supplier facilities; physical incident impacting own facilities; and data security or IT incidents.

In addition to the risk areas explicitly highlighted above, ‘other’ reported risks include: a lack of competition for supplies; theft, hi-jacking, robbery and fraud; security of power supplies; loss of talent (people); industrial action; and excess demand.

42% of respondents report supply chain risk as a priority in 2009. This has increased from 27% in the 2008 survey.
Governance

73% of respondents report that they have invested in internal functions to provide information on their supply chain risks. This has increased from 53% in the 2008 survey. Other sources that are reported are from supplier development programmes and third-party providers.

21% and 54% of respondents report that they are very familiar or fairly familiar, respectively, with what is meant by and involved with implementing supply chain risk management. This has increased from 20% and 40%, respectively, in the 2008 survey.
2% of respondents report that their supply chain risk management strategies and frameworks are optimised. This has decreased from 4% in the 2008 survey. 38% of respondents report that there is some level of formal strategy and framework, covering parts of the organisation.

Which of the following would you say best describes the current stage of development of your organisation’s Supply Chain Risk Management strategy and framework?

- Optimised – Risk management perceived to be an enabling capability for the organisation with clear knowledge sharing and continuous improvement
- Embedded – Integrated processes implemented across the organisation and embedded within business planning systems
- Established – Formal and consistent processes established across the organisation
- Formalised – Basic framework and processes being implemented in parts of the organisation with inconsistent results
- Undeveloped – Organisation aware of risk but no structured responses implemented

16% and 15% of respondents report that the board and CEO, respectively, is ultimately accountable for managing supply chain risk. This is a shift upwards in who is seen as accountable with 7% for both board and CEO in 2008. For 16% of respondents, accountability is not clearly defined.

Who in your organisation is ultimately accountable for managing risks in the supply chain?

- Other
- Not clearly defined
- Chief Risk Officer (CRO)
- Chief Operations Officer (COO)
- Chief Procurement Officer (CPO)
- Chief Financial Officer (CFO)
- Chief Executive Officer (CEO)
- Board
87% of respondents report that they are involved in the management of supply chain risks. This has increased from 60% in the 2008 survey.

73% of respondents report that they review risks within contractual agreements as a key activity in managing supply chain risk. In the 2008 survey, the most frequently reported activity to manage supply chain risk was the implementation of business continuity plans (71%).
51% of respondents report that their business continuity planning adheres to a standard and are consistently implemented across the business. This has decreased from 61% in the 2008 survey.

**Supply Chain Management**

Respondents report that their three principal drivers for the implementation of supply chain risk management is to satisfy corporate governance, for reasons of best practice and for improved performance. This remains unchanged from the 2008 survey.

**Where your organisation has business continuity plans in place, which of the following best describe these?**

- Plans have been accredited or certified to a recognised external standard
- Plans have been prepared in accordance with a recognised external standard
- Plans have been subjected to regular testing and exercising to ensure they remain up to date and relevant
- Managers have been identified to be accountable for the implementation of plans
- Plans have been implemented according to a formal procedure and are consistent between facilities / business units

**Which of the following would you say have been the prime drivers for the implementation of supply chain risk management in your organisation?**

- Seekin ISO or other international standard accreditation
- Improved performance
- CEO impetus
- Financial Analysts or Investor pressure
- Non-Governmental Organisation (NGO) pressure
- Best practice
- Impact of credit crunch and economic downturn
- Customer pressure
- Regulatory pressure
- Corporate governance
57% and 48% of respondents report that they use business impact analysis and better communication with suppliers, respectively as techniques for managing supply chain risk. In the 2008 survey, general risk assessment was reported as the most common technique (84%).

Respondents report that they implement multiple sourcing, use performance-based contracts and use safety stocks as strategies to respond to supply chain threats. In 2008 the three most frequently used strategies were multi-sourcing, risk acceptance and interruption insurance.
Supply Chain Design

36% of respondents report that there is cross-functional involvement when designing and implementing new supply chains. This has decreased from 49% in the 2008 survey.

43% of respondents report that risk management influences the way that their supply chains are designed. This has increased from 40% in the 2008 survey.
43% of respondents report that supply chain risk exposures were considered, either significantly or very significantly, when outsourcing. This has remained the same as in the 2008 survey.

Respondents report that the business functions that they have already outsourced (entirely or parts thereof) are IT (43%), logistics (25%) and facilities management (22%). This is unchanged from the 2008 survey. Other functions that respondents report they have outsourced include knowledge management, design and advertising.
26% of respondents report that they anticipate a significant or very significant increase in off-shoring in the next three years. This is unchanged from the 2008 survey.

