

The Potential for SMEs to enter into cooperative distribution ventures through establishing Distribution Networks

Abstract:

In consumer goods distribution, cooperative strategies are increasingly being used with respect to logistics and marketing within the context of Efficient Consumer Response between manufacturers and retailing organisations. In practice, barriers to implementation arise, which impact mainly on small and medium-sized companies, so that an industry-wide implementation of such cooperative strategies is not possible. A detailed empirical study which spans the entire value chain, reveals **implementation problems and reasons for abandoning attempts at ECR partnerships**. These factors exert a different impact on small and medium-sized companies as compared to the major food companies. In the context of an explorative factor analysis, these deficits can be allocated to the following **implementation-barrier factors**:

1. **Network deficit factor:** insufficient cooperation, control and authority at all stages of the process throughout the value-chain, as well as a lack of standardisation and practical viability of ECR processes and strategy components.
2. **Partner deficit factor:** ECR implementation factors caused by insufficient skills (competencies), know-how, top-management commitment, process organisation and power plays by partners.
3. **ECR interaction deficit factor:** conceptual deficits within ECR partnerships such as failure to assume a category captain function or to communicate brand or product (assortment) leadership strategies to a partner enterprise and a lack of integration of all enterprises into the value chain affected by ECR processes.
4. **Own enterprise deficit factor:** a lack of skills, know-how, top-management commitment and exploitation of turnover potential in ECR implementation.

As a means of resolving such coordination and integration deficits between several enterprises within a value chain, **enterprise networks are presented as a form of interorganisational coordination**. A coordinated orientation of legally and largely economically autonomous enterprises in network-like value-chain partnerships, which focus on a common goal and are led by one specific enterprise, can provide the appropriate solution. For this purpose, the general contribution to success in the sense of the effectiveness and efficiency of systems-head led distribution networks for SME's are considered in the context of an interorganisational transactions cost analysis.²

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1 Participating or not participating in cooperative distribution strategies such as Efficient Consumer Response – a question of size?

Since 1994, it has been appropriate for the traditional distribution channels for consumer goods in many instances, to be reconstructed radically under the name of ‘**Efficient Consumer Response (ECR)**’ to make it possible for businesses to overcome in a **cooperative venture**, the existing confrontation between manufacturer and trade (see Ahlert/Borchert 2000, pp. 5; and Friedrich/ Hinterhuber 1999, pp. 2). Instead of negotiating about prices, conditions and isolated sales promotion, the expectations of consumers could be satisfied faster, more effectively and less expensively by adjusting integrative marketing and logistical processes. In **ECR cooperation**, the legally and economically independent manufacturers and trading companies coordinate their efficient replenishment, assortment, promotion and product introduction. This vertical partnership is intended to prevent inefficiency resulting from uncoordinated or even of conflicting tasks by reconstructing processes, organizational structures and job sharing within the distribution channel.

Even though the integrated concept of ECR partnerships in marketing and logistics in Germany was first initiated in food distribution, the effectiveness threshold of this sector does not yet seem reached: In the sixth year of ECR implementation many food companies have participated in cooperative ventures, but their success has been only moderate according to empirical studies. The survey questioned food companies, producers and retailers (referred to the generic term “grocers” in the following sections) which offer food and non-food items as well as marketing (merchandising), logistics and IT service companies. It reveals that **small grocers with a turnover of less than 200 million Euro a year do not participate in ECR partnerships as frequently as large grocers in Germany and that they also evaluate the ECR partnerships very critically**: „Particularly the small and medium-size firms do not feel represented by the key players [...]. ECR means a handful of dollars only for a handful of large firms. The others get nothing out of it.“ (Hallier 1999, p. 58).

Are large manufacturers and distributors of brands more heavily represented with respect to successful ECR participation?

A successful and efficient ECR implementation calls for coordination of all participating businesses in the value chain, from the subcontractor and extending to the store shelf. On the one hand the common bilateral transformation of ECR cooperation by *large* brand manufacturers in cooperation with a powerful distributor, neglects the integration of small service and/or complementary manufacturers/ merchants into category management. On the other hand *small and medium sized* manufacturers and merchants (SMEs) in bilateral ECR partnerships do not reach the critical size that allows them to invest in equipment which would make for a viable ECR transformation.

2 SMEs as outsiders to cooperative distribution strategies such as Efficient Consumer Response?

2.1 The status quo of ECR implementation in the German food distribution

Some insight into the status quo of food distribution provides a sample of the 108 responding grocers mentioned in the evaluation. The sample includes 70 producing companies with a turnover of 54,2 billion Euro in 1999, 27 retailers (58,6 billion Euro turnover) and 11 marketing, logistics and IT service companies (13,8 billion Euro turnover). Thus 30% of Germany’s turnover by manufacturers and merchants is included in the evaluation. 70,7 % of

the responding companies are ECR partners (ECR-participation). The employees of these companies give their views to the implementation problems, while the other companies give reasons for not realizing ECR partnerships. The participating companies can be divided into two specific groups of about the same size: small and medium sized companies with up to 200 million Euro turnover a year and large companies with more than 200 million Euro turnover a year. Such a division only considers one characteristic of size, the yearly turnover, but it facilitates the observation of size factors influencing the decision for or against an ECR participation in all links of the grocery value chain.

