

Determinants of dependence in dyadic buyer-supplier relationships

Cees J. Gelderman, Open University of the Netherlands, P.O. Box 2960, 6401 DL Heerlen, The Netherlands, Phone +31-45 5762590, Fax +31-45 5762103, E-mail: kees.gelderman@ou.nl

Arjan J. van Weele, Eindhoven University of Technology, P.O. Box 513, 5600 MB Eindhoven, The Netherlands, Phone +31-40 2472423, Fax +31-40 2465949, aweele@uronet.nl

Summary

It is generally agreed that ‘power’ and ‘dependence’ are important concepts for the understanding of buyer-seller relationships. However, little research has been carried out aimed at identifying *determinants* of dependence in dyadic buyer-supplier relationships. In this study we have addressed this gap, combining an extensive literature study with an empirical study (expert interviews). The study has resulted in a conceptual model of organisational dependence in dyadic buyer-supplier relationships, including:

- logistical indispensability, need for the supplier’s technological expertise, availability of alternative suppliers, and switching costs for buyer’s dependence, and
- financial magnitude, need for the buyer’s technological expertise, availability of alternative buyers, and switching costs for supplier’s dependence.

The results are discussed and recommendations for further research are provided, also in the light of a network approach to buyer-supplier relationships.

Background and objectives

Keep et al. (1998) examined the history of business-to-business relationships. They found that in each investigated case dependence asymmetry was an important force that influenced relationship development. More generally it is agreed that ‘power’ and ‘dependence’ are important concepts for the understanding of buyer-seller relationships. In the nineties however, the ‘power’-concept apparently vanished from books and articles with respect to purchasing and supply management. Concepts such as ‘cooperation’, ‘partnerships’ and ‘integrated Supply Chain Management’ placed ‘power’ in the background. In recent years there is a renewed interest in the power perspective in procurement and supply management (e.g. Laseter, 1998; Gelderman and Van Weele, 2000; Cox, 2001; Handfield and Bechtel, 2002; Faria and Wensley, 2002). The special Spring 2001-issue of *The Journal of Supply Chain Management* was dedicated to ‘the power perspective in procurement and supply management’. In that issue Cox (2001: 9) posited: “(...) it is surprising that the intuitive understanding (...) that all buyer and supplier relationships operate in an environment of relative buyer and supplier power, appears to have been lost by many practitioners and their advisors.” This statement is in accordance with Gelderman and Van Weele (2000) who earlier put forward similar statements.

Most treatments of power emphasize the critical role of dependence. In organizational studies dependencies have traditionally been used to determine the existence of power relationships (Provan and Gassenheimer, 1994). Traditionally, power and dependence issues have a prominent role in channels research. However, little research has been carried out within a more general context of buyer-supplier relationships. Moreover, most studies are aimed at explaining a variety of business phenomena by means of organization dependence variables, not at identifying *determinants* of

buyer's and supplier's dependence. In this study we will address this gap and we will contribute to the knowledge on the following research question: "What are the determinants dependence in dyadic buyer-supplier relationships?"

The scope of this study is restricted to *dyadic relationships*. At the end of this paper we will return to this point, where we will refer to a network approach to buyer-supplier relationships.

Two research methods are successively being used in this study: an extensive literature study and a series of expert interviews. The literature study will include conceptual and empirical studies to the determinants of organisational dependence. The first part of our study will result in a tentative model of determinants, which will be adjusted on the results of the empirical part (the expert interviews) to a modified model of buyer's and supplier's dependence.

Power: definitions and associations

In sociology and in organizational studies it is generally agreed that power characterizes relationships among social actors. An often quoted definition of *power* is given by Dahl (1957, p. 202-203): "A has power over B to the extent that he can get B to do something that B would otherwise not do." Blau (1964) conceptualizes power as the ability of persons or groups to impose their wills on others. A similar definition is provided by Emerson (1962, p. 32): "The power of actor A over actor B is the amount of resistance on the part of B which can be potentially overcome by A." Clearly, there is agreement among authors of frequently cited definitions that power is essentially the ability to cause someone to do something he/she would not have done otherwise (Gaski, 1984). This might explain the negative associations provoked by the power-concept. Another point of consensus is that power is not seen as an absolute quantity. Power always relates to another social actor. We conclude that a buying organization is not 'powerful' in general, but only with respect to a particular supplier in a specific buyer-supplier relationship.