40% and 39% of respondents report that their products and services will likely be sourced from China and India, respectively. China (26%) and India (24%) were the most common in the 2008 survey. Other geographies that were reported include Russia, Mexico, Philippines, Korea, Malaysia, Chile and Australia.
Supplier Management

85% of respondents report that their suppliers introduce risks of business interruption into their operations. This has increased from 71% in the 2008 survey.

80% of respondents report that they do not have complete visibility of their suppliers’ supply chains. This has increased from 76% in the 2008 survey.
The most common technique reported to share expectations on supply chain risk management to suppliers is communicating procurement standards and business continuity management expectations to suppliers, increasing from 24% in 2008 to 39% in 2009.

52% of respondents report that they have made contractual provisions to mitigate against business interruption caused by third-party suppliers. This has decreased from 55% in the 2008 survey.
Resilience

33% of respondents report that their business continuity plans were either effective or very effective when implemented.

26% of respondents report that a physical incident impacting either their own or their suppliers’ facilities was the root cause of business interruption. 7% of respondents report financial failure of a supplier as the root cause.
42% of respondents report that they have no metrics or key performance indicators in place to measure or track supply chain risk management performance. Of those that do, more use is being made of specific measures of cost of failures and number of audits conducted.

**Customer Expectations**

Respondents report that there is some increase in the scrutiny that their customers are placing upon their operations (increased from 35% in 2008 to 39% in 2009).
33% of respondents report more in depth analysis is being done by their customers, where specific use is being made of questionnaires. This has increased from 20% in the 2008 survey.

**Cultural considerations**

42% of respondents report that they have either entirely or significantly given consideration to their organisation’s culture when designing the approach to supply chain risk management.
Only 15% of respondents report that the organisational culture as it pertains to supply chain risk management has not changed significantly in the last three years.

Only 5% of respondents report that their operations and risk functions collaborate entirely on supply chain challenges.
Respondents’ demographics

Aon and State of Flux surveyed 100 organisations that span multiple industry sectors and geographies. The focus was on organisations operating in Europe, Middle East and Africa (EMEA). The organisations were targeted due to their differing levels of maturity in managing risk in their supply chains. The specific demographics now follow.

Respondents were asked to specify within which geography their organisations are headquartered:

- UK: 43%
- Nordic & Northern Europe: 37%
- South Africa: 7%
- Australasia: 5%
- Eastern & Southern Europe: 4%
- USA: 3%
- USA: 1%
- Middle East: 1%

Respondents were asked to specify within which function they work:

- Risk: 35%
- Procurement: 15%
- Supply Chain: 10%
- Operations: 10%
- Legal and Compliance: 5%
- Finance: 5%
The industry sector breakdown for the participating organisations is shown:

![Industry Sector Breakdown Chart]

The revenue and number of employees breakdown for the participating organisations is shown:

![Revenue Breakdown Chart]
Aon and State of Flux viewpoints

The following are significant considerations we believe organisations should reflect upon when developing their approaches to managing supply chain risks. For each consideration we have provided our viewpoint. We offer six viewpoints, one aligned to each consideration, that are based upon our research and our experience working with organisations on their supply chain risk management initiatives.

1. First, you should recognise your organisation’s position on a maturity curve for managing supply chain risk.

2. Second, you should understand your supply portfolio. In doing so you will be able to prioritise the supply categories on which you will place focus. Prioritisation should be based on the drivers of your revenue from the supply side and the complexity of the associated supply chain.

3. Third, you need to bring the right people to the table including procurement, supply chain and risk management (and potentially others) to collaborate in describing, evaluating and managing prioritised supply chains.

4. Fourth, you should seek to identify the appropriate existing processes and forums where supply chain risk management can be embedded.

5. Fifth, you should recognise that supply chain risk management is an ongoing process and fits with a continuous improvement approach. There should be a mechanism for detecting supply risk signals, collating and disseminating this intelligence. Any audit process should be consistent and incorporate a feedback loop.

6. Finally, you should account for any potential impacts of the recent economic downturn when assessing your supply chain risks.
**Recognising your starting point and agreeing on your objectives**

Like any other initiative an organisation may undertake, implementing supply chain risk management will benefit from first recognising and accepting where you currently are, agreeing where you need to get to and within what timeframe. Failing to do so can result in the initiative floundering with unclear objectives.

From our work on supply risk, we have found that organisations invariably fall into one of a number of positions on a maturity curve, summarised as follows:

- **Undeveloped** – no policies, guidelines or processes implemented.
- **Formalised** – policies, guidelines and processes implemented in parts of the organisation.
- **Established** – consistent policies, guidelines and processes implemented right across the organisation.
- **Embedded** – consistent policies, guidelines and processes implemented right across the organisation with clear accountability and escalation paths.
- **Optimised** – consistently implemented organisation-wide with knowledge sharing and continuous improvement right across the supply partner network.

