Chapter 15: Behavioural Risks in Supply Networks

M. Seiter
International Performance Research Institute, Rotebühlstr 121, 70178 Stuttgart, Germany

15.1 Introduction

Risks within supply networks are currently an intensively discussed topic (e.g., Brindley 2004; Gaudenzi and Borghesi 2006). A variety of different types of risk have been investigated, e.g., inventory risks, delay, quality risks and even terrorist attack. However, the dimension of behavioural risk has been largely neglected in previous studies. Yet, the relevance and significance of this type of risk has significant implications in all supply chain contexts. This chapter presents the results of an explorative study conducted by the author who demonstrates that behavioural risks occur frequently and cause high losses, e.g., resulting from supply networks interruptions. These findings are supported by other studies, (e.g., Hendricks and Singhal, 2005) who showed that supply networks interruptions not only cause short-term losses but long-term underperformance from a stock-market perspective. The exploratory study also facilitated the identification of different behavioural risk types, (e.g., opportunistic behaviour or conflicts between partners), which represent the main theme of the chapter and are explored in depth subsequently.

Several scholars have conducted studies into the risk of opportunistic behaviour (e.g., Das and Teng 1999; Joshi and Stump 1999; Das and Teng 2000; Jap and Anderson 2003; Rokkan and Buvik 2003; Hallikas and Virolainen 2004; Wuyts and Geyskens 2005). Williamson (1975, p. 6) defines opportunism as “self-interest seeking with guile” and as the breaking of formal contracts. Contracts are necessarily incomplete because not all future circumstances can be anticipated at the inception of the contract (Tirole 1999). Therefore, normally there are implicit agreements between the partners, (e.g., solidarity or flexibility, besides the formal contract). The breaking of the informal agreements, Williamson (1991 p. 273) calls “lawful
opportunism”. In this chapter opportunistic behaviour will be interpreted as the breaking of explicit and/or implicit contracts between the partners within the supply networks.

The literature review shows a gap in empirical evidence about the effects of instruments which are designed to prevent opportunistic behaviour in supply networks. This chapter contributes to addressing this gap in two ways. Firstly, the instruments which are used most frequently in practice to avoid opportunistic behaviour will be identified from the empirical study. This empirical approach is necessary at this stage as it is not yet clear whether the proposed instruments are really in use in practice. Subsequent to this first objective, the second objective is to test the effect of identified instruments on the prevention and management of opportunistic behaviour.

A model is developed initially based on the Principal-Agent Theory. The results of the empirical study are incorporated in the development of this model. The model is then employed to evaluate the effects of the instruments on opportunistic behaviour, both the direct and the indirect effects. The indirect effects are evaluated by introducing the construct “asymmetric information” as a mediating variable. The model is then tested against data from a questionnaire-based study. A structural equation modelling approach is employed as this is considered to be especially suited for this purpose.

The remainder of this chapter is divided into four parts. Initially, the model is developed and explained. The details of the methodological approach employed are articulated followed by the presentation and analysis of the empirical results. The fourth section discusses the managerial and theoretical implications including the limitations of the present study.

### 15.2 Conceptual Model

The Principal-Agent Theory serves as the theoretical basis for the model (Eisenhardt 1989). This theory helps to explain the occurrence of opportunistic behaviour between a principal and an agent as a result of asymmetric information between partners within the supply network. Actions to reduce asymmetric information within supply networks are proposed as an approach to coping with or managing the risks of opportunistic behaviour.

Pratt and Zeckhauser (1985, p. 2) suggest that a Principal-Agent-Relationship exists “whenever one individual depends on the action of another”. Normally, relationships of delegation are understood as part of the Principal-Agent-Relationships. As a result, the agent agrees to undertake a duty, which is compensated by a reward. Hence, the behaviour of the agent affects the achievement of his own objectives (and rewards) and the achievement of the principal’s goals.

This characterization of a Principal-Agent-Relationship allows the interpretation of a supply network as a set of Principal-Agent-Relationships (Fig. 15.1). Starting at the end of the supply chain, the companies with direct access to the customers are to be seen as principals (“P”). Companies at the first tier supplier level are