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International Small Business Series 21

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Evaluation of Small and Medium-Sized Enterprises as International Suppliers

edited by:
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Contents

1 Introduction

The supply industry which is mainly characterized by small and medium-sized enterprises, is facing a far-reaching change of its structures. The driving forces behind these structural changes are the varying terms of competition in final product markets, both internationalization and regionalization of the industrial division of labor and the availability of new information, communication and process technologies. Internationalization plays a major role within the adaptation strategies of small and medium-sized suppliers. However, no empirical studies exist concerning the internationalization process of small and medium-sized suppliers. These studies could form the basis to predict future developments.

This paper aims to provide a conceptual framework for such an empirical survey. It therefore consists of the following sections. The **situational analysis** (Chapter 2) points out basic structural characteristics and development tendencies in the supply industry. Furthermore, issues are discussed which enable small and medium-sized suppliers to enter foreign markets. The derivation of **internationalization objectives and strategies** (Chapter 3) emphasizes the contribution of internationalization to adaptation strategies of small and medium-sized suppliers. Different **internationalization forms** (Chapter 4) can be applied in this process. In this context it is worth to distinguish between cooperations with outsourcing principals and other suppliers. Closely coupled with the choice of the mode is the **stability analysis** of these cooperative internationalization forms (Chapter 5). While the choice of internationalization forms requires ex-ante considerations, the stability analysis is based on an ex-post analysis. The stability analysis is of importance to predict the future internationalization behavior of firms, because experiences made with specific internationalization forms in the past serve as a basis for corresponding future decisions.

On the one hand, this paper is based on observations of the internationalization behavior of small and medium-sized suppliers and their outsourcing principals, surveyed by interviews with these companies and by general empirical studies on the supply industry. On the other hand, deducive considerations are presented. The theoretical background is the transaction cost approach, which is well established to analyze subcontracting relations as well as internationalization decisions. The statements have an overall hypothetical character.

2 Situational Analysis

2.1 Structural Characteristics of the Supply Industry

Supply is defined as the regular provision of companies with parts and components. These supply goods can be used only in combination with and integrated in specific (final) products of the receiving firm. It has to be mentioned that no or just a minor further processing of the supply goods is required.[1] Outsourcing principals are OEMs (Original Equipment Manufacturers) as well as suppliers. Thus, supply is an expression of the **vertical industrial division of labor**.

With respect to Richardson the relation between vertical economic activities can be analyzed by means of the following two criteria: These are (1) **similarity** of capabilities to perform required activities and (2) **complementarity** of these activities.[2]

(1) The vertical division of labor between suppliers and outsourcing principals is advantageous if the performing activities require different capabilities. Both, outsourcing principal and supplier can concentrate resources on their core competencies, gaining synergy effects and developing the existing know-how in view of a superior competitive position. By vertical linkage, suppliers as well as outsourcing principals participate in the (horizontal) competitive strength of the partner.

(2) Through the alignment of certain supplier activities with those of outsourcing principals and vice versa, the efficiency of the vertical division of labor increases. These activities are called complementary. They are connected to partner specific assets. In detail, these specific assets exist on the suppliers side, if

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1 See Petzold 1968, p. 18.
2 See Richardson 1972, p. 888-892.

- capital goods are only suitable for the production of buyer specific supply products,
- production capacities are dedicated to certain outsourcing principals,
- transport, communication and information systems, with respect to the exchange of goods, are specifically aligned with the needs of the buyers,
- employees are trained according to the requirements of the outsourcing principals or acquire step by step appropriate skills during the cooperation,
- capacities as well as results of research and development can only be used for buyer specific supply products or supply relations,
- preventive quality assurance systems are buyer specific, and finally if
- production locations are only appropriate for (just-in-time) supplying a limited number of outsourcing principals.

Furthermore, the coordination of complementary activities requires a comparatively intensive and process-oriented exchange of information and know-how.

The principles of inter-company coordination are determined by the degree of activity complementarity of vertically linked production stages. While low complementary activities are coordinated efficiently by markets, cooperations are advantageous for highly complementary activities.

2.2 Development Tendencies in the Supply Industry

Based on the structural characteristics, in the following, development tendencies in the supply industry have to be worked out. These are not only future trends as they already characterize the structural change in the supply industry for the past years. The starting point of the analysis are the strategies of outsourcing principals which have in parts a considerable purchasing power and thus determine the structural change in the supply industry significantly.

The **competitive pressure** on the final product markets augments with the internationalization of competition, the shortening of product life-cycles, the extension of pay-off periods, an increasing product complexity, and the increasing number of product variants. At the same time, general **technological conditions** change (flexible and automated machines and manufacturing systems, information and communication technologies, transport and logistic systems). Thus, outsourcing principals react with a so-called combined outsourcing and linkage strategy on the one hand and the internationalization of procurement and production on the other hand. Both are of importance for the small and medium-sized supply industry.

Combined Outsourcing and Linkage Strategy[3]

Outsourcing means to reduce the manufacturing depth. First, the current trend towards outsourcing bases on the increasing availability and performance of flexible machines and manufacturing systems. Compared with specialized facilities, these assets show a lower degree of buyer specifity and thereby can be used efficiently by suppliers. Second, cost strategies become more important compared to differentiation strategies. Cost disadvantages caused by vertical integration were taken for granted in the past allowing to control the whole value-added chain. Today, they are becoming less accepted.

Outsourcing complementary activities requires a more intensive inter-company connection of outsourcing principals and suppliers via linkage elements. Linkage elements encompass the coordination of manufacturing processes as well as of research and development, just-in-time delivery, information exchange via computer and telecommunication networks, preventive quality assurance systems and supplier evaluation systems. New cost and time effective inter-company information, communication and transport systems stimulate the implementation of these linkage elements. Thereby, further activities can be sourced out.