To identify your position on such a maturity curve, you should reflect on the following criteria:

- Governance
- Scope
- Involvement
- Processes and available intelligence

We have included below an illustrative maturity schematic for your reference. The schematic provides a useful framework for obtaining stakeholders’ buy-in to the need for change and your ultimate objectives.
### Learning Points:

- **Executive sponsorship; clear accountability, roles and responsibilities; and well-defined communication and escalation paths** are traits of good supply risk governance.
- **The scope of supply chain assessments should span supply chains, organisational functions, supply chain partners and geographies.**
- **There should be a mechanism for detecting supply risk signals, collating and disseminating this intelligence and a feedback loop.**
- **Failure to recognise and reach consensus on your current and desired position on an agreed supply risk maturity scale can impede your supply risk initiative.**

<table>
<thead>
<tr>
<th>‘Less mature’</th>
<th>‘Leading practices’</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Governance</strong></td>
<td><strong>Governance</strong></td>
</tr>
<tr>
<td>Documented policy and guidelines.</td>
<td>Clear accountability, roles, responsibilities, communication and escalation paths. Executive sponsorship.</td>
</tr>
<tr>
<td>Scope</td>
<td>Scope</td>
</tr>
<tr>
<td>Business function or site, ‘silos’ focus for supply risk assessment.</td>
<td>Supply chain assessments span supply chains, organisational functions, business partners and geographies.</td>
</tr>
<tr>
<td>Involvement</td>
<td>Involvement</td>
</tr>
<tr>
<td>Functions working independently of one another.</td>
<td>Harnesses strengths and expertise of multiple functions.</td>
</tr>
<tr>
<td>Process &amp; Intelligence</td>
<td>Process &amp; Intelligence</td>
</tr>
<tr>
<td>Managed at site-specific level, ‘islands’ of disparate information across the organisation and supply chain partners.</td>
<td>Map, assess, evaluate and manage risks across supply chains. Mechanism for detecting supply risk signals, collating and disseminating this intelligence and a feedback loop.</td>
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</tbody>
</table>
Understanding your supply portfolio and prioritising your focus

The difficulty many organisations report they face with supply risk initiatives is where to begin. All too often, a lack of clarity on this point means that supply chain risk falls into the ‘too difficult’ category.

A pragmatic approach we advocate is to prioritise within your business portfolio the drivers of revenue from the supply side and evaluate the complexity of that supply. This allows you to identify the critical infrastructure, including suppliers, that supports your ability to generate revenue. When communicated to senior management it is additionally helpful to be able to relate your supply system to revenue generation.

Supply categories, or sub-categories, should be placed on a matrix, the positioning determined by the impact on revenue that the supply category has and the complexity of the associated supply chain. Agreement should be reached on the distinct criteria for each axis on the matrix. For example, high supply complexity could be a supply category where there are multiple suppliers, with multiple tiers in the supply hierarchy, spread across different geographies.

Many organisations find the scale of the task to be daunting. Analysing the sourcing of materials and services across multiple supply chains is a complex and time consuming activity. However leading practice suggests that suppliers and other partners can be drawn into such an undertaking, each taking responsibility for their immediate providers. Such a supply chain partnership approach, shares the load and the responsibility along the chain.

Placement of a supply category on the matrix should inform the priority and appropriate strategy to manage its supply risks. The supply portfolio matrix provides a useful framework for reaching consensus on supply priorities. An illustrative matrix is provided below for your reference. The matrix is based on the Kraljic Model that was devised to analyse a supply portfolio.

![Supply Portfolio Matrix](image)

**Legend:**

- **L**: Leverage items
- **S**: Strategic items
- **B**: Bottleneck items
- **N**: Non-critical items

**Legend for Supply Complexity:**

- **S**: Small
- **M**: Medium
- **L**: Large

**Legend for Profit Impact:**

- **S**: Small
- **M**: Medium
- **L**: Large

**Legend for Relative size of spend:**

- **S**: Small
- **M**: Medium
- **L**: Large
Learning Points:

- Use this activity to reach consensus on your supply portfolio, specifically what are your strategic supplies and which suppliers provide them.
- Mapping supplies to revenue will help when communicating the importance of managing risks of disruption.
- The complexity of supply chain and contribution to revenue generation should drive the priority placed on managing risk for each supply category.
- Organisations do not need to uncover detail on every tier associated with a supply chain hierarchy; rather they should look at how they can use their supply chain partners further upstream to collaborate on this.
Involving the right people

Organisations that embrace supply risk management involve the appropriate stakeholders throughout the supply lifecycle. This should include supply chain partners.