There is a close relationship between *power* and *dependence*. The role of power in social exchange was developed by Emerson (1962). In his formulation, the relative dependence between two actors in an exchange relationship determines their relative power. Not being dependent, a state of independence, refers to the concept of autonomy. Dependence poses constraints in the freedom of choice of actions. A company becomes vulnerable when it loses control over resources to its exchange partners and finds itself dependent on its partner (Spekman and Strauss, 1986). With increased dependence also comes strategic *vulnerability* (Van de Ven, 1976). Frazier et al. (1989) define dependence as the degree to which a party needs to maintain its relationship with another party in order to achieve the desired goals. Dependence on an exchange partner is often connected to the costs associated with terminating the relationship and switching to an alternative exchange partner (Joshi and Arnold, 1997; Heide and John, 1988).

Power and dependence in buyer-supplier relationships

Organizations are by nature dependent on their environment for the supply of needed resources of various kinds. There are strong arguments stressing the positive sides of being dependent on specialist, high performing suppliers. Dyer (1996) demonstrated the advantages for companies in the auto industry of using and being dependent on specialized supplier networks. Frohlich and Westbrook (2001) reported a growing consensus concerning the strategic importance of integrating suppliers, manufacturers and customers into value/supply chains. Companies need complementary cognitive competence from partners to appreciate opportunities and threats they could not have

appreciated themselves. By engaging in specific investments one may develop a unique competence value for the partner, which makes the other party dependent too. Notenboom et al. (2000). found empirical evidence for this causal loop of *self-interested commitment*: specific investments increase dependence on the other party, but can also serve to increase one's value to the partner, which makes him dependent and reduces the incentive towards opportunism. In contrast, it is common sense for companies to avoid excessive and dangerous dependence on any one trading partner. Dependency increases the organization's *vulnerability* by creating problems or uncertainty or unpredictability, it reduces the organization's autonomy and degree of strategic freedom, and allows the direct transfer of benefits and profits from the dependent on the dominant organization (Bourantas, 1989). Lusch and Brown (1996, p. 33) found empirical evidence for a negative relationship between dependence and the performance of buying organizations: "Thus, as we expect, when a wholesaler aligns itself with a weaker supplier, the wholesaler's performance rises." Miles et al. (1999) examined the use of strategic alliances by small technology-based firms. They found that dependence on alliance relationships showed a negative association with overall performance. Heide and John (1988) concluded that the financial performance of agencies improved when dependence was reduced, providing that levels of specific investments were high. The choice of becoming dependent on a supplier involves dependence on the supplier's technology and competences. When asset specific investments are made, they must be safeguarded against opportunism (Heide and John, 1988).

This first exploration of power and dependence leads us to the conclusion that 'dependency' as such is not a question of being good or being bad. On the one hand, there are good reasons for avoiding (too much) dependency, but on the other hand there are equally good reasons for being dependent on suppliers. As Young and Wilkinson (1997) observed, within buyer-supplier relationships there is a tension caused by the desire to remain independent and at the same time to depend on others to achieve common ends.

Determinants of dependence

In this section we will discuss possible determinants and antecedents of organizational dependence, especially the determinants that constitute dyadic buyer-supplier dependence. The discussion includes conceptual and empirical studies to the determinants of dependence.

Conceptual studies to the determinants of dependence

Our literature study has resulted in many conceivable factors and variables that contribute to the level of organizational dependence. However, we will limit ourselves to the main conceptual studies in this area, as summarized in figure 1.

source	perspective: dependence of a(n)	determinants of dependence
Emerson (1962)	social actor	- motivational investment in goals mediated by the other - availability of those goals outside the relation with this social actor
El-Ansary and Stern (1972)	channel member	- percentage of a channel member's business - commitment to another member (relative importance) - difficulty in replacing another member (cost and effort)