Against the background of concentration tendency in German food distribution, it is not surprising that more of the merchants who completed the evaluation form are large companies (73,1% of all answering merchants) while for the manufacturers 40,3 % are SMEs and 59,7 % large. Figure 1 shows the ECR participation of grocers according to company size: Compared to the total distribution of consumer goods the participation rates of grocers in ECR cooperations is 8-10% higher than the average (Borchert 2000, p. 56). This also shows the initiative within the food industry in terms of ECR cooperations that have been established by manufacturers and merchants since 1994, and that have been extended to other fields of consumer goods distribution. **While only about half of the SME grocers join ECR cooperations, 84,5 % of the large companies do so.**

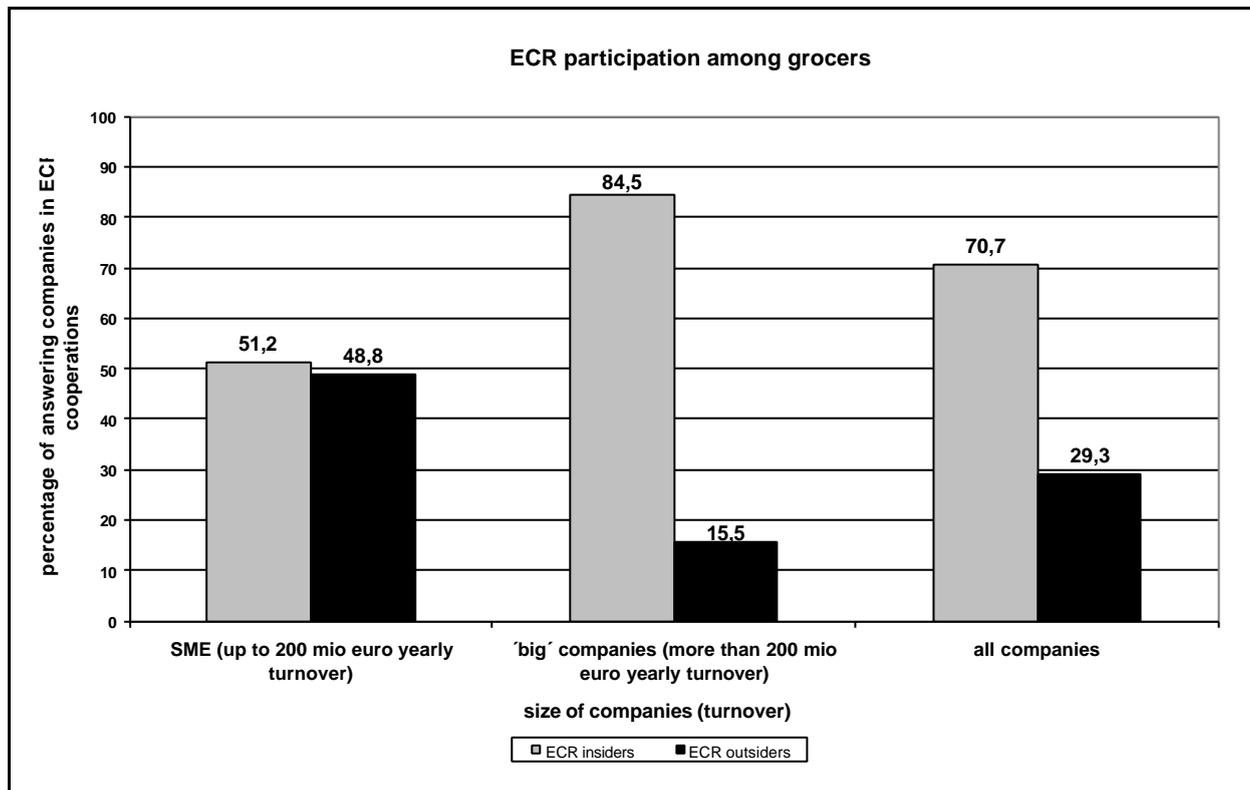


Figure 1: Participations of grocers in a test of ECR cooperations by company size (n=99)

Three out of four of the responding ECR experts state that they belong to the five leading companies in terms of competitive position amongst ECR grocer participants. 53,3 % of the *non-participating* companies do *not include in the 10 leading companies* within the market. These data show that **ECR cooperations are achieved especially by large and leading companies within the German food distribution market.**

These results are supported by the ECR project experience of the responding companies: **While SMEs have participated in an average of 7,6 ECR projects, large companies have**

an average experience of 19 projects. All companies together have an average experience of 14,1 projects.

