The Role of Risk in Environment-Related Supplier Initiatives

Prepared by:

Prof Paul Cousins
Paul.cousins@mbs.ac.uk
0161 306 3459

Prof Richard Lamming
University of Southampton
R.C.Lamming@soton.ac.uk

Dr France Bowen
Haskayne School of Business
frances.bowen@haskayne.ucalgary.ca
Firms are facing intense environmental pressures along global value chains, often accompanied by high levels of risk. This briefing will discuss the role of risk in greening supply chains and the motives for undertaking different sorts of environment-related supplier initiatives. Recommendations for managers are also made.

Introduction
Current work on the greening of supply chains suffers from two main weaknesses. The first relates to the lack of description of the incidence and types of initiatives seen in practice. There has been no consideration of why environment-related supplier initiatives are undertaken in some firms and not others. Secondly, no one has provided an approach to recognising and managing the risks involved in environment-related supplier initiatives.

Model Development
The following model connects the types of exposures firms may face when considering green issues in their supply activity, how risks are perceived by managers, the strategic level of purchasing functions and the environment-related supplier initiatives firms might undertake.

Natural Hazards & Business Exposures
Firms may be exposed to hazards in the natural environment, or uncertainty in their business surroundings, both giving rise to risks which may be managed by certain types of supplier-related environmental initiatives.

Figure 1 – A model of risk in environment-related supplier initiatives

Examples of business exposures include – “technological exposure” which involves being over-reliant on a single or limited source of product, process or technology, and “strategic exposure” which involves being over-reliant on a single or limited number of suppliers (Sadgrove, 1996).

Examples of natural hazards include - “environmental impact exposures” where a firm’s activities impact the bio-physical environment, and “institutional exposures” which are rooted in an organisation’s interaction with the economic, social and political environment.

Table 1 attempts to categorise the exposures faced when considering green issues in a supply chain management context.
Table 1 – Environmental Exposures

<table>
<thead>
<tr>
<th>Underlying environmental hazards</th>
<th>Business surroundings uncertainties</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Technological exposure</td>
</tr>
<tr>
<td>Environmental impact exposures</td>
<td>Risk of over-reliance on single or restricted technological product or process that may have harmful or unforeseen effects on the physical or biological environment</td>
</tr>
<tr>
<td></td>
<td>Strategic exposure</td>
</tr>
<tr>
<td></td>
<td>Risk of over-reliance on one supplier that may impact upon the environmental in a harmful way</td>
</tr>
<tr>
<td>Economic, political and social exposures</td>
<td>Risk of over-reliance on a single or restricted technological product or process which may be outdated by a more environmentally proactive competitor, or leave firm open to institutional pressures, e.g. future legislation</td>
</tr>
<tr>
<td></td>
<td>Risk of over-reliance on a single supplier that may fall foul of environmental legislation, regulation or public opinion</td>
</tr>
</tbody>
</table>

Experiencing Perceived Loss

Managers perceive risk differently from the economic definition, seeing it in terms of loss aversion rather than avoidance of the occurrence of a probabilistic event. The exposures described in Table 1 provide guidance on the losses perceived as experienced by managers. Mitchell (1995) derives a list of six types of potential loss:
- financial loss
- performance loss,
- physical loss,
- social loss,
- psychological loss,
- time loss

In an environmental context, organisations can experience more than losses in terms of time and money, especially when perceived losses are taken into account rather than just actual losses.

Environmental Initiatives

The effective management of environmental risk is often given as a motive for increased corporate engagement with environmental issues. Roome (1992) and Hunt and Auster (1990) describe schemes of environmental strategy choices as adhering strictly to environmental legislation (“compliance”) or engaging voluntarily in corporate environmental management to a level beyond that required for compliance with regulations and law (“compliance-plus”).

Strategic Purchasing

Firms may still differ in their environment-related supply strategy choice even if perceived losses are equivalent, due to the level of strategic maturity of the purchasing function. Firms undertaking proactive environment-related supplier initiatives will have different resource bases in their purchasing function from those which do not. Carr and Smeltzer (1997) argued that strategic purchasing includes four underlying characteristics – status of the purchasing function, purchasing knowledge and skills, purchasing’s willingness to take risks and purchasing resources. These four features of a strategically focused purchasing function are combined and it is argued that the more “advanced” strategic purchasing is within the firm, the more likely it is to undertake environment related supplier initiatives.
Discussion

The ongoing research suggests that organisations tend to form into four categories: “why bother”; “no choice”; “go first”; and “enthusiasts”. Table 2 outlines how the perceived losses interact with the available resources of the purchasing function to generate different levels and types of environment-related supplier action.