Apart from single production activities, supply product-related research and development tasks are also sourced out. The outsourcing principals are interested to buy systems as complex as possible. They can be assembled immediately **(system sourcing)**. That yields to a reduction of production, assembling and development cycles and costs.

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3 See Richter 1992, p. 45-153; Hanke 1993, p. 116-188.

The following consequences for small and medium-sized suppliers can be derived from the combined outsourcing and linkage strategy: First, the **supply market volume** increases. Second, multi-stage **supply pyramids** emerge with a few direct providing system manufacturers at its top. These first-tier suppliers are supplied again by component manufacturers at the second stage, which obtain parts from suppliers at lower stages.

Third, outsourcing principals increase their **demands** of their suppliers. In general, suppliers at all stages have to reduce their costs and prices. In addition, a increasingly faultless production has to be guaranteed, a high degree of delivery reliability has to be ensured and, if requested, just-in-time delivery has to be offered. Furthermore, suppliers at the first two stages of the pyramid have to come up with a product and process-related innovative competence, which obliges them to coordinate at the lower stages of the pyramid. Due to the increasing requirements, an overall **concentration and selection process** is taking place. With these developments, the number of suppliers per product decreases **(single or double sourcing)** and the **contractual periods** extent.

Internationalization of Outsourcing Principals

Watching their cost level and to assure foreign market access, outsourcing principals from the automotive, electronic, mechanical and consumer goods industry internationalize their production and procurement, not only their sales.[4] Nationally as well as internationally producing outsourcing principals can realize the following advantages by using international supply sources **(global sourcing).** First, international differences in prices offer them tremendous cost reduction potentials, whilst the product quality is comparable. Second, the recourse to the world's first-class suppliers contributes considerably to improve the quality of final products, on the one hand, and yields to comparatively low costs of intermediate products, on the other hand. Third, OEM can fulfill local content requirements by using supply sources in foreign sales markets. Fourth, by co-

4 See Oppenländer/Gerstenberger 1992, p. 3-10.

operating with local suppliers, intermediate products specifically adapted to national requirements, can be sourced at adequate prices.[5]

The degree of freedom increases with regard to the optimization of value-added structures as outsourcing principals internationalize their production apart from procurement **(multi-sourcing)**. First, running production plants abroad, which are located close to potential suppliers in these countries, enables them to perform just-in-time procurement, joint development projects and, in addition, to keep transportation costs low. Second, they are able to reduce - and thus optimize - their manufacturing depth in foreign plants. Third, they can fulfill local content requirements more flexible due to the international production and procurement linkages.[6]

Strategies of the outsourcing principals play a major role in deriving internationalization strategies of small and medium-sized suppliers (Chapter 3). Already at this point it turns out, that the expansion of the supply market volume due to outsourcing is of restricted effect in highly developed industrial countries as far as it concerns simple parts. At the same time, suppliers of high-tech components and systems have opportunities to expand their sales worldwide.[7]

2.3 Firm Specific Advantages and the Ability to Internationalize

The ability to enter foreign markets depends on the competitiveness of a firm, which is determined by the level of firm specific advantages. These firm specific advantages are necessary to compensate foreign market entry barriers. Simultaneously, they are objects of international utilization. In the following, it has to be worked out which firm specific advantages enable small and medium-sized suppliers to enter foreign markets, which disadvantages make it more difficult for them and finally, what kind of strategies they can apply to use their advantages. Therefore, it has to be distinguished between the utilization within the develop-

5 See Fieten 1989, p. 40; Werner 1991, p. 23 f; Wildemann 1992, p. 396.
6 See Werner 1991, p. 24 f; Fieten 1991, p. 21..
7 See Engelhardt 1990, p. 47; Fieten 1991, p. 21 f; Richter 1992, p. 156-158.

ment, production, sales and marketing of complete supply products (internalization) on the one hand, and the technology transfer (externalization) on the other hand.[8]

Small and medium-sized suppliers show strengths and weaknesses that are influenced to some degree by company size. The strengths are namely flexibility, elasticity and the adaptability with regard to internal and market related changes as well as a low fraction of overhead costs. Thereby, they are able to manufacture niche products cost efficiently in small series by order. Niche products are characterized by small market volumes and little potential of economies of scale and scope. The close relation to buyers makes it easier for them to deal with special customer desires or modifications of orders more flexibly and quickly. For international utilization, the respective functions have to be carried out within the firm. As long as the level of critical mass of new subsidiaries is not reached, the only utilization alternative is export.

Weaknesses of small and medium-sized companies frequently show up in the field of strategic planning and of knowledge about competitors, potential outsourcing principals and sales markets of final products. This is especially true for the international field of competition. Chances and risks of internationalization are thereby frequently misjudged.[9] Furthermore, the international engagement of small and medium-sized enterprise is limited by restricted opportunities of external financing.

A major role for the competitiveness of suppliers play strengths and weaknesses in the field of **product and manufacturing process technology**. A distinction has to be made between available products and processes, on the one hand, and the future innovation competence which is merely applied to particular fields of technology, on the other hand. Considering long-term linkages between suppliers and outsourcing principals in combination with the increasing technology dynamics, the **innovative competence** is going to take on a more important role. Cooperations with innovative suppliers offer outsourcing principals the advantage to fall

8 See Peters 1988, p. 29; Kappich 1989, p. 60.

9 See Schmidt/Freund 1989, p. 49-52; Schmidt/Richter 1991, p. 90-94; Müller 1995, p.26.

back on competitive suppliers without carrying out cost intensive and time consuming supplier substitutions. This raises the acquisition potential of suppliers. Compared with their European competitors, German small and medium-sized suppliers rate their own future-oriented innovation competence between good and excellent. Even better judgments are obtained for their current technologies.[10]

While present product and process technologies can be utilized by means of technology transfer, opportunities for future-oriented innovative competence are restricted to a larger extent by the linkages to employees and company structures.