Those companies that were in an ECR cooperation at the time of the evaluation in spring 2000, implemented the strategy components with varying degrees of intensity. The operative ECR-strategy components such as product replenishment/ administration, assortment and space management were not carried out by at least every sixth ECR participant. The more strategic marketing instruments like product development, product introduction and promotions were not executed by every second or fourth company in an ECR partnership. The SMEs reveal a level of non-completion of all parts of ECR strategies (except for the similarly non-implemented supply-side strategies) that are on average 4 percent points higher than those of the large grocers. A direct comparison of the extend of transformation reveals positive results for retailers. These companies omit on average fewer strategy components in ECR partnerships, than manufacturers or service companies. This corresponds with the concentration function of product and information flow of ECR strategies and the higher contact frequency with more leading ECR suppliers.

The *success rating of carried out strategy components by ECR experts* with respect to goal achievement of proves to be quite varied in all value added stages of food distribution. The following Figure 2 shows that success rating of operative strategy components is mostly positive especially of the supply side (arithmetic mean of 2,4 to 2,7 on a scale of 1= very successful and 5= failure).

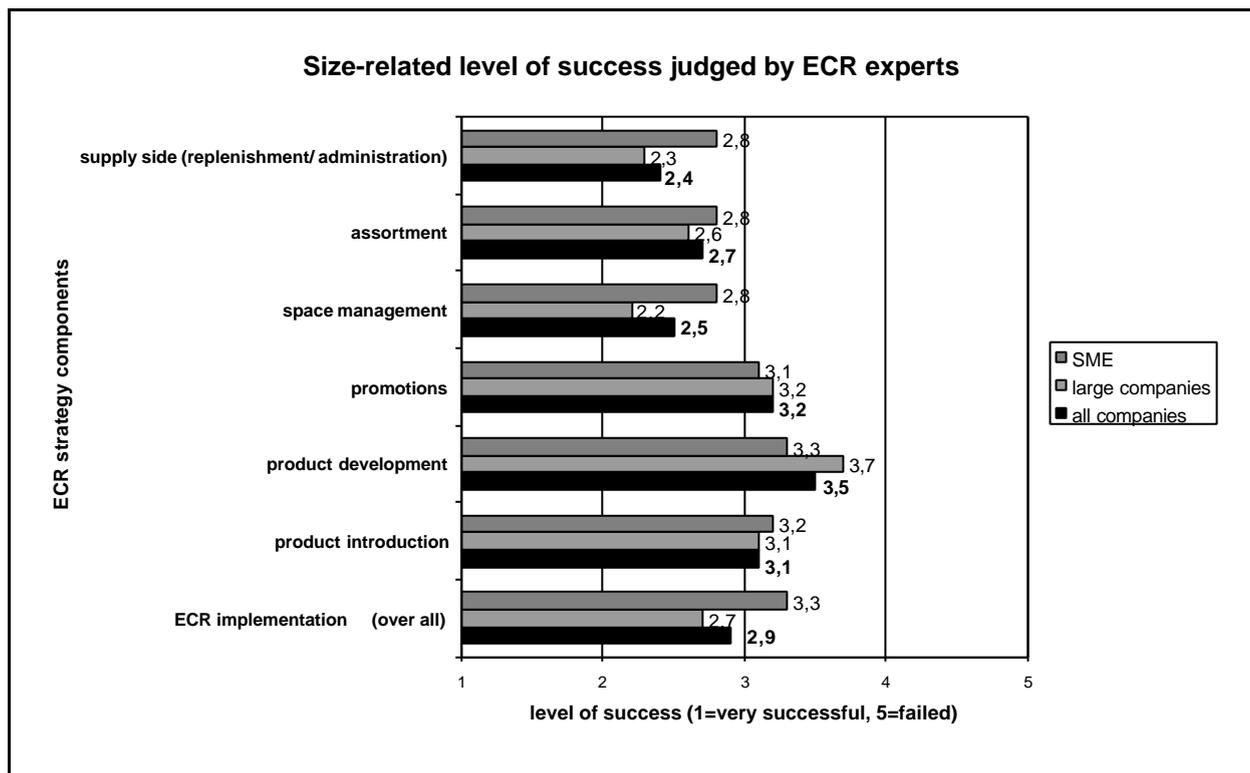


Figure 2: Success level according to ECR experts with respect to company size (n=42-85)

The more strategic-marketing-oriented instruments of sales promotion, product introduction and especially of product development were only rated as average with tendency towards failure (arithmetic mean of 3,1 to 3,5). Viewing the success rating in terms of size, one can see the evaluation of the ECR strategies by small and medium sized grocers. **The estimates of almost all partial strategy components prove to be more negative when judged by a**

SME agent than by an agent of a large company. Altogether the ECR transformation in SMEs, with a mean of 3,3 and the tendency towards failure are classified more negatively than in large companies (2,7) which reveals a tendency to succeed.

2.2 Size-based reasons for non-implementation and for implementation problems in ECR cooperations in the German food industry

With respect to non-participation in ECR partnerships by grocers (ECR outsiders), even though one could expect potential for greater efficiency in distribution strategies and channels because of industry concentration, we first of all consider the reasons for non-implementation and the transformation problems of ECR cooperations. For this purpose, the responding companies which do not participate in ECR partnerships (28,3 % of all grocers) were asked to give reasons for non-implementation. Secondly the companies within ECR cooperation (ECR insiders) were asked to specify transformation problems. This makes it possible to examine transformation problems and the reasons for size-based non-implementation.