Table 2 – Environment-related supplier actions

<table>
<thead>
<tr>
<th>Available Resources</th>
<th>Perceived Losses</th>
<th>Relationship Type</th>
<th>Available Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
<td>B “Why Bother?”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>C “No Choice!”</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>D “Go First!”</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>A “Enthusiasts”</td>
<td></td>
</tr>
</tbody>
</table>

Cell A: The “enthusiasts” cell occurs when there are low perceived losses, but the purchasing function has the tangible or intangible resources, skills or outward risk-taking perspective to undertake an environment-related supplier initiative. Over time, perceived losses might increase and the “enthusiast” might become a “go first”. Enthusiasts undertake actions such as Approved supplier lists, training programmes, purchasing environmental champion and organisational structure differentiating strategic supply and tactical buying.

Cell B: The other strategy a firm could adopt when the losses are perceived to be low is the “why bother” approach. Here a firm perceives little threat beyond compliance with relevant laws and regulations, and the purchasing function does not have the strategic sophistication to be able to react, so do not follow any action.

Cell C: If the level of pressure suddenly rises due to economic, political or social exposures, the “why bother” firms may begin to perceive higher losses associated with inaction, and be forced into the “no choice” position. Basic actions are followed such as information gathering or building environmental quality specifications into purchasing procedures in order to manage exposures, but still being constrained by resources. Some quality procedures such as (e.g. BS7750) are implemented, along with performance guarantees and penalty clauses.

Cell D: The “go first” scenario is the most proactive of all the available options. These firms posses a strategic and proactive purchasing function and managers perceive high losses from inaction. In this scenario, the most advanced types of environmental-related supplier initiatives are undertaken, with a view to both operational effectiveness improvements and leveraging organisational capabilities.

Examples of such initiatives include Joint development programmes (e.g. clean technology), two-way vendor assessment, Internal and external measurement, training programmes, purchasing environmental...
champion, reward/incentive schemes, and Management Information Systems for tracking data.

**Recommendations**

1. *The implementation of an environment-related supplier initiative may leave firms open to different sorts of exposure.* A lesson for practice is that it is crucial to assess the exposures the firm faces adequately before undertaking an initiative, and to monitor its actual effect on exposure once in place.

2. *Environmental initiatives can generate new skills and ways of working within purchasing.* For example, the training of personnel on environmental measures of suppliers, the development of management information systems on environmental data, or the undertaking of a joint clean technology project with a supplier.

3. *Successful environmental initiatives can raise purchasing’s profile.* A successfully implemented environment-related supplier initiative may raise the profile of purchasing throughout the organisation, and contribute to its status and rise to a strategic level within the firm.


Paul Cousins is Professor of Operations Management and CIPS Professor of Supply Chain Management at Manchester Business School, UK. His research focuses on the area of supply management, environmental supply and inter-organizational relationship management. He has published in a wide variety of journals, including *Journal of Operations Management*, *International Journal of Operations & Production Management*, and *British Journal of Management*.

paul.cousins@mbs.ac.uk

Richard Lamming is the Director of the School of Management at Southampton University. Formerly, between 1991 and 2003, Professor Lamming held the CIPS Chair of Purchasing and Supply Management at the School of Management, University of Bath, where he founded the Centre for Research in Strategic Purchasing and Supply (CRISPS).

R.C.Lamming@soton.ac.uk

Frances Bowen is an Associate Professor and Director of the International Institute of Resource Industries and Sustainability Studies (IRIS) at Haskayne School of Business, Calgary. Her main research interests cross strategy and organisational theory, focusing on corporate environmental strategy. Frances has published in journals such as the *Journal of Management Studies*, *British Journal of Management*, and *Production and Operations Management*.

frances.bowen@haskayne.ucalgary.ca

The Supply Chain Management Research Group (SCMRG) was launched in January 2006. It aims to be an internationally recognised centre of excellence for scholarly and relevant research in Supply Chain Management. Further information about SCMRG including its research projects, industry briefings and scholarly publications can be found at: [www.scmrg.com](http://www.scmrg.com)