The reality however, in a number of organisations, is a single business entity or group function taking the lead and largely working independently to manage supply risk. There are obvious limitations to this approach, one being a lack of comprehensive visibility across the organisation on the multiple supply touch-points.

We believe that group functions are best placed to take the lead in supply risk management. We also recognise that successful management of supply chains risks requires a multi-disciplinary and cross-functional approach. At a minimum, a risk and operations (supply chain or procurement) function should be involved.

Unfortunately, our research and experience shows this is not an easy problem to overcome: the efficiencies gained through group functions are often offset by a lack of communication between functions.

Improving communication is a key catalyst to more effective supply chain risk management and should be addressed prior to the commencement of any new initiative. One small but significant recent example, of the appropriate level of communication and engagement between group functions, was one organisation’s participation in this survey, wherein the heads of risk and procurement submitted a joint response.

Learning Points:

 ✓ Organisations should look at engaging with stakeholders both across the business and with external business partners as activating ‘antenna’ that can be used to detect and provide early warning of supply risk signals.

 ✓ Use the reach and visibility of central business entities, for example group functions, to provide the framework and guide stakeholders in supply risk management.

 ✓ Establish a communication mechanism between the respective stakeholders involved in order to avoid working in ‘silos’.

 ✗ Effective supply risk management cannot be achieved without involvement from, at minimum, risk and operations personnel.
Embedding supply chain risk management in existing processes and forums

Leading organisations that have generally succeeded in embracing the issue of supply chain risk management have largely done so, not by creating systems, but by embedding risk practices and ensuring it is adequately addressed within its existing business processes. Ensuring the issue is part of the mainstream management of the organisation has generally been the key to success.

Resilience is defined as the ability of a body to return to its original shape following deformation. This is characterised by ‘bouncing back’ from adversity. Building resilience is more about changing the attitudes and behaviours of managers than implementing controls and processes. It creates a readiness to respond and adapt to changing circumstances. It is therefore about the organisation’s culture and values and how ‘things get done around here’.

In practice this means integrating responsibilities for managing supply chain risks into managers’ day-to-day remits. It is very likely that they are already accountable for these issues but in practice have not had to tools for addressing them, the focus to justify the effort nor are they incentivised to do so.

Enterprise Risk Management (ERM) offers a framework for considering sources of uncertainty, both in terms of threats and opportunities that could impact on an organisation’s strategic objectives regardless of their source. Supply chain risk management should be considered as one constituent part of ERM. Risk considerations that relate specifically to the supply chain can be embedded in existing procurement and supply chain processes. These include: sales & operations planning; spend category planning and ongoing spend category management; strategic sourcing; contracts management; and supplier management.

At the same time, the ERM process offers a discipline and practical tools for managing supply chain risks effectively. ERM is therefore a powerful tool for integrating and embedding considerations of supply chain and supplier risks within a broader context of how business risks are communicated and managed. Collating and disseminating this information in a timely and effective way, and to the right people, then becomes the key challenge.

**Learning Points:**

- Ensure that managers understand and accept accountability for managing supply chain risks.
- Ensure supply chain risks are being managed in a manner consistent with the business’s other threats and opportunities.
- Deploy simple and practical tools for managing supply chain risk consistently across your organisation.
- Avoid creating parallel committee or process structures that require additional energy and commitment to maintain.
Recognising the importance of intelligence gathering and continuous improvement

Creating Risk Awareness

A significant area of improvement evident in the 2009 survey is associated with establishing reliable sources of supply chain intelligence. Whereas previously many organisations had not considered how they might go about monitoring security of supply, this seems to have significantly changed. Organisations have invested in strengthening their internal capabilities. This implies a shift in organisational culture – where awareness of supply chain risks is more valued.

Indeed Sheffi (2007) identified that organisations that do ‘bounce back’ typically have excellent ‘corporate intelligence’. Resilient organisations are constantly scanning the horizon for what might be coming towards them. This implies they are set up to operate this way, with specific people assigned the task of looking for these type of issues and a clear reporting and escalation process for responding in a timely manner. This is often where large organisations fall down when faced with some of the economic, financial and political risk factors we have described. For example, local management in Thailand or the Philippines may be aware of growing trends but may not feel the corporate centre needs to know or may feel it is not even in their local interests to report.

We have found that organisations have started to employ portal technology to connect key stakeholders across the organisation, collating and disseminating pertinent supply chain information in a timely manner.