Thompson (1967)	organization	- need for resource/performance - ability of others to provide the same resource/performance
Pfeffer and Salancik (1978)	social actor	- importance of the resource: magnitude and criticality - discretion over the resource - number of alternative sources
Bourantas (1989)	organization	- importance of the resource a) relative magnitude b) functional criticality c) strategic cruciality - substitutability of the source a) existence of other sources b) cost of substitution - discretion over the resource
Sriram, Krapfel and Spekman (1992)	buyer	- availability of other suppliers - importance of the supplier - buyer's switching costs - alternative buyers for the supplier's products - buyer's ability to manufacture the procured component
Geyskens et al. (1996)	dealer and supplier	- importance of the relationship - availability of alternative buyers/suppliers
Young and Wilkinson (1997)	firm	- ease of replacing
Miles et al. (1999)	technology based firm	- take advantage of opportunities without an alliance partner - need a partner for customers, for investors, for production - need to develop strategic alliances to reach potential
Johnson (1999)	distributor	- replaceability of the supplier's product line - loss in income, if the relationship was terminated
De Jong and Nooteboom (2000)	supplier	- relationship specific investments - manufacturing complexity and location specificity - replaceability of the supplier (in months) - supplier's share in customer's product
Kim (2001)	distributor and supplier	- difficulty to find alternatives - difficulty to compensate for the loss by switching
Buvik and Halskau (2001)	buyer	difficulty and costs for the supplier, replacing our company

Figure 1 Conceptual studies to the determinants of organizational dependence

A much quoted general conception of (social) *dependence* is provided by Emerson (1962, p. 32) who wrote: "The dependence of actor A upon actor B is (1) directly proportional to A's motivational investment in goals mediated by B, and (2) inversely proportional to the availability of those goals outside of the A-B relationship." At a closer look it states that dependence is determined in essence by two factors: the *need* for a resource and the availability of *alternative sources*. Many other authors identified comparable determinants. Most closely to Emerson's definition is Thompson (1967) who focussed on an organization's needs for resources and the presence of other resource providers. According to Pfeffer and Salancik (1978) three factors are critical in determining the

dependence of one organization on another. The dependence on a resource will increase, when the *importance* of the resource grows, when the *discretion* over the allocation enhances, and/or when the *concentration* of resource control increases. In addition, the importance of a resource is determined by two variables: the *relative magnitude* of the resource and the *criticality* of the resource. This approach to organizational dependence is one of the main building blocks in the Resource Dependence Theory (Pfeffer and Salancik, 1978).

The availability of alternative sources or resources is generally recognized as an important factor to organizational dependence. Next to the existence of other sources, the cost incurred by substitution (switching cost) is another factor to determine the substitutability of source. El-Ansary and Stern (1972) are well known pioneers in the field of measuring power and dependence in a channel context. They viewed dependency as a function of:

1. the *percentage of* a channel member's *business* which he contracts with another member and the size of the contribution which that business makes to his profits;
2. the commitment of a channel member to another member in terms of the *relative importance* of the latter's marketing policies of him;
3. the *difficulty* in effort and cost faced by a channel member in attempting *to replace* another member as a source of supply or as a customer.

Compared to the conceptualizations of Emerson (1962) and Pfeffer and Salancik (1978), we must conclude that principally no additional issues are raised, even within a channel context. The only specific term is the reference to 'marketing policies', which can be connected to their focus on channel leader and control. Basically the same conclusion can be drawn for the determinants of organizational dependence, as identified by other authors.

To conclude, a common finding of the conceptual studies is that dependence is a function of:

- the *importance* of the resource and
- the *substitutability* of the source.

It is noted that these factors are very much in line with Emerson's (1962) original conceptualization of (organizational) dependence. The availability of alternative sources however, is replaced by the concept of *substitutability* which covers the availability issue as well as the cost incurred when replacing a trading partner (switching cost). In addition, the importance of the resource is determined by its relative magnitude and its criticality. To gain a more solid basis for a model of organizational dependence, we will add an analysis of *empirical studies* to the determinants of dependence.

Empirical studies to the determinants of dependence

The main question to be answered in this section is: what variables have *proved* to have a statistically significant influence on the (level of) organizational dependence? Traditionally, the dependence-construct has had a prominent role in channels research. However, our literature review shows that there is only a very limited number of *empirical studies*, devoted to the *explanation* of organizational dependence. We are inclined to conclude that insignificant attention has been paid to the actual gathering of empirical evidence on the determinants of dependence. In contrast, most empirical studies that involve 'dependence'-issues select organizational dependence as an *explanatory variable*. In the last 30 years a variety of phenomena has been explained by organizational dependence, including:

- *power and control* (El-Ansary and Stern, 1972; Brown et al., 1983; Frazier et al., 1989; Anderson and Narus, 1990; Buvik and Halskau, 2001),

