

# **Creating New Networks for Competitive Advantage: Linking Types of Business Networks to the Dutch Potted-Plants sector**

**EMIEL F.M. WUBBEN  
GEOFFREY HAGELAAR**

**Wageningen University  
Business Administration/Management Studies Group  
Hollandseweg 1, 6706 KN Wageningen  
T: 0317 484160  
Contact: [emiel.wubben@wur.nl](mailto:emiel.wubben@wur.nl)**

**Revised version: April 2008**

## **Summary**

The Dutch floriculture cluster, still leading in Europe, is confronted with increasing international supply competition and changing market demand, resulting in the strategic challenge to transform towards another position in the international flowers and potted plants network. For this reason Within FloriLog three Work Packages (WP) have been detailed, among which WP3 orients at the question: How to organize the preferred business model, considering the wish for network orchestration? This scientific paper of WP3 has the ambition to pick and clarify the most important items in answering the following question: What new organizational forms to implement in Dutch Potted plant-horticulture to enable successful expansion of its network?

To enable successful expansion of interorganizational networks more manager friendly knowledge is required on network types, the suitable governance mechanisms, and the necessary changes in a network. A huge amount of publications on networks has not resulted in unequivocal, applicable knowledge for companies on business networks (Brass, et al, 2004; Contractor, et al., 2006). Small surprise that reducing complexity is considered to be one the most important tasks in chain and network management (Hanf & Dautzenberg, 2006, 81). Actually, it is only of recent date that the focus of business, consultancy and research shifts towards value creation in and delivery by networks (Ritter, et al, 2004, p.175). In order to consolidate the fragmented body of knowledge this paper will use the configurational approach, which brings a systematic grouping of items, using a small number of practical criteria. This approach enhances our understanding of business networks, which suits calls for knowledge on actionable problems (McGraph, cf. Helfat Aom-special eg. 2007), as illustrated by the Dutch Potted-plants case on network adjustment/expansion.

## Introduction<sup>1</sup>

The Dutch floriculture cluster, still leading in Europe, is confronted with increasing international supply competition and changing market demand, resulting in the strategic challenge to transform towards another position in the international flowers and potted plants network. Over 70 percent of all exported potted plants (PP) in Europe are physically distributed from the Netherlands to the countries of Europe (Scheer, et al, 2007). To safeguard this leading position the Dutch have to acknowledge and adjust to these recent developments. For this reason Within FloriLog three Work Packages (WP) have been detailed, among which WP3 orients at the question: How to organize the preferred business model, considering the wish for network orchestration? This scientific paper of WP3 has the ambition to pick and clarify the most important items in answering the following question: What new organizational forms to implement in Dutch PP-horticulture to foster its ambition?

What are the prime trends in the European plant sector? We observe some First, suppliers and buyers rapidly develop internet-based direct trade, example in Denmark and the United Kingdom. The logistic service provider needs to render services for these new trade partners. Second, opposite trends also emerge; for example, in Germany a supply chain encompassing segments from producers till outlets became tightly coupled in the cooperative Landgard. The shortening of the supply chain results in disintermediation of traders and transporters, with the resulting challenge for traders and logistic service providers reposition themselves. Third, we witness the growing share of the retail channel and other larger outlets. The turnover across sales channels shifts gradually but clearly from small florist shops to large construction- and garden centres, as well as large retail shops. One has to develop new business models to satisfy those huge clients. Fourth, on the other hand, small florist shops still remain major outlets also for the Dutch potted plant sector. Fifth, we witness a growing stream of plants and flowers going directly from Italy or Spain to let's say France and Eastern European countries. There seems to be no added value transporting these product through the Netherlands. The related trespassing of Dutch territory may weaken the present plant supply chain in which Dutch traders and service providers are very successful. In this case, Dutch logistic service providers want to meet the challenge to render their services, but without physically transporting the flowers via the Netherlands. Splinter et al (2006) arrived at eight major challenges to the Dutch potted plants sector. These authors derived that four types of market clusters, with sub-strategies, could be detailed (Splinter, et al, LEI 2007). Overall we see that major developments challenge the competitive position of the Dutch potted plants sector, its cooperative practices, and the business routines for day-to-day coordination, but the challenges provide also potential for new partnering strategies by the Dutch potted plant sector in the various market clusters.

Related research has shown that the export share of the Netherlands in total potted plants exports in the prime European markets has an export value of 1.1 bln Euro. Although this represents over 70 percent of all related exports there is still over 0.4 bln Euros of exports by other European countries. Moreover, next to the local Dutch market and its exports, and excluding exports from third countries, there is a market of almost 2.2. bln Euros in local-for-local sales. Projected growth figures of especially exports from third countries shows that the Dutch production and exports probably looses export market share (Scheer, et al, 2007). If the Dutch want to benefit from sales growth of potted plants in the EU, than the Dutch will have to internationalize their trade and transport networks in floriculture. However, in contrast to individual firms there are no internationalization standards for networks. For

---

<sup>1</sup> The authors would like to thank participants in the FloriLog meetings of 26 November 2007 and 13 December 2007 for their valuable comments and suggestions. We also thank the *leerstoelgroep Bedrijfskunde* of Wageningen University, and especially Transforum for co-funding this sub-research project (WUR 440.8338.00) under *FloriLog regie*, nr. IN-001. Evidently, only the authors are responsible for this paper.

example, a firm may, source or distribute internationally, or both. Furthermore, firms may import/export on an order-by-order basis, internationally outsource standard labour intensive activities, to create coordinated subcontracting, or invest in industrial production capacity abroad (Andersen & Christensen, 2005; Camuffo, 2007; Root, 2004). However, when autonomous traders want to internationalize further their business and networks there is no recipe.