Just-in-time logistics as well as the fulfillment of related requirements in view of quality assurance and electronic inter-company information exchange provide suppliers with an additional potential key strength. This turns out to be true especially for enterprises that are supplying mass and series producers. The international utilization of corresponding skills can occur by an external technology transfer or by supplying foreign outsourcing principals just-in-time. The latter is related to investments abroad.

3 Goals and Strategies of Internationalization

Developments in the supply industry (see section 2.2) lead to opportunities and threats for small and medium-sized suppliers. These can be used or anticipated by strategies which aim at intensifying research and development activities, to reduce costs, to heighten cooperations with outsourcing principals and to diversify customers. These strategies can be realized simultaneously - but generally priorities have to be set as resources are limited.

Internationalization is a means for the realization of these strategies. Against the background of the OEMs' internationalization it might play a key role. Consequently, **goals of internationalization** can be derived from each strategy.

10 See Schmidt/Richter 1991, p. 78 f.

With regard to shrinking product life cycles it is necessary that steadily increasing research and development expenses pay off in shorter periods of time. This is enforced by the extensive international utilization of firm specific advantages. Especially niche products often reach break-even points regarding development and production costs only if they are sold worldwide. Furthermore, external firm specific advantages of foreign suppliers can be used, which is particularly true for the development of complex systems. Thereby, development expenses are reduced directly.

Today, the continuous reduction of costs, namely by an active cost management, is a basic success factor for almost every supplier.[11] Comparative cost differences between countries can be exploited by the internationalization of procurement or production respectively. Furthermore, economies of scale and scope caused by growth in sales and production or by co-production arrangements with foreign suppliers are realizable.

Internationalization contributes to intensifying cooperations with outsourcing principals by internationalization of existing supply relations, on the one hand, and purposeful acquisitions of foreign outsourcing principals, who are interested in close cooperations, on the other hand. Finally, internationalization contributes to the customer diversification by acquiring new foreign outsourcing principals.

Internationalization strategies channel measures to realize internationalization goals. Real internationalization strategies are comprehensively described as multidimensional.[12] However, the following considerations concentrate on foreign market entry strategies and the degree of foreign market coverage. Both partial strategies are of relevance for the supply industry, because they refer to the relation between suppliers and outsourcing principals.

With regard to entry strategies it has to be distinguished whether the market entry is to be performed in cooperation with present outsourcing principals or by direct/indirect acquisition of new customers. Indirect acquisitions of outsourcing principals are carried out through a third party, e.g. sales agents or cooperating

11 See Gaitanides 1991, p. 97.
12 See Scholl 1989, p. 986 f.

foreign suppliers. Concerning foreign market coverage it has to be differentiated whether only a single/a few selected outsourcing principals or a multitude of potential customers in the target country should be supplied in the long-term. The systematic combination of these strategic options yields to the following matrix of internationalization strategies.[13]

		Foreign Market Entry Strategy	
		Cooperation with present outsourcing principals	Direct or indirect acquisition of new outsourcing principals
Foreign Market Coverage	Single outsourcing principal in the target country	Strategy I **Internationalization of existing supply relations**	Strategy IV **Strategy of selective outsourcing principal acquisition**
	Numerous outsourcing principals in the target country	Strategy II **Springboard Strategy**	Strategy III **Strategy of broad outsourcing principal acquisition**

Diagram 1: Matrix of Internationalization Strategies

Internationalization of Existing Supply Relations (Strategy I)

Following this strategy a supplier internationalizes in conjunction with a present outsourcing principal in order to intensify an existing cooperation. Therefore, an established, successful supply relation is multiplied internationally. Thus, OEMs

13 Strategies are the result of a conscious and systematic planning and decision process. This process is often not very pronounced in small and medium-sized enterprises. Notwithstanding, internationalization is of strategic importance for small and medium-sized suppliers because it binds them on a long-term basis and determines their future development considerably. Therefore, the internationalization strategies to be derived are in any case a basis to describe and classify different strategic behavioural patterns of small and medium-sized suppliers.

are able to fall back worldwide on a definite set of competitive suppliers. They save time and gain economies of scale and scope in the fields of supplier development and inter-company coordination in central areas such as product development.

This strategy, which is often induced by outsourcing principals, focuses consistently on the integration of suppliers into the multi-sourcing concepts of buyers.[14] The suppliers production can be located in his place of origin, in the outsourcing principals host country or in an export target country of the outsourcing principal.

By pursuing this strategy, suppliers have the opportunity to transform a unilateral into a mutual dependence of a bilateral monopoly. However, for heavily unilaterally depending suppliers, the internationalization of existing exchange relations is connected with serious risks. In general, internationalization strategies contributing to customer diversification are preferable for them.

Springboard Strategy (Strategy II)

With this strategy suppliers internationalize in cooperation with present outsourcing principals, too, but they do not strive to intensify an existing supply relation. Instead, they cooperate with their present outsourcing principals to overcome foreign market entry barriers in order to open up a whole foreign market in the long-term. In other words, the cooperation is a springboard to get established on the foreign market. Thus, suppliers can use and anticipate the country-specific knowledge of their outsourcing principals and share market entry investments with them. Therefore, suppliers reduce respective costs as well as the risks of internationalization.[15] While sales concentration increases on a short-term basis, the

14 See Werner 1991, p. 25; Hoffmann/Linden 1995, p. 42. The focus on this strategy was confirmed by purchasing managers of the automotive industry. They emphazised in this context, that even medium-sized suppliers have a potential to internationalize.