- *affective and calculative commitment* (Provan and Gassenheimer, 1994; Geyskens et al., 1996; De Jong and Nootboom, 2000; Kim, 2001),
- *performance and satisfaction* (Heide and John, 1988; Buchanan, 1992; Lusch and Brown, 1996; Miles et al. 1999; Buvik and Reve, 2001)
- *cooperation and competition* (Sriram et al., 1992; Young and Wilkinson, 1997)
- *governance and contracting* (Heide, 1994; Frazier and Antia, 1995; Lusch and Brown, 1996)
- *opportunistic behavior* (Provan and Skinner, 1989; Nootboom et al., 1997; Joshi and Arnold, 1997; Nootboom et al., 2000)
- *relationship development* (Keep et al., 1998)
- *transaction costs* (Sriram et al., 1992)
- *integration and adaptation* (Hallén et al., 1991; Johnson, 1999)
- *trust and supply chain responsiveness* (Handfield and Bechtel, 2002).

This not-exhaustive list of phenomena, explained by organizational dependence, confirms the earlier notion that dependence is a key construct for understanding buyer-supplier relationships.

Figure 2 summarizes the results of the empirical studies that have been found on the determinants of organizational dependence. Next we will compare and analyse the determinants with a statistically significant impact on dependence, although there are differences in scope, perspective and design of the studies. In line with the main conclusion regarding the conceptual studies, it is also concluded that in *all* empirical studies two common elements arise:

- *substitutability*, and
- *importance*.

The substitutability can be subdivided in the *switching costs* (or alternatively ‘relationship specific investments’) and the availability of *alternative sources*. The importance of a resource is operationalized in various ways, such as ‘transaction importance’, ‘share of business’, ‘relationship performance’ and ‘value to the other’. These operationalizations allow for the use of ‘importance’ as collective noun, without losing critical information. The remaining variables that are selected in the empirical studies can not be clustered in a similar, unambiguous way. They include single-used relationship characteristics, such as ‘goodwill trust’, ‘knowledge exchange’ and ‘habituation’. However, due to the limited number of empirical studies, no decisive answers were found concerning the statistical significance of the determinants of dependence. We did find some tentative empirical evidence that ‘importance’ and ‘substitutability’ have a significant impact on dependence, confirming the main finding of our analysis of the conceptual studies. These basic components will be elaborated into a tentative model of organizational dependence, in a buyer-supplier context.

source	perspective: dependence of a	determinants of dependence	significant at p < .05
Sriram, Krapfel and Spekman (1992)	buyer	1. transaction importance 2. specific investments made by suppliers	positive negative
Ganesan (1994)	retailer	1. environmental uncertainty a) volatility b) diversity 2. buyer's transaction specific investments	<i>n.s.</i> * negative positive

		3. supplier's transaction specific investments	positive
Berger, Noorderhaven and Nooteboom (1995)	supplier	1. asset specificity 2. sales to buyer as % of total sales 3. knowledge exchange 4. goodwill trust 5. network embeddedness 6. legal safeguarding 7. competence trust 8. relationship duration 9. growth of sales to buyer 10. buyer dependency	positive positive negative negative <i>n.s.</i> * <i>n.s.</i> * <i>n.s.</i> * <i>n.s.</i> * <i>n.s.</i> * <i>n.s.</i> *
Dant and Gundlach (1998)	franchisee	1. environmental uncertainty 2. relationship performance 3. relationship duration 4. specific investments	negative positive <i>n.s.</i> * positive
Nooteboom, De Jong, Vossen, Helper and Sako (2000)	buyer supplier	1. supplier's value to the buyer 2. alternative suppliers 3. habituation between partners 1. customer's value to the supplier 2. alternative buyers 3. habituation between partners 4. dedicated investments	positive negative positive positive <i>n.s.</i> * positive positive