As the developments within the (international) plant sector just described are substantial and rather robust, one has to think twice before making choices on strategies to realise new sustainable competitive advantages. Firms experience increasing difficulty to maintain their position by relying solely on their current activities realised by owned resources and capabilities. 'A business enterprise looks more like a linking unit where its strategic attributes lie in how it connects other market participants to each other.' (Hakansson & Snohota, 1995, according to Ritter, et al, 2004) Actually part and parcel of the Dutch floricultural success is the embeddedness of individual firms in a set of relationships, which both enable and constrain the firm's activities (See Van der Vorst, 2006). This scientific paper orients the reader on the alternative network types, and on the critical issues in selecting amongst them and implementing the preferred business network. Lambert and Cooper (2000) already called for research which focussed on the organizational design of supply chains and networks. The design and configuration of supply chains and networks offers a challenge to scientists to offer practitioners handholds to think and act on their day to day managerial questions. Supply chain management takes a systems view on the activities, roles and functions that are needed to bring a product or service to the market (Sanders, 2006). During the project FloriLog participants arrived at the following ambition: by and large, the aim is to roll out the Dutch open-marketplace system in Europe, starting in Germany. The research under WP3 should orient itself at the following question: How to organize the preferred business model, also considering network orchestration? This scientific paper under WP3 answers the following question: To foster its European ambitions, what are the organizational network forms to be implemented in Dutch Potted Plant sector?

To provide the sector with related concepts to answer the question we have structured the paper as follows. We first try to detail insights on network research from a business perspective. Second, some groupings of networks are presented to ease the reader structuring of thoughts on where does the potted plants sector stand? The third and fourth section detail how to understand competitive advantage on the network level, respectively, how to coordinate economic activity for competitive advantage. Key section in this paper is section five, presenting a **typology of networks**, plus a part with a more specific paragraph detailing networks on geographical dimensions. Section six is about the impact of the network environment, and section seven is about the firm objectives establishing interfirm relationships. Section eight details the design distinguishing the perspective of the orchestrator from the perspective of (potential) network partners. Network governance is detailed in section nine, detailing classes and instruments of governance, linked to governance strategies, and the typologies from section five. At more detail we have the allocation of roles and functions, in section ten. Finally the important section eleven on management of change, detailing the issues on transformation of existing networks vs renewal networks and emerging new networks, together with structure integrative mobilisation vs network changing mobilisation. When one is merely interested in the summary of the applications to the PP-sector the conclusions should suffice.

## 1 Network: What's that?

Networks have a long and diverse history in business, society, and in research, but it is only of recent date that the focus of business, consultancy and research shifts towards value creation and delivery (Ritter, et al, 2004, p.175). That is, we see a rise of interest in business networks, towards managing collaborative arrangements to gain or sustain competitive advantage vis-à-vis outside competitors (Brass, et al. 2004). In the emerging business world of chains and networks one observes a wide spectrum of collaborative networks, for example optimized pork-chains, flexible Italian industrial districts, standard setting networks in electronics, airlines' hub-and-spoke and alliance networks, physical electricity networks, and the virtual mobiles and internet networks (See e.g. Klict-series, Reed business information, 2004-2005). Also network research is diverse, for found disciplines such as sociology, communications, psychology, economics, biology and medicine, logistics and organizational behavior, bringing about a proliferation of terms, concepts, mechanisms, and many studies, resulting in a multitude of partially contradictory results (Contractor, et al (2006), *Academy of Management Review*, pp.691-700; Miles and Snow, 1986, 62). It is indicative that it takes Todeva (2006) 16 pages to explain no less than 89 concepts. When we look for articles with network(s) in the title, within the international database SSCI, we already track 5773 articles in the social sciences since 1995, 327 articles of which are printed in the top-13 scientific business journals. At this moment, network research orients itself to different levels of analysis, that is the personal network, firm internal or intrafirm networks, dyadic or relationship level, supply chain and business network, industry network, the country level of analysis, and even the global level (Ritter, et al, 179; Hagedoorn, 2006; Contractor, et al, 2006). The business network literature is dominated by descriptive empirical studies, which comes at a loss of providing few widely applicable lessons (Croom et al, 2000; Harland, et al, 2001). Although, there is no prevalent theory of networks (Sacchetti & Sugden, 2003), business related literature tries to understand behavior of firms via different forms of embeddedness (Granovetter, 1985) and their complex interdependencies (Hagedoorn, 2006, *AMR*, 670-680), to arrive at recommendations.

Interfirm relations can create value in combining firm resources, knowledge, and assets which will be difficult to be imitated by competitors. The created value originates from network characteristics, like relationships and the flow of resources between independent firms (Jones et al, 1997). Despite sectoral and disciplinary differences, business networks have a number of defining features; a network requires organizations and/or individuals, with a degree of autonomy, systematically interconnected, and who have common goals, or interests (Pitsis, 2007). Business or strategic networks may be further characterized by the fact that the network is an intended arrangement between actors, lacking an organizational authority to arbitrate (Moller & Svahn, 2006). Based on a literature review, Todeva defines Business networks as 'sets of repetitive transactions based on structural and relational formations with dynamic boundaries comprising interconnected elements (actors, resources and activities). Networks accommodate the contradictory and complementary aims ...and facilitate joint activities and repetitive exchanges' (Todeva 2006, p.15). Ghisi and Martinelli (2006) provide an extensive discussion on 17 related definitions. In this paper we use the term networks for business networks, and include supply chains therein. We loosely **define** such a **network** as autonomous firms, who co-operate systematically on their complementary/shared objectives, with joint activities and repetitive exchanges to add value for clients.

## 2 What is our network position?

Next, we will present some justified simplifications in the format of taxonomies because reducing complexity is one of the most important tasks in chain and network management (Hanf & Dautzenberg, 2006, 81). A taxonomy brings a systematic grouping of items, using a small number of criteria, making it easy to distinguish and discuss cases. Remarkably, on business networks working with real products, only a few business network classifications have been developed (Lamming, et al, 2000), often typically looking at one aspect, e.g. human resources integration (Grandori & Soda, 1992), or industry-specific. We focus on the two dimensions of degree of industry dynamics and the degree of product complexity.