15 This strategy is followed by the US-american company Solectron Corp. with the planned takeover of the curcuit board fitting from Hewlett-Packard GmbH in Böblingen and the establishment of an own subsidiary in Böblingen/Sindelfingen (see Handelsblatt 1995, p. 17).

springboard strategy contributes to customer diversification through the acquisition of new buyers.

Strategy of Broad Outsourcing Principal Acquisition (Strategy III)

This strategy aims at realizing the goal of customer diversification directly, without taking the circuitous route of an at least temporary dependency through an increasing cooperation with present outsourcing principals. If no present outsourcing principals are available for a cooperative market entry, the strategy of broad acquisition is the only opportunity to develop a foreign market as a whole. Usually, suppliers align their activities with the outsourcing principals just as much as necessary to acquire new customers while pursuing this strategy.

Strategy of Selective Outsourcing Principal Acquisition (Strategy IV)

This strategy focuses on the acquisition of new foreign outsourcing principals, but not to open up a foreign market as a whole. It is primarily suitable for suppliers that distinguish themselves by the ability and willingness to align their activities with the partner's activities in a complementary way. Thus, suppliers expose themselves in a relatively high - although mutual - dependency. For that reason, they choose their outsourcing principals carefully and selectively. This strategy combines strategies to intensify supply relations with customer diversification strategies better than any other internationalization strategy discussed against the background of limited corporate resources in small and medium-sized enterprises.

4 Choice of Internationalization Forms

4.1 Outsourcing Principal-Oriented Forms of Internationalization

Various internationalization forms are suitable for the realization of the four internationalization strategies. Therefore, it is useful to distinguish between internationalization forms regarding exchange relations with outsourcing principals and other suppliers.

Supply is an expression of the vertical industrial division of labor. This justifies to regard the decision on cooperations with outsourcing principals as a starting and reference point in analyzing the choice of internationalization forms (see this section). International cooperations with suppliers as an alternative will be analyzed in section 4.2.

Outsourcing principal-oriented internationalization forms are fixed by
- the complementarity of the outsourcing principal's and supplier's activities,
- the governance structure which coordinates inter-company exchange relations and
- the location of the supplier's activities.

Determinants of these three partial decisions as well as interdependency among them will be analyzed in turn.

4.1.1 Complementarity of Activities and Governance Structure

Core of the choice of internationalization forms is to fix the complementarity of linked activities of suppliers and buyers. The degree of complementarity is by no means - as often assumed - given from outside. Instead, it depends on the division of activities between suppliers and outsourcing principals. In detail, the supplier's product range offered to a certain outsourcing principal, the extent and division of product-related services (research and development, quality assurance, logistics), the process technologies to be applied, and finally the way and intensity of communication between suppliers and outsourcing principals have to be fixed.

Generally, a stronger alignment of the supplier's activities with the outsourcing principal's and vice versa can offer the following **complementarity advantages**. First, production costs of suppliers and/or of outsourcing principals are lower compared to the situation of less complementary activities. Second, development and manufacturing cycles can be shortened due to the coordination of products and processes. Third, buyer specific supply products can contribute to differentiate final products.

These advantage are confronted with **drawbacks** resulting from **activity complementarity**. First, certain economies of scale and scope can be realized only to a small extent due to the alignment of the supplier's activities with the outsourcing principal's. Second, transaction costs arise in connection with the complementarity of activities. The latter has to be explained shortly by means of a digression concerning the transaction cost approach.

Digression: Transaction Cost Approach:[16]

Transactions costs result from initiating, negotiating, completing, supervising and adapting contracts in the same way as from conflict solving, arbitration and the commitment to contracts. Apart from these external transaction costs originating in contracts between independent firms, transaction costs develop also within the firms hierarchy (internal transaction costs).

By choosing an optimal **governance structure** total transaction costs are minimized. Substantially, the coordination of economic activities is based upon two different principles: the pricing mechanism of the market, on the one hand, and orders within the hierarchy of the firm, on the other hand. The range of governance structures for vertical exchange relations reaches from the anonymous market over arrangements which are close to markets like informal or long-term/complex contracts up to hierarchically characterized joint ventures.

The level of transaction costs depends on several **transaction cost determinants**. These are the uncertainty about the partner's behavior, asset specificity, frequency of transac-

16 The transaction cost approach goes back to the essay "The Nature of the Firm", which was written in 1937 by Ronald Coase (see Coase 1937, p. 386-405). Coase explains the formation and existence of firms by means of transaction costs. Williamson deepened and expanded the transactions cost approach since the mid-seventies (see Williamson 1985). It is used to explain the internationalization of firms mainly by Buckley, Casson, Rugman, Dunning and Teece.

tions as well as the intensity of communication and know-how exchange between buyers and suppliers.

Uncertainty about the partner's behavior: Uncertainty about the future, potentially opportunistic behavior of exchange partners is a prerequisite for the origination of transaction costs. Only against this background, the following transaction cost determinants are significant. Transaction costs grow c.p. with the uncertainty related to the behavior of the partner.

Asset specificity: By investing into specific assets, complementarity advantages mentioned above are realizable. The value of assets is determined considerably by the level of these advantages. It is highest if assets are used in that supply relation with which they are aligned. The difference between the asset value in its first best use compared with its second best application is described as quasi-rent. It rises with an increasing asset specificity. The quasi-rent is exposed to the hazard of being exploited opportunistically by the exchange partners. It is therefore efficient to safeguard quasi-rents - causing transaction costs - by cooperative governance structures. The relevance of specific assets in the supply industry was emphasized in this paper several times. They play an important role for the analysis of the vertical industrial division of labor.