* n.s. = not significant

Figure 2 Empirical studies to the determinants of organizational dependence

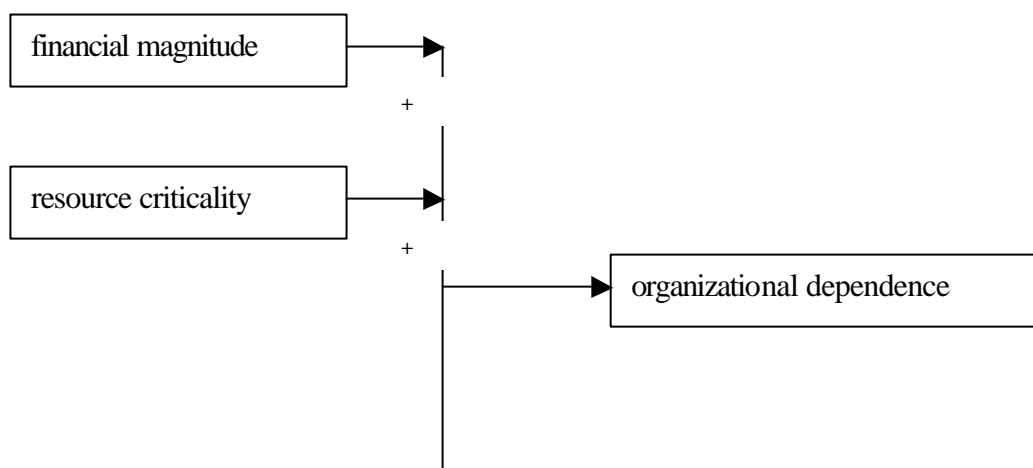
A tentative model of organizational dependence

In our tentative conceptual model of the determinants of organizational dependence, *importance* is conceptually composed of:

- the financial magnitude of the exchanged resources, and
- the criticality of the resources.

The *substitutability* encloses two elements too:

- the availability of alternative sources, and
- the switching cost, incurred when replacing a trading partner.



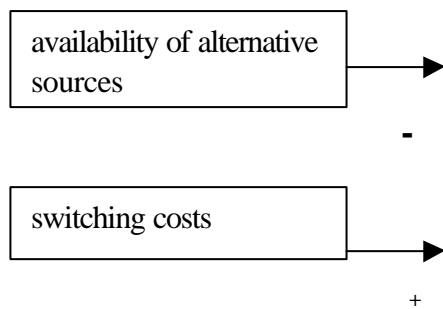


Figure 3 Tentative model of the determinants of organizational dependence

(1) *Financial magnitude*

In a buyer-supplier context the magnitude of a resource refers to the *financial magnitude* of the transaction. The relative magnitude of a resource is measurable by assessing the proportion of total inputs (buyer's dependence) or the proportion of total outputs (supplier's dependence) accounted for by the exchange. From the buyer's perspective, the relative magnitude of a resource obtained from a supplier could be measured, assessing the proportion of total purchases *or* the proportion of a product category.

(2) *Criticality*

The *criticality* of a resource refers to the functioning of an organization. A resource may be critical to the organization even though it represents a small proportion of the total input. Next to this (functional) criticality Bourantas (1989) introduced the factor strategic cruciality that corresponds with a broader idea of resource importance: the resource's contribution to the organizational's critical success factors, distinctive competences or competitive advantages.

Dependence may be produced by an organization's capabilities in performing vital functions within a supply chain. Influence can be based on critical expertise and specialized knowledge. In general, the greater the degree in which a buyer relies on the critical expertise of a supplier, the higher the buyer's dependence will be. The reverse is also true. When a component is critical to the performance and competitive advantage of an end product, the performance of the supplier is critical as well for the functioning of the organization (Bello et al., 1999). Increased dependency can be the effect of increased collaboration and supplier involvement in product development. Just-In-Time purchasing requires reliable suppliers that are willing and able to comply to stringent delivery and quality requirements (Handfield, 1993).

To conclude, criticality can mean different things, although a common characteristic is the indispensability of a resource, in view of the continuation of an . From a buyer's perspective criticality refers to the *need* for the resources of a supplier. An interrupted supply of a highly critical input would produce significant problems to the functioning of the organization. From a supplier's perspective critical outputs are more profitable, embody the supplier's core technical and/or market competences, and strategically position the supplier in key markets (cf Krapfel et al., 1991).