The first taxonomy is a matrix distinguishing between lower and higher **product complexity** on the one hand, with supply networks of **innovative/unique products versus functional products** as a second differentiator (see figure 1) (Lamming, et al, 2000). An extreme product of both high complexity and uniqueness is the Twinscan by ASML, a high-tech lithographic machine for the production of ICs, costing 20 million per system. In this filed of the matrix, speed and quality supremacy are critical. The same is true for unique or innovative products that are less complex. Here, the information exchange is lower for it may be to the advantage of competitors. In networks with complex but functional products, like most cars, we see that sustainable quality and costs are critical in competition. In the last category we have standardized produce like soft drinks or DVD-recorders, where economies of scale are critical. As products are re-invented or become mature over time they may change form one box to another box. The network must orient itself to the related competitive priority and sharing of resources.

Characteristics	Supply networks of innovative and unique products	Supply networks of functional products
Higher complexity	<p><i>Competitive priority:</i> speed and flexibility, innovation, quality supremacy</p> <p><i>Sharing of resources and information:</i> large amounts of non-strategic information enabled by IT – problematic when involving sensitive information and knowledge</p> <p><i>Not included in survey</i></p>	<p><i>Competitive priority:</i> cost reduction, quality sustainability, service</p> <p><i>Sharing of resources and information:</i> large amounts of non-strategic information enabled by IT – generally unproblematic: may include cost breakdowns and strategic knowledge</p> <p><i>Example from survey:</i> off-road car</p>
Lower complexity	<p><i>Competitive priority:</i> speed and flexibility, innovation, quality supremacy</p> <p><i>Sharing of resources and information:</i> problematic exchange of sensitive information and knowledge – IT less critical</p> <p><i>Examples from survey:</i> drugs, LED semi-conductor, communications technology</p>	<p><i>Competitive priority:</i> cost (by high volume production), service</p> <p><i>Sharing of resources and information:</i> generally unproblematic – may include cost and strategic knowledge – IT less critical</p> <p><i>Examples from survey:</i> canned soft drinks, beer cans, wheel cylinders, window wipers</p>

Figure 1: supply network typology. Source: Lamming, et al (2000).

At the level of the network one may divide along two dimensions, i.e. between **dynamic vs routinized supply networks**, the **degree of network influence** of the focal firm as the second differentiator (see figure 2, below)(Harland et al, 2001). This figure is grounded on extensive and diverse data gathering. In the figure, the key activities are placed in the corners of the 4 boxes. For example, dynamic networks tend to compete primarily on innovation with rapid technological change. Partner selection and decision-making are key in networks with a dominant focal firm. The high level of influence of this orchestrator was caused by two factors: 1) His direct added value to the network or innovative

capability was large. 2) His provision of access to the rest of the network (bridging) was considered critical by other firms. It may be in either dynamic or routinized networks that a dominant focal firm is able to dominate, manage the network. But firms state in interviews that when, focal firms do not strongly influence the network, they typically find themselves having to cope with network operations. There, motivation and allocation of costs and benefits are critical issues at network level. There is positive and negative evidence on success rates of dominated alliances vs balanced alliances (Nooteboom, 1999, 83). Key networking activities in routinized supply networks are equipment integration and info processing to optimize costs and stocks.

A quick glance at the case would indicate that FloriLog partners in the majority of cases deal with non-unique products of lower complexity. Complexity is somewhat increased by the problems of creating supply distribution channel-specific assortment and product quality sustainability. However, the latter problem is substantially lower for potted plants than for flower and fresh vegetables. The formation of assortment is really a competitive strength, although the changing market shares of the different channels and countries reduces the need for wide assortments and related (complex) reallocation mechanisms. We find, on this account, that the sharing of information and resources is unproblematic in general. On the second item of network dynamics and focal firm influence one may doubt whether or not it is really a dynamic supply network, because dynamic networks tend to compete primarily on innovation with rapid technological change. The current equipment integration (and information processing) suits routinized supply networks. More interesting is the view within FloriLog that the open Dutch trading system should be exported, without a focal firm that really selects partners and sets major decisions. Would that mean that explicit orchestration de facto absent?

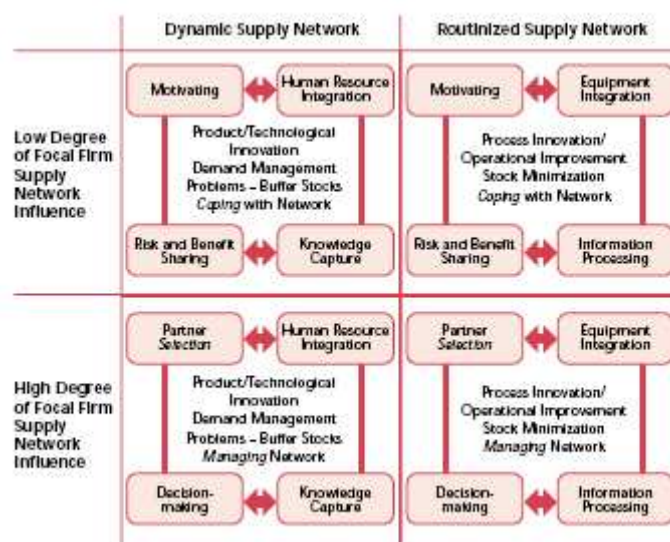


Figure 2: taxonomy of supply networks. Source: Harland, et al, 2001.

Research brings that without explicit orchestration the network experiences motivation problems, because firms are coping with the network operations. The network should focus on stock minimization and process innovations.