Intensity of communication: The more intensive the communication between outsourcing principals and suppliers to coordinate the operational business the higher the transaction costs caused.

Frequency of transactions: The frequency of transactions is to register in order to ascertain different shares of fixed costs per transaction for several governance structures. Hierarchic or cooperative, fixed cost-intensive governance structures are becoming advantageous against market related structures with the number of transactions that occur.

Intensity of know-how exchange: The exchange of tangible intermediate products is often connected with a complementary exchange of intangible know-how causing transaction costs. This know-how exchange takes place during sales talks and contractual negotiations, in connection with the integration of supply products into final products as well as in joint research and development projects. Transaction costs stem from the codification, explanation and illustration of know-how. Furthermore there is the danger, that know-how as a public good can be transferred from the know-how receiver to a third party. It is efficient to restrict the risk of diffusion by concluding and supervising contractual arrangements. The more intensive the know-how exchange, the higher the transaction costs.

All in all, transaction costs grow with an increasing activity complementarity. Thus, cooperative or even hierarchic governance structures become relatively advantageous against governance structures which are close to the market. The other way around existing or realizable, more or less cooperative governance structures allow to enhance the activity complementarity. Therefore, considerable interdependencies exist between the complementarity of activities and the governance structure.

As a **summary,** it can be concluded that the complementary alignment of activities is bound to certain advantages and drawbacks. The difference between them is called **cooperation rent**. While disadvantages (especially transaction costs) arise directly with the outsourcing principal or supplier, advantages are not definitely shared ex-ante among the partners, because they have a "de facto right to pursue their own interests at the expense of others."[17] The chance to exploit cooperation rents opportunistically can be limited by contractual arrangements, but the entire exclusion of opportunistic behavior is neither possible nor efficient.

4.1.2 Location Choice

The location choice as the third part of the internationalization form choice is based on a number of sales and procurement-oriented location factors, advantages and disadvantages of location production sharing, as well as on financial and personnel capabilities of the supplier. In detail, the availability, quality and costs of factors and intermediate products, tariff and non-tariff barriers to trade, incentives and barriers to invest abroad, currency exchange rates, transportation expenses of purchased materials, services and final products, opportunities to minimize taxes by internal pricing, contributions to fulfill final product-related local-content requirements as well as economies of scale and scope play a role.

Important reasons for location shifts of suppliers have to be seen in connection with the complementarity of the outsourcing principal's and supplier's activities. The physical closeness to outsourcing principals is often a prerequisite to gain complementarity advantages. It makes it easier or even possible to perform joint research and development projects as well as the logistical integration via just-in-

17 Buckley/Casson 1988, p. 21.

time delivery systems. The advantages of just-in-time delivery are the bigger the more distinctive the system character of intermediate products is, the higher the quantitative, and in value rated, supply volume is, and the more frequent deliveries occur. The latter holds particularly for supplying mass and large series producers.

Possibly, a location shift is a prerequisite to start an international supply relation. This is even more valid the longer the distance between the supplier's head-quarter and the foreign location to be supplied. The range of activities abroad reaches from sales branches, distribution centers, and research and development offices to a complete subsidiary with a comparatively high manufacturing depth. With the location shift to a foreign country, additional specific assets come into existence on the supplier's side, which have to be protected by appropriate governance structures. In this respect, the location choice is related to the choice of governance structures.

4.1.3 The Impact of Transaction Costs in the International Context

Up to now the choice of activity complementarity and governance structures were explained generally, but not specific to internationalization. However, several transaction cost determinants show a particular shape in the international context. Therefore, international supply relations might show a different degree of activity complementarity and/or another governance structure than similar national ones.

For example, the **uncertainty** about the behavior of newly acquired foreign outsourcing principals (Strategy III and IV) is relatively high due to cultural differences and often lacking information about their previous behavior. In addition, the future behavior of foreign outsourcing principals can be predicted only in a limited way because of the poor knowledge of basic conditions abroad under which foreign buyers act.

The uncertainty about the behavior of present outsourcing principals as foreign market entry partners (Strategy I and II) will only differ negligibly from the corresponding uncertainty in the national context. Even if these outsourcing principals operate under foreign conditions less predictably, an opportunistic behavior is unlikely since there are interdependencies within the existing business relation.

Furthermore, investments into additional **specific assets** are necessary in the course of internationalization. These are investments to adapt products and processes to country specifications, established standards and climatic conditions. Moreover, expenses for foreign market research, changes in the company's organization as well as the above-mentioned investments into foreign production, distribution, research and development facilities have to be considered.

The specificity of these assets caused by internationalization depends considerably on the intended foreign market coverage. If at least in the long-term a number of outsourcing principals are targeted in a country (Strategy II and III) a more or less huge number of alternative exchange partners are at the supplier's disposal. Opportunistically exploitable quasi-rents are correspondingly low. If foreign activities refer on the other hand only to one or a few outsourcing principals, exploitable quasi-rents are comparatively high.

Besides foreign market-related investments, specific assets arise in the context of internationalization by starting new business relations in the same way as on the national level (Strategy III and IV). Many of these specific assets can be dropped, if the internationalization is effected in cooperation with present outsourcing principals (Strategy I and II). E.g., no additional buyer specific product and process developments are necessary.

Likewise, starting a new business relation involves a more or less intensive **know-how exchange**, depending on the intended activity complementarity. In comparison, the international extension of an existing supply relation usually does not require an additional know-how transfer. Finally, communication in the operational business causes comparatively high transaction costs within international supply relations due to the physical and cultural distance between the partners.