(3) *Availability of alternatives*

Access to the resources from additional sources is always key to organizational dependence. Organizations will be more dependent on their trading partners, whenever it is more difficult to acquire resources from others. Buyers and suppliers should be aware of the number of alternative parties that are available at a given moment. In economic theory the number of buyers and suppliers is key to the assessment of market structures (monopolistic and oligopolistic power). In the eighties

and nineties it is observed that purchasing practice has been changing from the traditional arm's length relationships with suppliers to closer, more cooperative relationships (e.g. Dwyer et al., 1987 and Swift, 1995). Management concepts such as Just-In-Time management and Supply Chain Management have promoted a general tendency to work more closely with a limited number of suppliers. These new approaches to purchasing management have logically resulted in reduced supplier bases, more single sourcing and higher levels of dependence on smaller numbers of suppliers. In many cases first-tier suppliers have no liberty in selecting suppliers or products, because they are pointed out by the customer, the OEM that dominates the supply chain. Once a component is used, the OEM is reluctant to change the design or select different components or suppliers. Many large companies therefore specify which suppliers are to be used by their first-tier suppliers, mainly because particular critical components have to fit with other critical components (Johnsen, 2000; Gelderman, 2003).

The dependence on a supplier obviously decreases when new suppliers enter the market. The most common advice to avoid dependence on a single supplier would be to contract two or three suppliers (dual or multiple sourcing).

(4) Switching cost

The concept of switching cost refers to the difficulties or costs connected with changing a firm's current trading partner. Benito et al. (1999) consider two connected types of switching costs: (1) break-off costs that form a barrier to ending old business relationships, and (2) set-up costs that form a barrier to engage in new business relationships. Replacing an existing supplier with another can produce huge non-recurring expenses. In the transaction cost theory these costs are ascribed to the transaction-specific investments (Williamson, 1975). In general, the more specific the asset, the harder it is to deploy for alternatives uses, if the relationship should be terminated. Jackson (1985) discussed switching costs as a key to understanding organizational buying behavior. Industrial organizations invest in their relationship with a supplier through some combination of money, people, lasting assets, and procedures. From the seller's point of view, it might be tempting to make it as difficult and expensive as possible for buyers to switch to another supplier. Examples of such (marketing) tactics are to lock-in the buyer to a particular system, to create strong links (physical distribution, electronic links), to stimulate personal contacts, to provide 'free' supply of software (Nicholson, 1993). The issue of switching costs will be particularly important in collaborative, long-term buyer-supplier relationships. In order to take full advantage of an ongoing relationship, companies gradually adapt their resources and routines to the specific needs of that relationship (Benito et al., 1999). This is likely to result in (mutual) exit barriers, high switching costs and therefore a high level of interdependence.

To summarize, in this study we have selected four determinants of organizational dependence on grounds of compelling logic and relevancy. Analysis of conceptual and empirical studies have resulted in the following basic predictor variables: financial magnitude, criticality, availability of alternative partners and switching cost. In the expert interviews this conceptualization has been compared to the practical insights of purchasing practitioners, allowing for adaptation in our tentative model of dependence.

The expert interviews

Data were collected through interviews. Respondents were interviewed on the basis of a two step approach, allowing for elucidation, elaboration and clarification. Firstly, respondents were invited to express their views on perceived determinants of organizational dependence, including from buyer's to supplier's dependence. Secondly, respondents were asked to react to the listed determinants of buyer's dependence and the listed determinants of supplier's dependence. Respondents were invited to a critical assessment of the model, providing sufficient time for reflection and reaction. In some cases respondents needed some days to formulate their opinions. Leading questions were: Are these the most appropriate determinants, in view of one's own practice? Alternatively, are there other, more relevant determinants?

Experts from three companies have been interviewed were conducted, involving three industrial firms in the Netherlands. The first company (DSM) is an international group of companies that is active worldwide in the field of chemicals, biotechnical products and plastics. The second company (Akzo Nobel Coatings) is a large, global business area with plants all over the world. The third company (Te Strake) is a fairly small, basically national manufacturer of technologically advanced modules (main supplier). The study entailed the use of a *key-informant method*. The first key-informants were all high-placed purchasing officers: the director of purchasing services at DSM, the purchasing vice president of a business unit at Akzo Nobel Coatings, and the strategic buyer at Te Strake. The other informants were all chosen for their specialized knowledge of and experience with the supplier relationships of their company, notably business unit managers, purchasing managers and senior buyers. A total number of 28 interviews were conducted.

Obviously, the composition of the sample is not made with the intention to be statistically representative of a population. We are aware of the limitations of this approach and it is not intended to give a final model of buyer's and supplier's dependence. Analysing the expert interviews has resulted in a modification of our conceptual model of buyer's and supplier's dependence (determinants).