APPLICATION: At product level, and in comparison to other industries, FloriLog may be characterized as a supply network of functional products with a at most moderate degree of product complexity (see figure 1). The product complexity relates here to product quality sustainability, and the realisation of distribution channel-specific assortments. This suits a competitive priority on cost by high volume production and services. At network level, the ambition of FloriLog is to expand the network by spreading out current activities over Europe and attracting local firms. This may be labeled as a routined network (left half, figure 2) . Process innovations and stock minimization dominates product innovation; prime activities at the network level of such routinized supply

networks is equipment integration and information processing, e.g. carrier standardization and dedicated ICT-networks. Furthermore, it may be considered attractive when FloriLog becomes an orchestrator in the driver's seat, for then it would have a high degree of influence on the supply network. With a dominant focal firm comes network level partner selection and network level decision-making (lower-right area, figure 2). However, so far the discussions and progress in FloriLog indicates more an urgent and ongoing need to activate and motivate firms in the network. In that case it suits to discuss at network level also the allocation of costs and benefits; what is shared and what is individually realized (top-right corner of figure 2). But these items do not characterize network orchestration, but firms that have to cope with a network, are subject to it. As a conclusion, and taking the latter characterization, one may state that when the open-marketplace system wants to spread out and attract local firms, than the value proposition must become much more prioritized: what's in it for me, as (local) firm?

### **3 Explaining competitive advantage on a network level**

Organizing effective networks has become one of the key tasks of companies in order to gain competitive advantage. Mentioned examples of new developments in the potted plant sector illustrate that strategizing and organizing is not self evident. Organizing a (logistics) network is in a sense the bridge between strategy (of doing business) and (logistic) operations. We assume that a logistic service provider, seen as a hub firm, organizes its operations within the boundaries of the strategy of doing business. In this assumption the logistic structure follows strategy. In scientific literature there is a gap concerning how hub firms can organize their operations within the context of strategies on doing business. The organizational setting focuses on management dimensions of networks of companies. We acknowledge the fact that a certain hub or focal firm should have the position to be able to organize this network (see Dhanaraj and Parkhe, 2006), but we will concentrate on typifying the managerial component of networks.

The main idea is that inter-firm relationships can create relational rents which go beyond the efficiency arguments of transaction cost analysis (Williamson, 1985). Although the understanding of networks has a long history in research, it is only of recent date that the focus shifts towards their role in value creation and delivery, i.e. in managing business networks (Ritter et al, 2004, p.175). Interfirm relations can create value in combining resources, knowledge, assets which will be difficult to be imitated by competitors. This added value originates from network characteristics like relationships and the flow of resources between independent units (Jones et al, 1997). Factors resulting from the embeddedness of firms in a rich social context can be influential in altering network resources available to firms, which may in turn shape their behavior. By neglecting such factors, prior research that focused on competence-based drivers for alliance formation implies that firms are atomistic actors performing strategic actions in an asocial context (Baum and Dutton 1996; in Gulati 2007). In such studies, the external context remains encapsulated within measures of competitiveness in product or supplier markets, with limited consideration of a firm's social structural context or how this can influence strategic actions and outcomes in important ways. Economic sociologists have demonstrated how the social structure of ties in which economic actors are embedded can influence their subsequent actions (Granovetter 1985). Moreover, Burt (1982) and Baker (1984) have shown that the distinct social structure patterns in exchange relations within markets shape the flow of information which in turn provides both opportunities and constraints for actors and can have implications for their behavior and performance. Such an embeddedness perspective, which highlights the salience of networks, is applicable to both individual and inter-organizational networks (Gulati 2007, 31-32). Our conclusion is that value creation or competitive advantage can be understood from a network perspective by making the distinction clearly between the structural context, e.g. embeddedness of firms in a network, and the resources of those firms. The structural context enables the flow of

information about markets and industry to firms. The combination of resources enables firms to respond to opportunities in the environment.

This distinction in the 'structural context' and 'resource-based' is in line with a distinction made in strategy literature. According to this distinction, there are two major bodies of theory and research on competitive advantage. These two major bodies are represented by the outside-in and inside-out perspective. From the *outside-in* perspective competitive advantage is viewed as a firm's ability to adapt to industry forces. Porter (1980) brings forward five major industry forces shape competitiveness, including threats of new entrants, the bargaining power of buyers and suppliers, the threat of substitute products or services and rivalry among existing firms. This industry centric view, in other words, explains competitive advantage of a firm or network which is triggered by activities of competitors and other industrial parties.

The *inside-out* perspective views competitive advantage from the angle of competence of a firm or network. The level of development of valuable resources and competencies and capabilities assembled within a network determines whether or not a network can compete with another network. This competence-centric approach argues that resources, skills and capabilities supports and stimulates competitive advantage. Network creation and orchestration suits this view of taking the lead on the basis of superior competences.

From a network point of view the outside-in perspective is characterized by means of the structural context of firms. Information on competitors, developments in industry flows through embedded relations of firms to firms. The inside-out perspective is viewed like wise in network terms as resources, more pointedly the variety of resources within a network.

One may find a load of potentially relevant literature from different approaches, e.g., social capital, organizational ecology, and TCE (Contractor, et al, 2006), yet one finds fragmented explanations on why a certain network is chosen, and how it is best implemented in a setting in transformation. The business network literature is dominated by descriptive studies, which comes at a loss on providing applicable lessons (Croom et al, 2000). There is no overview that clearly relates the divergent business strategies and practices with the scattered literature on organizing networks. Moreover, the inside-out and outside-in perspective are mostly perceived as contrasting explanations of competitive advantage. What happens if we treat these two perspectives as parallel explanations for competitive advantage. Both perspectives focus on how economic activity, here coordinated within a network, should be managed. Our assumption is that for a network to be able to show strategic behavior the perspectives of outside-in and inside-out should be combined. The outside-in perspective highlights the fact that embedded firms within a network are more responsive to developments in their environment: embedded – discrete (Meyer, 2007). The inside-out perspective within a network setting can be described as the way in which a variety of resources can be used to form the strategic response (see Toms & Filatotchev, 2004): extensive – narrow resource base. Our objective is to present an integrative framework to explain the relation between business strategy and organizing networks. Generally, this framework enables us to understand how the combination of two distinct characteristics of a network influence strategic behavior; i.e. enabling access to information and enabling access to resources (see for a comparable reasoning Gulati 2007, 260).