With respect to the particular shape of transaction costs determinants in the international context it is to **summarize**: First, with starting international supply relations, transactions costs are generally higher than in similar national relations. Second, transaction costs are higher in cooperations with new foreign outsourcing principals than in internationally extended present supply relations. Third, the smaller the potential number of buyers in a foreign country, the higher are the transaction costs.

Suppliers can meet these higher transaction costs caused by internationalization with the choice of internationalization forms in two ways.[18] First - following the logic of the transaction cost approach - by integrating comparatively many **hierarchic elements** into the principally market-like or cooperative governance structure. For example, it might be efficient to secure the amortization of specific assets caused by internationalization through long-term or complex supply contracts. Alternatively, such specific assets can be taken over jointly by the supplier and outsourcing principal or even in total by the outsourcing principal. For instance, outsourcing principals can recompense suppliers separately for research and development tasks regarding the buyer or foreign market-specific adaptation of intermediate products.

Equity joint-ventures as a governance structure protect efficiently against cheating attempts of outsourcing principals, especially if the asset specificity is high like in the case of location shifts. Apart from contractual arrangements this protection results above all from the joint ownership. On the one hand, the sharing of cooperation rents is determined by the share of capital contribution. On the other hand, the incentive for opportunistic behavior is reduced by the danger of devaluation of each partner's equity stake.

If relatively hierarchic governance structures are established to safeguard specific assets caused by internationalization, it can be efficient to choose a comparatively high degree of complementarity for further activities in the respective international supply relation. The reason is that relatively hierarchic governance structures like joint-ventures are not limited to coordinating cooperations in single

18 Similar national supply relations are used as a reference.

business functions - they rather provide a framework for comprehensive cooperations.

Second, compared to national supply relations suppliers can align their activities in a **less complementary way** with activities of the foreign outsourcing principals. They achieve this by dispensing with just-in-time supply, joint research and development projects, buyer specific developments and investments into special-purpose machines. Thus, suppliers do not enter opportunistically exploitable positions which could not be safeguarded efficiently against the background of costs and risks connected with the enforcement of contractual arrangements abroad. Activities abroad rather have a character of a subordinate supplementary business.

Because of the low complementarity of activities, suppliers and outsourcing principals can be linked without direct and regular contacts in this case. This opens up the opportunity for suppliers to organize sales and distribution abroad via independent **sales agents** located in the home or target country. Capacity-caused distribution cost advantages can be gained this way, particularly if sales volumes are low. In addition, suppliers can take advantage of the country and market-specific knowledge of their sales agents.

4.2 Supplier-Oriented Forms of Internationalization

Firm specific advantages can be utilized alternatively by merely outsourcing principal-oriented forms of internationalization, on the one hand, and by horizontal or vertical international cooperations with foreign suppliers, on the other hand. Foreign outsourcing principals can be integrated in this kind of cooperation. In **horizontal cooperations** the same functions in each company are affected by the cooperation. The range of utilizing horizontal cooperations with suppliers[19] reaches from the unique disclosure of written codified know-how, the implementation of this know-how at the partner's organization, the take-over of related consecutive

19 Apart from this, horizontal internationalization forms like co-production, subcontracting and purchasing cooperations exist. They contribute to the reduction of production and factor costs. Conceptually, they are not an alternative to utilizing internationalization forms. Moreover, they can be applied indepently. Therefore, they are not investigated further in this paper.

management and maintenance tasks up to the joint performance of certain activities.

In **vertical cooperations** different functions of each partner are affected by the cooperation. As a rule, foreign suppliers take on value-added activities which are close to the market and therefore have high localization advantages like sales, logistics and parts of marketing. The internationalized firm supplies the foreign firm with more or less complete intermediate products. Moreover, the foreign supplier can take on assembling as well as manufacturing tasks and the development of partial components of the supply product. The range of governance structures for vertical cooperations reaches from informal arrangements, long-term or complex contracts to equity joint-ventures. Joint-ventures are especially efficient if manufacturing is carried out abroad by the internationalized supplier.[20]

International cooperations with other suppliers in target countries have advantages and disadvantages compared with merely outsourcing principal-oriented forms of internationalization. The following advantages have to be mentioned: First, investments caused by internationalization show a lower asset specificity if they are carried out by a foreign and not by the internationalizing supplier. This holds in particular for investments in facilities abroad that, e.g., occur with the set-up of just-in-time delivery systems. Second, foreign suppliers are better integrated into their national industry networks and have a better knowledge of foreign markets and basic conditions as well. Thus, they are not so uncertain about the kind and extent of potential opportunistic behavior of foreign outsourcing principals, whereby transaction costs are reduced. Third, firm specific advantages of foreign partners can be used by the cooperation. Fourth, the risks of internationalization are reduced due to lower claims on corporate resources of the internationalized supplier.

However, opposite to these advantages there are drawbacks that cause transaction costs. In horizontal cooperations these are basically: First, considerable information asymmetries exist between institutions offering and demanding intangible

20 Like the German firm Eberspächer which cooperates with Calsonic of Tennessee in order to supply the Mercedes subsidiary in Tuscaloona/USA (see Hoffmann/Linden 1995, p. 44).

assets with regard to the value and usability of these firm specific advantages to be transferred. In addition, the problem arises to assure the value of a certain know-how in a credible way without revealing the know-how itself. This problem is known as information paradox.[21] Second, usage of know-how which is not contractually stipulated, especially a further diffusion and a non-authorized utilization has to be excluded. This is particularly important if foreign partners are current or future competitors and the exchange concerns relatively recent know-how. Third, continuing transaction costs result from the service offered to and the control of the foreign supplier.