With this background, we screened deficit items from the instrumental application of ECR partnerships, as well as the interorganizational coordination of the company units. The following informations show the values for deficiency items, based on the arithmetic mean on a scale of 1 = *very strong* to 5 = *very weak*. Therefore, a low mean indicates a high level of significance of the deficit item for non-implementation or for implementation problems. This provides a ranking of various problems determined by the arithmetic mean and by the percentage of the rated aspects from *high to very high* significance (agreement on the first and second marking on the scale):

Over all ECR cooperative ventures one could stress five most important reasons for non-implementation and for transformation problems. ECR partnerships are often **not implemented**, because of the coordination problems between the participating companies, experienced by ECR experts. This is revealed by the insufficient standardization of category management tools (mean 2,56/ 66,7% agreement for this item), inadequate institutionalization of interfaces (2,59/ 55,2%) and of communication infrastructure (2,64/ 53,4%) among the respondents. The importance of a lack of informal contacts among employees of cooperating companies (2,29/ 63,3%) may explain the existence of supposed coordination problems among employees of non-participating companies.

On the one hand the **transformation problems of companies in ECR cooperations** relate to organizational coordination, lack of institutionalised interfaces, a lack of process-oriented category management organization and lacking standardized category management methods and tools (over all 2,81-2,94/ 40,3-48,5%). On the other hand one has to consider transaction problems between ECR cooperations such as a lack of reciprocity (exploited, 2,88/ 46,1%) and power imbalances between the partner (2,93/ 45,3%). Almost every second grocer considers these problems to be significant in terms of implementing an ECR cooperation (see for detailed information Borchert 2001).

Table 1 shows with regard to differentiating by business size, that the transformation problems of SMEs overlap with those of large companies and therefore with the transformation problems of all grocers. **The fact that such problems show a level of significance of 0,6 scale units of the mean higher for SMEs than for large companies, is, however, important.**

However, various **reasons for non-implementation** were accorded a high ranking by representatives of SMEs and large companies. Table 1 explains that reasons for non-

implementation given by SMEs are communication deficiencies within the corporate infrastructure. Also organizational and instrumental coordination deficiencies rank high. The main reason for non-implementation of large companies is a lack of informal contact. Other important reasons for non-implementation are the inclusion of all companies of the value chain into ECR cooperations as well as the exploitation power imbalance by the cooperation partner.

<p style="text-align: center;">The five most important reasons for non-implementation of <u>small and medium sized enterprises</u> (arithmetic mean, percentage of stated factors accorded the highest significance/ agreement)</p>	<p style="text-align: center;">The five most important reasons for non-implementation of <u>large companies</u> (arithmetic mean, percentage of stated factors accorded the highest significance/ agreement)</p>
<ul style="list-style-type: none"> • Insufficient standardization and communication infrastructure (2,10/ 59,9 %) 	<ul style="list-style-type: none"> • Insufficient informal contacts among employees of companies in ECR cooperations (2,0/ 88,9 %)
<ul style="list-style-type: none"> • Insufficient informal contact among the employees of companies in ECR cooperations (2,42/ 52,7 %) 	<ul style="list-style-type: none"> • Non-integration of all companies participating in the value chain into ECR cooperations (2,25/ 62,5 %)
<ul style="list-style-type: none"> • Inadequate process-oriented category management organization (2,47/ 58,8 %) 	<ul style="list-style-type: none"> • Disregard of the principle of confidence in ECR cooperations (2,38/ 62,5 %)
<ul style="list-style-type: none"> • Lack of standardization of methods/ tools of category management (2,53/ 58,8 %) 	<ul style="list-style-type: none"> • Lack of organizational institutionalization of the interfaces (2,50/ 62,5 %)
<ul style="list-style-type: none"> • Lack of organizational institutionalization of the interfaces (2,63/ 52,6 %) 	<ul style="list-style-type: none"> • Exploitation of power imbalances by the cooperation partner (2,56/ 55,5 %).

Table 1: The five most important reasons non-implementation of ECR cooperations according to company size (n=83-104)

All in all the size-dependent coordination problems and transaction-related problems among the companies are conspicuous reasons for non-implementation of ECR cooperation ventures.

2.3 Coalescence of implementation barriers into specific implementation factors within ECR cooperation

The reasons for abandoning or encountering difficulty which were discussed descriptively, can be coalesced or compressed into four implementation (problem) factors with the aid of an explorative factor analysis. The application of factors analysis enables the implementation and other problems to be classified as variables in terms of mutual correlation coefficients (Bortz 1999: p. 496). **Principle component analysis** provides the appropriate extraction process for this explorative factor analysis (Backhaus et al. 1996: p. 190). It attempts the broadest possible reproduction of data structure through the least possible number of factors and thus does *not* provide a causal interpretation of the data. Through using the **factor** concept as the magnitude behind the variables (deficit aspects) which represent the (hypothetical) linkage between various initial variables, the principle component analysis considers the following research question: How can the variables loaded on one factor, be subsumed into a generic, overall concept (component)? This refers to the 25 investigated implementation and abandonment problems within ECR cooperations which must be coalesced into internally homogenous groups of deficit aspects, which can be categorised with as definitive as possible

an overall concept³. Table 2 shows the four factors and their loadings for the implementation and abandonment problems, characterized by the investigating variables:

Deficit aspects from the **first derived factor**:

- Lack of participation of additional suppliers/buyers ("critical mass problem") (factor loading 0,776),
- Insufficient standardization of methods/tools for Category Management (factor loading 0,756),
- Unstable cooperation through lack of binding written agreement (factor loading 0,745),
- Lack of control of value-chain phases or levels (by a central coordinator) (factor loading 0,694),
- Inadequate "implementability" of category management concepts (factor loading 0,561) as well as:
- lack of control and authority over partner enterprise/s (factor loading 0,463).

This **first factor** links deficit items which, in addition to the descriptive results from the previous section, can be regarded generally as **coordinative and organisational deficits** of ECR cooperative agreements.

The **second factor** groups the following items with their respective factor loadings:

- insufficient competence (skills) and know-how of partner enterprise/s (factor loading 0,825),
- lack of top management commitment in partner enterprise (factor loading 0,727),
- misuse of power (power plays) by cooperation partners (factor loading 0,590)
- lack of process-oriented category management (factor loading 0,466).

This second factor groups above all, those deficit items which are associated with the behaviour of a particular partner enterprise within an ECR cooperation. In the following section, it will be referred to as the **partner deficit factor**.

³ The following results based on Table 2 are derived from a factor analysis applied in SPSS with the following parameters to all food retailers:

- The selection of those variables which fulfil the Kaiser-Meyer-Olkin criterion as an evaluative magnitude with an MSA = 0.5 according to an anti-image correlation matrix,
- extraction method: principal component analysis,
- rotation method: rectangular varimax rotation with Kaiser normalisation, protected by the independence premises of the factors,
- determination of the number of factors by Screeplot (4 factors) before the bend in the curve (Bortz, J. (1999: p. 528).
- Evaluation of the validity of the factor analysis with the aid of the variance (62.6%) of the Kaiser-Meyer-Olkin-Criterion (KMO) over all factors (0.662) as well as the factor stability (FS)

$$FS = 1 - \left(1,10 \cdot \frac{1}{\sqrt{n}} - 0,12 \cdot x + 0,066 \right) = 0,84, \text{ where } n = \text{the number of integrated data items and } x =$$

the minimal loading value which is considered in the factor interpretation. According to Backhaus (1996: p. 205) as well as Bortz (1999: p. 507), factor analyses with a KMO = 0.5 and a factor stability of = 0.8 are valid. With n = 54 according to the variable selection and accompanying data items the following factor analysis reveals a middle value (Dziuban and Shirkey 1974: p. 359, Stewart 1981: p. 56-59).

Deficit Item (Implementation problem or reason for abandoning from ECR cooperation):	Component (Factor)			
	1	2	3	4
- Lack of participation of additional suppliers/buyers (critical mass)	,776			
- Insufficient standardization of methods/tools for Category Management	,756			
- Unstable cooperation because of or lack of binding written agreement	,745			
- Lack of control of value-chain phases or levels (by a central coordinator/focal firm)	,694			
- Inadequate "implementability" of category management concepts	,561			
- lack of control and authority over partner enterprise/s	,463	,459		
- insufficient competence (skills) and know-how of partner enterprise/s		,825		
- lack of top management commitment in partner enterprise		,727		
- misuse of power (power plays) by cooperation partners		,590		
- lack of a process oriented category management-organization		,466		
- insufficient integration of retail brand leadership within category management			,763	
- no communication of brand/product-assortment strategy of partner enterprise/s			,636	
- no category-captain function though by particular enterprise			,598	
- failure to integrate all enterprises that are part of the value chain	,506		,553	
- insufficient innovation potential of partner		,513	,533	
- lack of informal contact between employees of the cooperating enterprises			,486	
- lack of competence and know-how on the part of employees within one's own enterprise				,855
- lack of top-management commitment of own enterprise				,805
- insufficient turnover or potential turnover of own enterprise				,695

Table 2: Rotated Component Matrix of Factor Analysis with Respect to the Deficit Items⁴

The **third factor** incorporates the following deficit aspects with their factor loadings:

- insufficient integration of retail brand leadership within category management (factor loading 0,763),
- no communication of brand/product-assortment strategy of partner enterprise/s (factor loading 0,636),
- no category-captain function by one particular enterprise (factor loading 0,598),
- failure to integrate all enterprises that are part of the value chain (factor loading 0,553),
- insufficient innovation potential of partner, for example, with product or operational concepts (factor loading 0,533),

⁴ Extraction method: principle component analysis; rotation method: varimax with Kaiser normalisation; the rotation was converged in 7 iterations (Bühl/ Zöfel 2000: p. 414; Janssen/ Laatz 1999: p. 443).

- lack of informal contact between employees of the cooperating enterprises (factor loading 0,486).

These items indicate interaction deficits in the implementation of ECR cooperation, particularly in the category management area. This factor will be referred to as the **ECR interaction deficit factor**.