#### **4 Coordinating economic activity for competitive advantage**

Our integrative framework is based on two dimensions. These dimensions give managerial answers to the question how to manage economic activities; (1) by managing the access to resources of involved parties and (2) by managing interfirm relationships. Additionally, we will detail a set of network alternatives where the geographical aspect is explicitly dealt with.



**Interfirm relationships: Embedded – discrete**

The concept embeddedness focuses directly at interconnectedness of parties in a network and in line with that interconnectedness of relationships. The IMP-group strongly advocates this approach to business (Anderson, Hakansson, Johanson, 1994, Hakansson and Snehota, 1995). Collaboration is directed at strengthening the position of partners; adding value. Every relation balances between competition and partnership. It is argued that companies embed themselves intentionally in a web of durable collaborative relations whether or not those relations are loosely or more tightly coupled. Embeddedness holds economies of time, integrative agreements, allocative efficiency, and complex adaptation. However, embeddedness can derail economic performance when the network becomes more and more dominant (resource base is narrow); the firms receives information and absorbs info on structural changes and shocks too late (Uzzi, 1997). The discrete organization perspective points at the idea, inspired by neo-classical economists, that organizations are fundamentally driven by self-interest. Competition is, from this perspective, the natural state of affairs. Bargaining for price between buyers and sellers, grasping opportunities to get the upper hand over rivals etcetera motivate companies to strengthen the competitive position over others. Collaboration is aimed at inhibiting competition (De Wit et al, 1998, 509-511). An overview of these approaches is given in the table below.

	<b>Discrete Organization Perspective</b>	<b>Embedded Organization Perspective</b>
Emphasis on	Competition over cooperation	Cooperation over competition
Preferred position	Independence	Interdependence
Environmental structure	Discrete organizations (atomistic)	Embedded organizations (networked)
Firm boundaries	Distinct and defended	Fuzzy and open
Inter-firm relations	Arm's length and transactional	Close and structural
Interaction outcomes	Mainly zero-sum (win/lose)	Mainly positive-sum (win-win)
Interaction based on	Bargaining power & calculation	Trust & reciprocity
Network level strategy	No	Yes
Use of collaboration	Temporary coalitions (tactical alliances)	Durable partnerships (strategic alliances)
Collaborative arrangement	Limited, well-defined, contract-based	Broad, open, relationship-based)

Figure 3. Source: De Wit, et al, 1998, p.512.

**Access to resources: extensive – narrow resource base**

Business network literature has focused on the strategic resource content. Managerial and entrepreneurial resources drive growth and diversification. Such resources might include specialized production facilities, trade secrets, and engineering experience. They also include firm specific, idiosyncratic knowledge assets. These firm specific factors are traditionally considered as the major drivers of strategic change according to the resource based view. The clustering of firms in networks may be promoted by through sharing trade secrets and drawing on local pools of experience and skilled labour. Organizational diversity and network characteristics are likely to be closely influenced by how firms accesses resources. Large and diverse organizations have, by definition, control over a wider resource base and have the option to internalize them using a hierarchical structure. Similarly a small company, which has a shortage of resources, has to access resources via the market (Toms and Filatotchev, 2004).

## 5 Typology of networks

The proposed dimensions, in combination with the networks typology of Albers (2007) combined add up to the following five network types. See figure 4.

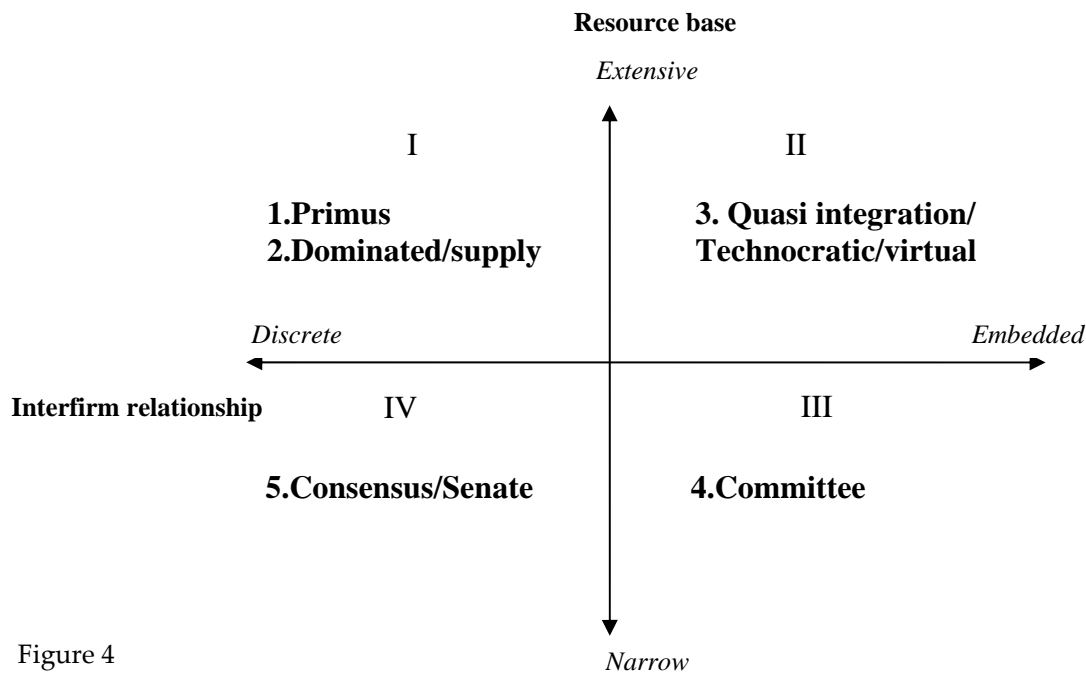


Figure 4

### 1. Primus network

The availability of extensive resources with firms within a network provides the possibility to hierarchally access these resources. On the basis of rough agreements between seniors on all involved firms, one firm is given substantial autonomy in planning on behalf of all partners involved. The emphasized common vision and aims create trust, shared interests, and joint investments, and self-enforcing safeguards. The shared aim is growth. As a result this requires only a few performance indicators, plus simple incentives and synergy allocation rules. With a high degree of direct supervision, informal communication, and only minor delegation by the seniors, this configuration suits best networking by a small number of ambitious SMEs. An example relates to Air Berlin, who was given substantial freedom by Air Lauda to plan both the flight networks for both of them. No detailed contract was drafted. Later Air Berlin took a 25% share in Lauda and they invested jointly. The loss in autonomy was compensated by the expectation of a boost in turnover.