Fourth, if foreign outsourcing principals are integrated into the cooperation, e.g. in order to ensure the permanent further development of intermediate products and technologies, the need for inter-company coordination rises. In addition, the internationalized supplier can bear a share of responsibility to the OEM for the foreign supplier's output, caused by contracts or image considerations. The more distinct these disadvantages, the higher are the resulting transaction costs and the more advantageous is the recourse on hierarchic coordination elements within the cooperation.

In contrast to horizontal cooperations, know-how externalization is consciously avoided in vertical cooperations with foreign suppliers due to the problems mentioned above. Correspondingly, the emerging transaction costs are lower. On the other hand, higher transaction costs arise with the inevitably more intensive coordination within the operational business.

Finally, it is to say that no clear distinction can be made between horizontal and vertical cooperations, on the one hand, and cooperations with the purpose to generate and utilize firm specific advantages, on the other hand, if the intensity of cooperation is high. This is especially true for cooperations of several suppliers that integrate their supply products with the purpose of offering outsourcing principals a completely assembled complex system **(system cooperations)**.

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21 See Teece 1986, p. 29.

5 Stability of Cooperative Internationalization Forms

5.1 Theoretical Foundation

Basic condition for starting a cooperation is that a cooperation rent can be earned. However, from the individual point of view a cooperation is only successful, if the individual goals of cooperation are reached, either on the expense of the objectives of the partner or by taking the partners interests into consideration. Prerequisite for success is the stability of the internationalization form, at least for a certain period of time. The stability again is determined by the partners' cooperation behavior over time.

The analysis of this behavior is based on the game theoretical standard situation of the **iterative prisoners' dilemma**. It is characterized by a pay-off matrix, which can be seen as a simplified model of real cooperations:[22]

Cooperation partners achieve the highest overall profit, if all partners cooperate. They gain the lowest overall profit if none cooperates. Finally, each partner can maximize his individual margins if he defects and thus exploits cooperation rents opportunistically while the other partners behave cooperatively.[23] The concrete pay-off matrix can be designed by the cooperation partners through the choice of internationalization forms. E.g., opportunistic exploitable cooperation rents fall with more hierarchic governance structures.

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22 See Axelrod 1984; Weder 1989, p. 100-108.

23 Cooperative behaviour means in practice to produce and recompense mutual contributions on a promissed, adequate or expected level.

		Firm 1	
		Cooperation	Defection
Firm 2	Cooperation	K_1 K_2	D_1 B_2
	Defection	B_1 D_2	G_1 G_2

K_n = Pay-off for cooperation on both sides

D_n = Pay-off for the defecting firm

B_n = Pay-off for the cheated firm

G_n = Pay-off for defection on both sides

$D_n > K_n > G_n > B_n$

Diagram 2: Structure of the Prisoners' Dilemma

Against the background of the structure of the pay-off matrix, cooperation partners have considerable short-term incentives to cheat. On the other hand, they can maximize their individual profits on a long-term basis only by cooperation. The latter requires, that partners stabilize cooperations by dispensing (largely) with defection.

Conditions of cooperation stability can be derived from the prisoners' dilemma. With respect to the **structure of the pay-off matrix** it can be stressed that the incentive to defect is smaller (1) the higher the individual profit is if all partners cooperate compared with the individual profit in the case of mutual cheating, and

(2) the smaller the difference is between the individual profits in case of mutual cooperation and one-sided defection.

However, central to the stability analysis are the **interactions** between the cooperating partners. (3) Strategies, which educate partners to cooperation by means of rewarding cooperative behavior and punishing defection rigorously, have proven to stabilize cooperations. Particularly promising is the 'TIT FOR TAT' strategy, "which cooperates on the first move and then does whatever the other player did on the previous move."[24]

Such behavioral strategies are better realizable, (4) the smaller the number of partners is, (5) when the cooperation exists for an indefinite period of time, (6) when the frequency of transactions is high (this can be reached by splitting up input contributions), (7) when opportunistically exploitable rents exist reciprocally, or (8) when a superior partner exercises its market power only in exactly measured dosages, (9) when input contributions can be specified exactly and regularly, so that the danger of corresponding misinterpretations is minimized, and (10) when the partners have an image of punishing defection rigorously.

Finally, cooperations are more stable, (11) the longer the partners know each other. On the one hand, they can understand, judge and anticipate the partners' behavior better. On the other hand, trust builds up step by step within a cooperation. Trust reduces uncertainty about the partners' behavior which finds expression in lower transaction costs. The value of trust as an asset can be evaluated via an opportunity cost calculation. This asset can be destroyed abruptly through opportunistic behavior but only be rebuilt slowly. This explains why the inclination to behave opportunistically decreases with increasing trust.[25] This again stabilizes cooperations.

So far, it was assumed that determinants of the internationalization form choice remain constant over time. However, in reality it might come to changes so that alternative internationalization forms become advantageous and existing ones become destabilized. These changes occur first in the field of basic conditions and

24 Axelrod 1984, p. 20.
25 See Albach 1980, p. 3-5; Dasgupta 1988, p. 50-56 and p. 62.

in the terms of competition. Second, they result from the dynamics inherent in the cooperation, and third they are conditioned by the evolution the partners go through independent of the respective cooperation.[26]

5.2 Conditions of Stability in Practice

Conditions of stability of various internationalization forms can be derived on the basis of these theoretical considerations. However, it is to be pointed out that, only the reference to special cases finally allows substantial statements on this matter.[27]

Generally, transnational cooperations are exposed to some influences, which affect their stability in comparison with national cooperations. First, the danger of misunderstanding is bigger due to language barriers, cultural and physical distances. E.g., a certain behavior might be interpreted by one partner as cooperation and by the other partner as defection. The corresponding reactions are incomprehensible for the partners and might lead to further destabilizing misunderstandings.