The **fourth factor** incorporates the following items with their respective factor loadings:

- lack of competence and know-how on the part of employees within one's own enterprise (factor loading 0,855),
- lack of top-management commitment of own enterprise (factor loading 0,805),
- insufficient turnover or potential turnover by own enterprise (factor loading 0,695).

Those items which refer to deficits within one's own enterprise, are loaded onto this factor. Thus, this final factor is referred to as the **own-enterprise deficit factor**.

These four factors which impede ECR cooperation can, in principle, be overcome by establishing distribution networks, particularly in the context of small and medium-sized companies. This will be explained in more detail in the next section.

3 Networks for SME's led by a Systems Head, as an effective and efficient implementation platform for cooperative ventures

3.1 The Characteristics of distribution networks

Conceptually, distribution networks are subset of the generic term “company network”. Company networks are cooperative commitments of more than two legally independent, but partly economically dependent companies. This certain degree of dependency arises from existing commitments and exchange relationships (see Sydow 1992, p. 79, p. 103f.; Semlinger 1993, p. 347): „Networks are ubiquitous. Perhaps the most obvious example is distribution channel systems. [...] The resurging practices of barter, countertrade and other forms of reciprocal dealing will often qualify as networks “ (Thorelli 1986, p. 44).

In order to differentiate between other types of company networks with functionally different objectives (e.g. production supply networks) we will use the term **distribution network** if the companies participating in the distribution of one or more consumer goods coordinate their distribution activities within a cooperative company network. For this purpose more than two legally independent companies with explicit agreements (contract) get together voluntarily to coordinate their activities so that they can earn profits through cooperation in the form of rationalization and develop competitive advantages by a joint distribution of consumer goods. A distribution **network** comprises a specific number of vertically and/ or horizontally linked companies, enabling firms to “jump” at least one level of the distribution or transformation in the value chain of goods/ services. By contrast distribution manufacture’s **systems** especially those contracted to suppliers and clients (contracted distribution systems) allocate goods-specific distributional tasks between a single manufacturer and his distributors (see Ahlert 1996, pp. 34; Ahlert 1981, pp. 45). Within these bilateral systems there is no regular goods and/ or performance-related coordination on a horizontal level between several manufacturers and/ or several distribution companies.

Like distribution systems, distribution networks can be defined from different perspectives: suppliers, manufacturers, retailers, logistically service companies and goods specific. The rationale of all distribution networks is to achieve a cooperative and competition-combatting

coordination at one or more value added levels as necessary to convey the product or service from the manufacturer to the consumer. The more extensive the coordination of distributional, organizational and informational steps and support-systems, the lower the level of autonomy and the higher the level of corporate integration within a distribution network.

With respects to distribution networks in particular, a *focal firm* assumes the function of the **system leader** coordinating the participating companies. This company has ongoing control of certain organizational resources or it manages several companies in terms of one goal: successful ECR implementation. The company with the highest level of competence with respect to managing of the cooperative ventures and the greatest knowledge and experience of the ECR approach will be the system leader. Such a company can provide a coordinated coaching function.

3.2 The General Contribution of a System Head to the Success of Cooperative Distribution Networks

The system leadership of distribution networks influences the effectiveness and efficiency of the entire network: "How the network is governed and how control is shared, influence the effectiveness of the whole and the fate of individual members." (Gomes-Casseres 1994, p. 72). Therefore, system leadership by a focal firm can guarantee both the effectiveness and efficiency of the collective contributions of the distribution network.

Effectiveness

The contribution to network success by system leadership, derives from the goals and objectives (i.e. strategies) pursued in the context of network cooperation (see Jarillo 1988, pp. 36). In this respect, quantitative and frequently also qualitative value added should be achieved by the collective and ex-ante actions of all network actors which have been integrated by the system leader.

The **effectiveness and efficiency of system leadership** rises according to the degree of collective goal attainment for all network actors, as a result of the leadership and coordination of their activities. Consequently, the mutually agreed and executed goals of the distribution network are achieved through the positive intervention of the system leader, who ensures a certain level of success for all participating parties. The essence of the process is for the system leader to ensure a mutually beneficial, reciprocal success, so that each actor derives quantitative or qualitative value added in the foreseeable future (in other words, a "win-win situation").

Firstly, such a participative value added for each actor, lies in the intended *resolution of prevailing coordination and interaction deficits of the linked member enterprises*. Coordination and interaction deficits inevitably arise between fundamentally autonomous enterprises due to their partially diverging sets of objectives, which thus need to be reconciled with overall network objectives, rather than being subordinate to them. Consequently, both the individual and collective goal-setting, performance and distribution process of network actors must be determined, at least in part, by the systems leader. In addition to current activities and sales processes, the goal, performance and success aspects of actors also need to be coordinated in the context of network formation:

- the "meshing" or integration of individual into linked process organisations (i.e. Category Management organisations),
- avoiding conflicting marketing activities,
- minimising multiple resource use through coordination and the implementation of standards which are controlled in terms of time allocation (for example, in the communication structure),
- coordination and regulation by the leader of skills and resource transfers between network actors.