A second possibility for this combination of extensive resources and discrete position of firms, pending the partners selected in this network, is the following network type.

### 2. Dominated/ supply network

Partners from successive stages of a supply chain may aim at improving chain effectiveness, by concentrating on complementing the core competences-driven activities of partners along the value chain. Although supply chain links may need to be intensive, communication innovations and cheap transport makes vertical integration of geographically dispersed firms redundant. It has the advantage of enabling (re-)contracting firms that are segments specialists, enabling the orchestrator to realize its ambitions quickly with relatively low (relation-specific) capital needs. Typically, the network splits up between cost oriented jobbers, value added providers, 1<sup>st</sup> tier partners, and a core firm, or orchestrator. A means to put the interest of the core firm central is to use of the head-and-tail format of developing and marketing the end product, optimally outsourcing or partnering for everything else, appropriating most of the value added as it has a central position bridging structural holes. Critical item in the vertical supply chain is the dependency-balance between network partners, all trying to

gain and exploit unique competitive advantages. The resulting performance contrast between the supply chains of GM and Toyota is informative, as the first one stands for an zero-sum approach where short-term appropriation is focused upon, while the latter emphasizes more the positive-sum of a growth orientation. An alternative for a dominated supply chain is industrial district or cluster, where more or less equal, socially controlled partners leverage their specialist resource base and capabilities.

Since the '80s we find plentiful examples of this configuration, like Microsoft, Ikea, Toyota, and Nike (de Wit and Meyer 2004, 552)) but also Miss Etam (Van der Vorst, 2006). Networks may vary regarding (de-)centralization of decision-making authority, be it horizontally between actors/firms and/or vertically delegation to certain layers in the organization. When the network focus is on a single stage of the supply chain we may refer to chain stores or franchisers, like many (smaller) retailers (Lorenzoni and Baden-Fuller, in, D e Wit & Meyer, p.557)

### **3. Virtual company, quasi-integration or technocratic network**

This type of network which is characterized by extensive availability of resources and embeddedness has a broad scope. Under the leadership of a core group of early, often large experienced firms, mutual adjustment dominates the alliance governors board. Operationally, the size and position of the joint unit drives standardization and formalization with an elaborate monitoring system and complex synergy assessment and distribution rules. The firms will integrate or harmonize their systems to exploit the potential benefits, of this network that aims at efficiency (De Man, 2004) and growth [Albers, 2007] Alliance specialists and dedicated staff execute vertically decentralized, operational tasks. Strong competition, constraining regulation, or the need for internationalization may result from this configuration. in a rather stable industry. Firms are bound to stay in the group as a result of the network specific investments.

Clear examples are the airline alliance networks, like Star Alliance and resp., shipping alliance networks, e.g. the Grand Alliance, or the Rabobank. In the airline alliances, dedicated alliance managers run the elaborate joint business unit that coordinates the dispersed activities of the partners. The efficiency increase relates route planning, code sharing, and capacity management. A detailed monitoring system and extensive standardized and formalized practices result in furthering the integration of the firms in the network. The original partners still dominate the developing network.

### **4. Committee network**

The scope of this network is broad in principle, with growth aims and general intentions at the level of senior managers from the participating firms. At the network level this broad scope is effectuated because of innovative initiatives of workers at a decentralized level. The initiatives are organized via focused groups. In this manner a rather low degree of resources with individual firms is combined into new initiatives. A committee of alliance managers take the supportive nourishing and monitoring of the various projects. The committee does not detail any precise decision-making system nor revenue allocation rules. The embeddedness of firms stimulates a common culture, evidently mutual adjustment, low mutual uncertainty, and autonomy are standard practice. The result may be a myriad of collaborations, dependent on interest amongst firms and their employees to collaborate.

An example in case may be an Australian network of 24 computer service firms. They have very flexible relationships with the initiating partner as project leader. The absence of a governing system makes that the emphasis of the networks is on the set of subgroups (Miles and Snow, 1995).

### **5. Consensus or Senate network**

Partners, as in parliaments, delegate operational activities to a contracted, specialized company. The prime aim of partners is efficiency enhancement in a relatively stable and simple environment. As a restricted activity becomes a delegated matter for the partners, who are de facto competitors, no specialists are appointed, and the heads of the involved functional area, evaluate progress regularly. The heads are member of the alliance board, which has to deal only with a narrow scope. The firms

know that the potential cost reductions are by definition restricted, which makes them inclined to distrust, decide by time-consuming consensus, fine-tune contracts, reject shared systems, and may employ third parties to enforce agreements. The size of the network will remain limited as mutual adjustment becomes an hindrance in larger networks.

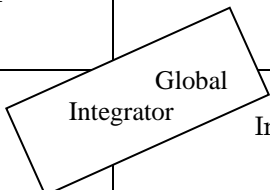
An example is the joint transport purchasing alliance by a group of consumer product producers, like Beiersdorf, Colgate Palmolive and SaraLee, to bundle their part truck shipments to retailers. Logistic operations are delegated to a LSP. Also some growers associations may represent an example.