Reactions to the dependence model

Our model hypothesizes on the determinants of buyer's dependence and supplier's dependence. This model is symmetrical in the sense that the same general factors are included:

- financial magnitude;
- criticality;
- availability of alternative sources, and
- switching cost.

Generally, the basic idea of mutual buyer/supplier dependence was well received by the respondents. The model made sense, considering the possibilities of the interpretation of 'dependence' and the application of purchasing strategies.

Based on the insights derived from the expert interviews, modifications of the conceptual model were necessary (see figure 4). Starting with the *buyer's dependence*, it was concluded that financial magnitude and criticality (as such) appear to be not or not very relevant. Market relations and competitive positions often require the synchronization of production systems. Just-in-time delivery and the reduction of the supply base are well known characteristics of modern business. These circumstances cause a logistics-based dependence on suppliers. In addition, there are high levels of

technology-based dependence. Industrial firms have to rely more and more on technologically advanced (key) suppliers. Interorganizational relationships can be an effective means of transferring knowledge across firms (e.g. Barringer and Harrison, 2000). Companies need the technological expertise, capabilities and resources of their suppliers, which adds to the buyer's dependence (e.g. Johnsen and Ford, 2001). Therefore, the modified model includes *logistical indispensability* as well as the *need for the technological expertise* of suppliers as determinants of the buyer's dependence. In accordance with the model, the number of alternative suppliers and the switching cost were generally perceived as important determinants.

Respondents reported high levels of *supplier's dependence*, mainly due to the financial magnitude of transactions. Basically, the financial magnitude of purchases should be assessed from the supplier's position, not the buyer's position. For the supplier's dependence it is important to know what the share is of a supplier's output taken by a particular buyer. The number of alternative buyers and the switching cost are considered to be important determinants as well. Criticality has to be redefined as a need for the buyer's technological expertise. In some cases suppliers need the technological input of the buying firm and require a transfer of know-how.