Because of his centrality in the distribution network, the systems leader must maintain viable personal relationships and an integrative flow of information between himself and the individual actors. By so doing, the empirically determined hindrance factors "coordinative and organisational deficits" and "ECR interaction deficits" can be overcome by system-head leadership in a distribution network.

Secondly, through integrating the specific activities and/or resources of all network actors, system leadership *achieves an early and comprehensive necessary critical mass*. The regular linking of such centralised resources may proceed not only virtually, but also through a physical networking and pooling in or through a central unit. Consequently, system leadership achieves more than just a mutual sharing of economic risk at technical and organisational interfaces, which cannot be carried alone by individual actors, at least not over the same (utility) time span (see Picot/ Reichwald 1994 p. 565). The system head formulates standardisation or pooling criteria at interfaces, as well as of goods and services, so as to achieve both individual and mutual network goals appropriately, including the risk and cost-reduction aspect. The system leader must, therefore, provide a fair distribution of the overall risk in terms of the potential of the particular actors in question, and, to the extent to which this is necessary in terms of the network goals, himself assume temporally or even permanently, a greater than proportional degree of risk (see Jarillo 1988, p. 38). The significance of the system leader's risk-integrating or distributing role increases all the more, because the risk associated with economic activity can only be carried and distributed effectively with a reasonably large number of actors. In this sense, *polycentric, non-focally-led* networks are poorly suited to risky critical-mass problems, if, as a result of a low level of integration or leadership impact, investment of performance risk cannot be distributed amongst the various actors.

Thirdly, system leadership can promote collective goal attainment through securing *competitive advantages* for actors in the distribution network. For individual actors, the (led) cooperative distribution venture guarantees the achievement of its competitive objectives, so that entry into the network can be justified as follows: the system leader functions as a communicator and arena for resolving any problems which arise in terms of achieving newly derived potential for success and/or rationalising prevailing fields of activity. The orientation of actors towards common competitive network objectives through the system leader is a major differentiating advantage in the context of the spontaneous order either of the market or the corporate (Beck 1998 p. 76). In this manner, the system leadership of the network generally exerts a positive competitive influence for individual network enterprises through the collective pursuit of strategies and objectives. In comparison to third-party enterprises, "outsiders" which are external to the network, these comprise mainly the following:

- higher market-entry barriers,
- formation of collective forces to counter competition,

- protection of (collective) core competencies and resources against internal and external "free-riders" through organised authority and sealing off of the market ("closed shop") by the system leader.

In general, distribution networks led by a system head, contribute towards the effective resolution of individual partner deficits and own-enterprise deficits of individual network enterprises.

Efficiency

The efficiency of system-head led distribution networks derives partly from the economic value of the instruments that are implemented by the leader in order to coordinate the member enterprises. Therefore, the **coordinative efficiency of system leadership** is expressed by the relationship between the comparative transaction cost advantages that are achieved in comparison to "unled" organisational alternatives and costs that arise as a consequence (for a transaction cost approach, see Williamson 1981 and Wildemann 1997, p. 36).

System leadership is economically productive or viable, when the savings achieved from better coordination and/or control of the actors, exceeds the necessary expenditure on the coordination instruments that are implemented for this purpose. The comparative transaction costs of system leadership derive from the bundling effect of a system head in the network. These are summarised in Figure 4 as:

- *Initiation costs* (e.g. joined information search to acquiring transaction partners),
- *Agreement costs* (e.g. conducting negotiations, experience curve advantages in the agreement process and contract formulation "economies of networking competence" [Beck 1998, p. 306]),
- *Control costs* (e.g. eliminating conflicting activities and ensuring a collective orientation of network actors and that their actions contribute towards network goals),
- *Adaptation and liquidation costs* (e.g. reorganisation of network structures and productive processes, due to environmental or competitive changes).

Similarly, these transaction costs should accrue to each individual actor in *polycentric non-focally* led networks, even without economies of scale or size having been achieved through bundling. The latter raises the coordination costs for each of the n actors under conditions of fully bilateral agreement in the network, where the number of members increases to $0,5 \cdot n \cdot (n-1)$ (see Picot et al 1999, p. 188 and Sydow 1992, p. 249). From Figure 4, it is clear that with a multilateral, central coordination through the focal firm (including the system head), the seven actors require $(n-1)$ "agreement" or coordination linkages, so that the number is reduced to six connections. Previously, the bilateral coordination of the six actors entailed 15 cooperative relationships in order to coordinate the network in terms of its objectives. Thus, the intervention of the system leader substantially reduces the complexity of transaction relationships, so that coordination costs can be reduced in contrast to bilateral forms of coordination: "By securing cooperation contracts with the individual enterprises, constantly adapting to new developments and monitoring adherence to the agreement, the central unit ensures an efficient coordination of the prevailing dependence relationships (Picot et al. 1999, p. 189)".