### The importance of crossing borders

The research project has a strong cross-border element, for which the authors found a specific typology with a focus on the coordinating functions in industrial activities. Space has an influence on relational norms and governance forms, for example because national boundaries 'institutionalize a distinction between distanced business contexts.' (Andersen and Christensen, 2005, 1263). Firms may be able to bridge the structural hole, i.e. connect distant firms due to local coordination cost advantages and superior access to networks. The typology presents the operational coordinating functions taken by the subcontractor working for a final assembler, which in for our case could also be a shop/retailer. Here we will detail 5 types with their position in the international production flow and their characteristics on several dimensions (see Figure 5). 1. In a later section we will present the related roles key bridging functions.

Figure 5. Overview of bridging role typology.

Upstream orientation	Downstream orientation		
		Domestic buyers	Foreign buyers
	Domestic subcontractors	Local integrator	Export base
	Foreign subcontractor	Import base	International spanner



Source: Andersen and Christensen (2005), p.1264.

First, the **local integrator** links up domestic suppliers and a broad range of domestic buyers. His transaction-orientation enables flexibility in the local supply network. His coordinative capability is ensuring responsiveness by linking excess and lack of production capacities. To ensure flexibility he will not dedicate investments to certain buyers. Second, the **export based** firm links up domestic suppliers with foreign buyers by means of coordinated subcontracting (Camuffo, et al, 2007). Due to his upstream bridging for international buyers, he is able to translate international market demand into local supply activities. His coordinative capability is to maintain a position in a local network, which provides him the opportunity to bring (basic) information about local supplies to the foreign buyer(s). For example, local Dutch car manufacturing suppliers try to form such a export base platform for global clients. Alternatively, also various potted plants traders with their loose supplier relations suit this type. Third, the **import base** position links up foreign suppliers to domestic buyers. The downstream bridging for local buyers concerns knowing and contracting international technologies and sources to supply applied products locally. The firm may have the advantage of economies of scale or scope in logistics or administration, coupled with optimizing or buffering import flows. Fourth, the **international spanner**. Key capability is the orchestration of independent, geographically dispersed players. The firm needs close collaboration on both sides, using information asymmetries, and logistics to consolidate a precarious position. As the Netherlands is a gateway to Europe there may be relatively many international spanners, e.g. in flowers. Fifth, the three preceding formats may bring about the **global integrator**, responsible for connecting international parties by supplying its logistical infrastructure for carrying out exchange. It may have a strong orchestrating

position integrating international buyers and sellers. In this typology, the networks of Lemkes and METZ may resemble this type, although located in the country of their sellers, because their infrastructures are essential in bridging systematically different interests. Further internationalization of suppliers suits this type. These 5 types bring together all formats of international supply networks with a focal firm (Andersen and Christensen, 2005). Later we will list the functions related to these types.

APPLICATION: Regarding the five network types arrived at by this paper, one should decide on the extend of (potentially) shared resource bases (wide or small), and whether one takes the network as an economic tool or an organic unity, i.e. atomistic, loosely coupled firms vs structurally embedded firms. Note, that in FloriLog the emphasis is on the auctions, traders, and transporters, not on the Dutch local growers. The information sharing within FloriLog turns out to be more limited than may be expected in networks with embedded firms. Regarding such interfirm relationships the outsider sees discrete firms who perceive each other as competitors in appropriating a share in value added. At least according to literature, regular top-level meetings are necessary to deal with the mutual distrust. Furthermore, the project tends to realize limited collaboration on the resource bases. We conclude that FloriLog suits the consensus-type of network (lower-left area, figure 4). In strong contrast to quasi-integration networks, in a consensus-requiring network the focus is on efficiency enhancement, cost reductions in a relatively simple setting. Such a collaboration will have a narrow scope, e.g. joint transport purchasing. We derive, when extrapolating practices, that the collaboration is better on a limited scope with focused value-for-money activities for individual (local) firms.

The Dutch potted-plant sector wants to change from export based to global integrator, supplying a logistic infrastructure to foreign and international buyers and sellers to carry out exchanges. The focal firm may become orchestrator when its bridging role is recognized, but when it is more an international spanner when its bridging role is easy to copy, footloose. The latter position is easily conquered, for substituted, by foreign firms.

## 6 The network environment

The first step in the development of a business network is to have a general idea of the environmental conditions on the market, and the presumed shared position on the industry life cycle. Regarding the **business environmental conditions**, first, note that comprehension of the environment conditions may vary from simple to complex. Second, the degree of environmental change may vary from static to dynamic. See figure 6. When the conditions are simple and stable the environment is relatively straightforward to understand, technological developments are small, competition is often focused on a limited number of variables. Then, one tailors the network to optimize for specific functions, e.g. logistics. In more dynamic environments under simple conditions scenario's may help to prepare for the alternative developments. In case of a static environment, i.e. with hardly any substantial changes, with a complex setting, decentralization of decision making to adapt to more specific settings (e.g. individual countries, or decentralisation of decision making into focused clusters) may satisfy. Finally, under a context of dynamic and complex environmental conditions one has to bring the adaptability to the forefront of the organization, via (vertical) decentralization of decision-making authority. Ideally, an environmental setting suits the collective aims of a network, which should be in line with the aims of its individual firms.

Figure 6: strategy development in environmental contexts

Environmental conditions	Simple	Complex
Static	Forecasting	Decentralization
Dynamic	Scenario's	Learning organizations

Source: Johnson & Scholes, 2005, p.83.