The modified model is shown in figure 4

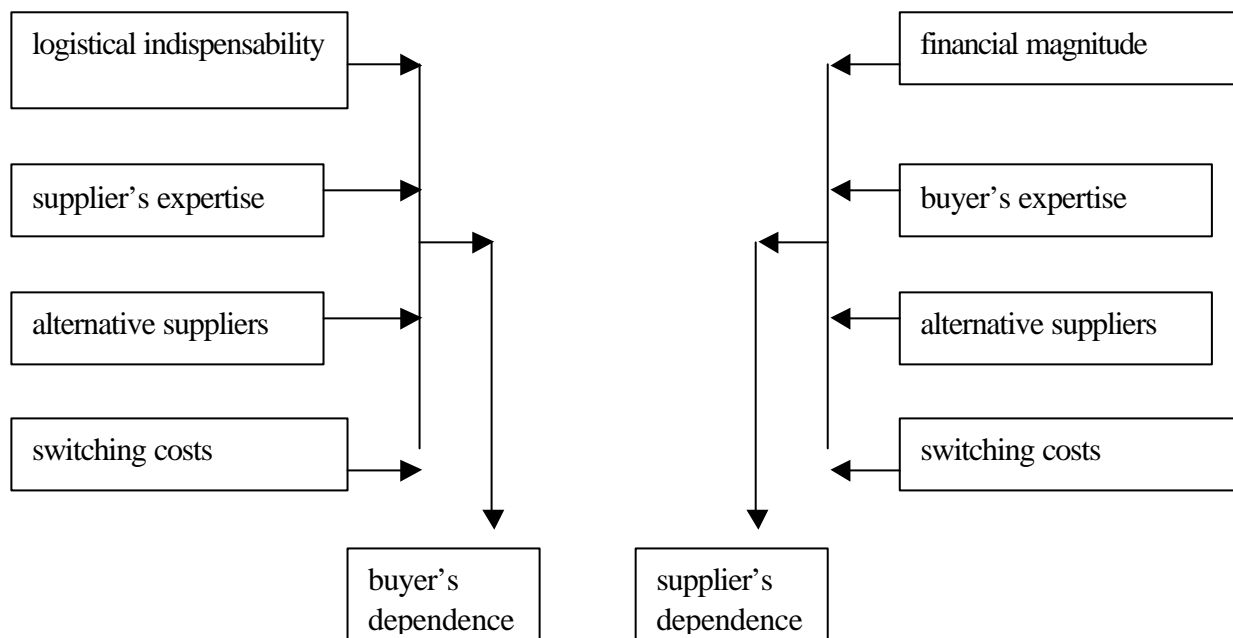


Figure 4 Modified conceptual model of buyer's and supplier's dependence

Discussion and further research

Point of departure in our study were *dyadic buyer-supplier relationships*. However, there is support for a research tradition that does not agree with the focus on dyadic relationships as the unit of analysis. We are referring to the basic principles of the Industrial Network approach, also known as the Markets-as-Networks tradition. In their view research should be focussed on the behavioral actions within the wider network. McLoughin and Horan (2000, p. 289) for instance claim that "if one wanted to understand the process of exchange in one relationship, this could only be done by understanding the wider network of relationships within which the exchange takes place". As Gadde

and Snehota (2000, p. 315) put it: "... if we are to understand the interactive nature of customer-supplier relationships (...) the scope of the analysis needs to be broadened. Each relationship is dependent with a number of other relationships, together forming a network." For example, when sourcing a new supplier, a buyer should consider the relationships that that supplier has with competing firms and perhaps with major customers. Developing the relationship with a certain supplier might give access to the supplier's other relationships and their capabilities and resources. Many large companies specify which suppliers are to be used by their first-tier suppliers, mainly because particular critical components have to fit with other critical components (Johnsen., 2000). In the expert interviews it was found that companies can be obliged to enter into forced 'partnerships', mainly because the purchasing and supply strategies have to support the overall business strategy that focuses on the demands and requirements of the major customers.

Without adding to an alleged controversy between a dyadic approach and a network approach to buyer-supplier relationships, we feel that there might be a case of false dichotomy. A network perspective does not exclude research which seeks to understand the nature of single buyer-supplier relationships (e.g. Brennan and Turnbull, 1999; McLoughlin and Horan, 2000). After all, it is recognized that dyadic relationships are the building blocks of networks (e.g. Harland, 1996). Obviously, companies will have to manage their dyadic exchange relationships with suppliers and customers. There are academics who believe that industrial networks cannot be managed, actors within them merely cope (Håkansson and Snehota, 1995). Lamming et al. (2000) agreed that networks cannot be managed, as it is impossible to control the activities and directions of other companies, which led Johnsen (2000) to the conclusion that "A better focus is the relationship between firms as the manageable entity".

The proposed operationalization and model specification might be a promising point of departure for *quantitative research* to the issues of power and dependence in buyer-supplier relationships. The assumed impact of the variables on dependence could be statistically tested by means of survey data. Additionally, the research design should allow the testing of hypotheses in varying types of buyers-supplier relationships, for instance the four types which are recognized in Kraljic purchasing portfolio matrix (Gelderman, 2003). The results of this analysis should be of significant relevance to purchasing practitioners: only if one is clear about the determinants of and their impact on a certain dependence position in a Kraljic category, it will be possible to reflect on purchasing and supplier strategies aimed at changing that position. The balance of power in the quadrants might be contingent to the sizes of the buying and the supplying companies. Alternatively, network positions or the positions in the supply chain could be included as a contingent factor.

Cox (2001) argued in favor of a power perspective on extended networks of buyer-supplier relationships. An analytical framework was presented, emphasizing the value appropriation in complex power regimes. Value appropriation refers to the net operating profits earned by companies participating in a supply chain. The framework predicts which parties will benefit more than others, based on the power relations in the various dyadic buyer-supplier relationships. It would be a challenge to operationalize the concepts and control the predictions of the model. It is worthwhile to investigate the impact of power and dependence on the distribution of profits. More in general, further research should be directed towards the importance, impact and determinants of power relations in chains of interdependent companies (supply chain). We would like to break a lance for qualitative research which allows for in-depth listening to key informants, as opposed to 'completing

questionnaires'. Faria and Wensley (2002) investigated the ways in which first-tier suppliers responded to changes in customer requirements. Their research is based on the analysis of managerial narratives. Surprising discoveries were for example the substantial expressions of power and conflict, the concerns with money and power, and the complete absence of the end customer in many of the narratives. To conclude, we would welcome research that is aimed at closing the gap between the mainstream management literature and the daily reality of power and dependence in buyer-supplier relations.

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