Business Continuity professionals often have access to sources of information not available to line management. They are also skilled in processing large amounts of data in a crisis situation and drawing out the key factors effectively. However, how well are they ‘wired in’ to procurement networks within their organisation? We have seen that bringing the right parties to the table is a key message and challenge.

Learning Points:

- Seek out sources of supply chain intelligence and create early warning systems.
- Encourage a risk aware culture where information is shared and communicated.
- Find out if your information systems are capable of handling this data.
- Challenge those who ‘hold on’ to important information.
Driving Efficient Audit and Assurance

As our survey reports, scrutiny is increasing up and down the supply chain. Customers are increasing their vigilance and suppliers are reporting increased interest. In an environment with infinitely more external scrutiny, organisations would be ill-advised not to take action.

Suppliers under tough economic conditions have little choice but to accept this increased scrutiny and the resultant additional groups of auditors. The reality is that in a complex world, customers have many suppliers and each supplier has multiple customers. Under such circumstances there is a danger of creating an ‘audit monster’. Each customer can potentially be driven to develop internal protocols and then audit its multiple suppliers against these. In turn, each supplier can potentially be faced by multiple, individually-tailored audits from a range of customers.

An efficient market would surely drive out this inefficiency over time. We can foresee two possible routes, which under certain circumstances might combine. The first route would be a consolidation of audit practices to create commonly agreed supplier audit standards. A recognised protocol would emerge that captures the best elements of individual organisation’s requirements, possibly brokered by an industry association. This has, for example, started to happen in certain industry sectors such as automobile parts and semiconductor components.

The second potential element would the emergence of audit or assurance provider(s) capable of providing independent certification against these protocols. This model already exists in a number of areas such as certification against international standards, such as ISO 9001 or ISO 14001, and the use of third party insurance surveyors.

The launch of the Business Continuity Standard BS25999 in 2007 was one element on the route towards such a solution. It is however likely that any supplier audit would require to be substantially wider in its reach than business continuity management.

Learning Points:
- Share best practice with customers and suppliers.
- View this as an undertaking that will drive continuous improvement.
- Embrace industry-wide initiatives to standardise the audit processes.
- Don’t create an unsustainable audit process.
Adapting your approach to account for current economic realities

Until 2008, managing supply chain risk was an interesting intellectual topic to discuss amongst procurement and risk professionals. It had however not really gained any traction in terms of executive attention and action. That was until the credit crunch.

The world today seems a riskier place than in 2008. 75% of survey respondents see supplier financial failure as a major concern. Indeed, 7% of respondents had to respond to this type of challenge.

The world is also highly inter-dependent. Many functions and processes are outsourced and any organisation is dependent on a network of suppliers and contractors. Maintaining a resilient supply chain relies on two strategies:

1. Prevention and Preparedness: a mitigation strategy based on preventing or controlling an event and absorbing the consequences should it occur.

2. Response and Recovery: a reactive strategy based on continuing to operate through an event that neither may nor may not have been anticipated.

Given many organisations have multiple suppliers, focusing prevention resources on more than a handful of critical supplier relationships is likely to be unrealistic.

Resilience therefore in large part comes from creating an organisational culture where responding effectively to the unexpected is a capability that is nurtured and maintained. Key to adapting and bouncing back according to Sheffi (2007) is psychologically accepting that the world is moving on and that the past certainties may need to be left behind. Organisations that can rationalise the change and move quickly and effectively will be more successful. So a barrier to managing change is trying to hold on to ‘the ways things were’ and hoping to get things back to the previous equilibrium without having to actively intervene. Organisations where people are encouraged to take on the change in a positive manner and work on the practical implications will respond more appropriately and quickly.

In real terms this means putting in place effective early warning systems on corporate intelligence. For financially unstable suppliers this might mean regular credit performance tracking as well as ongoing dialogue with suppliers. In the context of resilience, the key is ensuring that analysts know where they can best track these signals, can act early on detected signals and can ensure information is effectively communicated to allow coordinated responses. In some cases organisations have chosen to adjust payment terms, extent credit or even arrange re-financing for their suppliers rather than find themselves with a supply chain failure.

Learning Points:

✓ Ensure that there is awareness of where and how risk signals should be tracked.
✓ Let go of past certainties and respond to your current supply chain situation.
✓ Encourage your organisation to be aware to potential challenges in its supply chain.
✗ Don't use rely on a static view of supply chain risks, but invest in early warning mechanisms capable of tracking supplier issues in real time.

Hindson, A. & Harmer, S. (2009), The role of resilience in an increasing uncertain world, Continuity, May/June p29-30
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