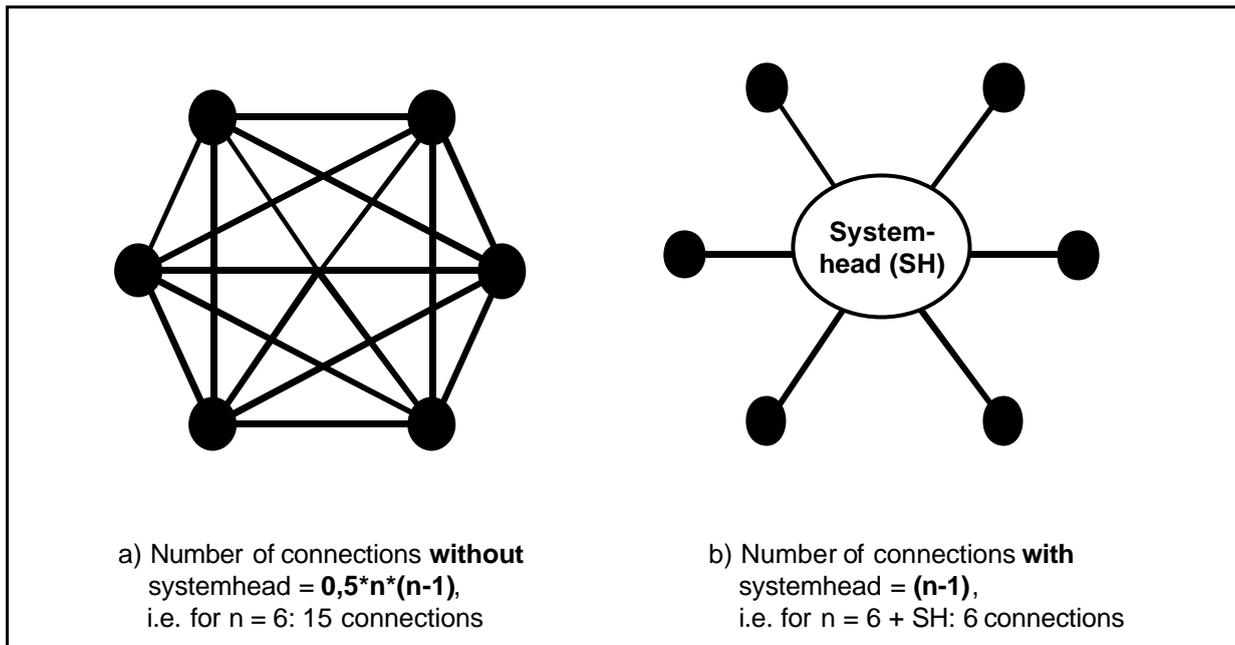


Figure 4: *Bundling effects of System Leadership in Distribution Networks (Source: Dietl 1993, p. 195)*

The coordinative efficiency of system leadership in networks is, however, influenced not only by transactions costs. **Market, process and information efficiency conditions** can also be observed (Frese 1993 p. 1000). System leadership contributes to **market efficiency**, to the extent to which the coordination of the activities of all network actors facilitates production (or service provision) at market prices and with a viable, saleable quality. In this manner, the collectively derived impact of market linkages, contributes positively towards covering coordination costs. Through applying the appropriate coordination instruments (e.g. the duplicated skills and resource use) of the system leader, contribute towards maintaining pressure to develop efficiency with respect to internal processes, through avoiding monopolistic positions on the part of network actors. **Process efficiency** is promoted by system leadership through organisational coordination throughout the value chain, which in turn optimises the various linkages (material, logistics, financial flows) (see von Stengel 1999, p. 91). On the basis of integrated, bundled and comprehensive transactions volumes, investment in network-specific productive processes should be viable for each actor. The mutual optimisation of processes and an appropriate reciprocal coaching of network members, reduces the costs associated with customer and supplier-related activities.

In addition, the intervention of the system leader promotes the **informational efficiency** of network connections. There is no longer a need for bilateral communication flows of stock and flow control information (e.g. point-of-sale data) between the production control systems of the member enterprises, but a centrally-led, needs-oriented transfer of information to the appropriate actors is provided. This fosters an economic optimisation of information flows (von Stengel 1999, p. 245). There is thus no danger of information overload of individual units through modern information technology and its impact on actors with less than state-of-the-arts decision and control systems. The transfer of information control to a central system leader raises informational efficiency, after all members enterprises have informed themselves about the elements of information needed as control bases for central coordination. With a rising need for information (due, for example, to a rising number of production processes or

actors which need to be coordinated), the efficiency advantage of a central system leader rises, which, a result of the resources available to it, provides an appropriately high-performance, but high fixed-cost informational and communicational system.

4 Conclusion

This paper demonstrated empirically prevailing reasons for non-implementation and problems of implementation within ECR partnerships in the German food distribution industry. Closer observation of size-related issues, shows the relative weakness of SMEs compared to major grocers. The size-related problems can be condensed into hindrance factors, as well as into coordination, interaction, partner and own-enterprise deficits. The majority of the problems discussed, can be solved by entry of SME's into distribution networks. In the context of an interorganizational transaction cost approach, coordination by a system leader provides an effective and efficient solution, particularly to coordination and standardisation problems.

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