Second, international cooperations involve comparatively high transaction costs so that achievable cooperation rents are lower than in similar national cooperations. Thus, the interest to maintain international cooperations is relatively low. Third, cooperation partners possibly assume that their opportunistic behavior abroad or towards foreign suppliers does not become common knowledge and thus does not affect their cooperation image. Fourth, alternative internationalization forms might become advantageous due to changes of political basic conditions, exchange rates, trade and investment barriers or incentives respectively.

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26 See Weder 1989, p. 128-133.
27 See Kogut 1988, p. 46.

Outsourcing Principal-Oriented Forms of Internationalization

Outsourcing principal oriented internationalization forms show several features towards cooperations with suppliers which favor a smooth interaction and thereby stabilize cooperations. First, outsourcing principal-oriented internationalization forms are bilateral, so that the number of cooperation partners is as low as possible. Second, considerable contributions of both, suppliers (intermediate product) and outsourcing principals (money) can be exactly specified. This simplifies a complementary cooperation in fields where mutual contributions cannot be specified and controlled as easily, e.g. in research and development.

Third, suppliers and outsourcing principals are not in horizontal competition. In principle, this makes a technology transfer easier, though there are in special cases quite numbers of incentives to acquire the partner's firm-specific know-how in the course of cooperation in order to set up or develop domestic suppliers or suppliers as group members.

Fourth, partner specific assets are necessary on the suppliers' as well as on the buyers' side. Both partners would loose these specific assets with the termination of the cooperation. This threat stabilizes the cooperation. However, the stabilizing effect of reciprocal specific investments has to be balanced. On the one hand, specific assets are partly product or model-related. Its value decreases continuously to zero until the end of the product/model life-cycle. This explains that supply relations are in a relative unstable stage before a product/model change-over. On the other hand, it has to be taken into consideration that suppliers carry out special specific investments in the course of internationalization. This leads to an asymmetric distribution of specific assets through which the opportunistic scope of foreign outsourcing principals increases.

Finally, influences of current developments in the competitive structure on the stability of existing outsourcing principal-oriented internationalization forms are to be investigated: Especially supply relations which show a low degree of activity complementarity become destabilized by the general trend of outsourcing and linking-up buyers and suppliers. Suppliers which are not able and willing to increase the activity complementarity run the risk of being substituted. Regarding this, outsourcing principals extend their degrees of freedom to select competitive suppliers through their global sourcing activities. In other words, existing supply relations offer competitive suppliers a basis to intensify cooperations.

Furthermore, it can be expected, that outsourcing principals exercise their purchasing power increasingly against the background of a high competitive pressure on final product markets. Whether this accelerates the adaptation of internationalization forms to changing terms of competition or whether it leads to a destabilization up to a cancellation of existing cooperations, can only be answered for specific cases.

Supplier-Oriented Internationalization Forms

Certain capabilities of foreign suppliers can be used synergetically by international cooperations between suppliers in order to utilize own firm specific advantages. The respective functions could be carried out in the hierarchy of the partners as well - and they are carried out to serve other markets or to produce other products respectively. For that reason, there is a more or less intensive latent competition among the cooperating suppliers.

The cooperation is advantageous for the partners as long as the externally used capabilities are not at their disposal. However, partners learn the firm specific capabilities of their opponent in the course of cooperation, so that the cooperation becomes destabilized over time.

It can be expected, that the danger of destabilization is larger for horizontal know-how and licensing contracts than for vertical cooperations between suppliers. First, the technology transfer is an explicit goal of this kind of cooperation. Second, the frequency of transactions is naturally relatively low. Third, if the technology transfer is one-sided, there are hardly opportunities out of court for the know-how owner to sanction opportunistic behavior after the know-how is disclosed. However, these destabilizing conditions are so obvious that a technology transfer is carried out probably only if the likelihood and consequences of an opportunistic partner behavior are relatively low, e.g. because it concerns peripheral or obsolete know-how. Therefore, realized horizontal cooperations among suppliers could be relative stable, again. If the cooperation is based on a mutual technology transfer (cross licensing), a higher stability of the internationalization form can be expected, in principle.

Further destabilizing friction among cooperating suppliers can arise if foreign outsourcing principals are integrated in the cooperation. It might come to difficulties, if the take-over of responsibility or additional tasks sourced out by the buyer is in question. Moreover, there is a latent danger that the suppliers try to push out each other of the trilateral cooperation. The suspicion alone can create a behavior which the partner interprets as opportunistic and therefore reduces his own cooperation willingness in turn.

6 Conclusion

Small and medium-sized suppliers are facing considerable challenges. Outsourcing tendencies as well as the buyers' internationalization of production and procurement offer growth potentials, on the one hand. On the other hand, the competitive pressure on small and medium-sized suppliers increases with the internationalization of the supply industry.

In order to withstand international competition, small and medium-sized suppliers have to improve their technological and logistical efficiency and to reduce their costs. Furthermore, they must be able and willing to intensify cooperations with outsourcing principals in all functions and to align their activities complementary to the outsourcing principals.

The latter is related to special risks and costs in the international context. Above all, they are results of the limited knowledge of foreign basic conditions and the fact that foreign business is connected with investments in specific assets. Suppliers can overcome or at least control these problems by the choice of situationally appropriate cooperative internationalization forms - outsourcing principal or supplier-oriented.

However, experience shows that many international cooperations are dissolved without the suppliers reaching their goals of cooperation. From the analysis of existing and terminated cooperations, conditions of stability can be derived. The stability depends on the structure of the pay-off matrix, on the one hand, and on the interactions of the cooperation partners over time, on the other hand. The structure of the pay-off matrix is determined directly and indirectly by changes of basic conditions and terms of competition. The knowledge of these stability conditions can improve the quality of cooperation management in all stages of cooperation.

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