Related to the static view on environmental conditions on markets is the dynamic assessment of developments along the **industry life cycle** (Toms & Filatotchev, 2004; De Man, 2004). Initially, in case of innovations/new business development firms may use an R&D consortium. In the case of radically new technologies, business fields or offerings, one may expect emerging networks (Moller & Svahn, 2006). Networks of individuals dominate over market processes, in order to prevent opportunism (Toms & Filatotchev, 2004, 637). Around market introduction you may need standardization networks to ensure complementary products and bind potential competitors to your products and technologies. When individual firms have narrow resources bases they may collectively set up joint activities, to realize (external) economies of scale, e.g. in purchasing, processing, banking, or marketing (Toms & Filatotchev, 2004, 638). In the growth phase vertical supply networks help to ensure volume growth with minimum disturbances. Rising cash flows may be directed to create self-sufficient networks, that internalize critical resources, under the heading of powerful networked directors (Toms & Filatotchev, 2004, 638). Firms may specialize their value chain activities. Mature and stable networks suit the carrying out of current business (Moller & Svahn, 2006). In the maturity-phase of the life cycle product extensions and services may help to keep up sales, and compensate for overcapacities. The network may get more diverse, as the resource bases widens. However, vested interests, power positions, may seriously delay rationalizations and technological upgrading (Toms & Filatotchev, 2004, 638). Asset specificity may go down and business units may realize high levels of autonomy, i.e. more decentralization, within a holding structure (Toms & Filatotchev, 2004, 638). In a declining industry, cost-cutting and capacity reduction is crucial leading to consolidation and quasi-integration networks (de Man, 2004, p.53). To survive firms have to broaden their resource base, esp. new funds and new heterogeneous business contacts, to realize diversification (Toms & Filatotchev, 2004, 642-3). This dynamic perspective reminds us to frequently re-assess the environment and relate this state of the art insights to the design of the network.

## 7. Network objectives

Interfirm-relations may serve a large number of objectives, related to either markets, competition, assets, or competencies. The following objectives of interfirm relations were gathered by Nooteboom (1999, p.71) and Ghisi & Martellini (2006, 468-9):

Assets: efficiency, scale and scope.

- Scale: share threshold costs, or create larger units
- Scope: better utilization of assets with different products
- Share or spread risks
- Portfolio expansion
- Prevent excess capacity

Markets:

- Tailor products to local market
- Satisfy import/export restrictions
- Gain rapid access to resources
- Gain rapid access to output markets
- Satisfy restrictions on profit repatriation
- Satisfy political consortia preferences

Competition:

- Pre-empt competition
- Reduce size-disadvantages, increase power
- Attack competitor in home market
- Install entry barrier
- Set market standard

Competencies:

- Product differentiation
- Expand marketing actions
- Increase access to knowledge
- Enable concentration on core competences (exploitation)
- Seek explorational advantages, by cost sharing and resource pooling

Typically a combination of these objectives and aims are reasons to form networks or other interfirm relationships. Different market strategies (Slinter, et al, 2006) are focussed on realising different resources, but no clear-cut clustering is possible of strategies and objectives. For, each of these aims may dominate others, and thereby be decisive in the logistic strategy, network design and running practices of the network activities.

To provide a convenient grouping of network aims/objectives one will here, for the sake of brevity, contrast growth-oriented networks and efficiency oriented-oriented networks. Growth oriented networks have partners with involvement of the higher levels of the firms, who pool complementary resources. They must beware for misunderstandings with local partners. Initially, and contrasted to efficiency-oriented networks, their standardization is lower as is the specialisation of tasks and delegation of decision-making power. Efficiency-oriented networks can easier standardize practices and delegate decision-making. It comes with pooling and consolidation. We deduce that flexible, open networks will better suit growth oriented partners designing a network.

## 8 Network design

Next step is the design of the network, which can be driven by a network orchestrator or by the group of initiating firms. Reviewing literature on design parameters of business networks, we arrived at the following parameters; (1) structural aspect (position and connectivity) (2) process aspects of networks (stability, time span, rationales) (3) control of actors and resources (Governance) (4) roles/functions, and (5) social relations (trust) (Jansson et al, 2007). We deal with the first two parameters in this section. Governance is the core of section nine.

We will first focus on the roles of a network **orchestrator**. With the orchestrator in mind we have to distinguish between network design activities and ongoing network management activities and processes. To deliberately create a network the network orchestrator has to detail the following three network design items (Dhanaraj & Parkhe 2006, 661; see figure 7):

- network membership,
- network structure, and
- network position.

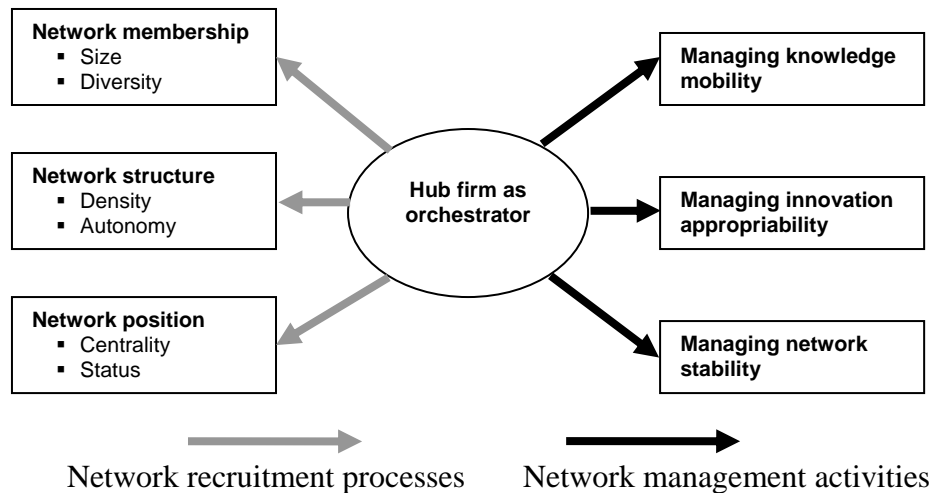


Figure 7. Source: Dhanaraj & Parkhe 2006, p.661.

Network membership is specified by the size of the network (**how many firms should be in the group?**) and the diversity of its participants (**do we need a homogeneous or heterogeneous group?**). Network structure is typified by the density of networks (**do many firms know each other?**) and autonomy (**are firms subdue to other firms?**). A specification of network structure concerns the choice of the governance mode, in particular the design of control mechanisms, value constellations, loyalties, and binding mechanisms (Nooteboom, 1999, p.82). We will come back to it later on. Network position relates to the centrality of a firm (**who has most important relations?**) and the status the firm has (**who is the reputed leader?**).

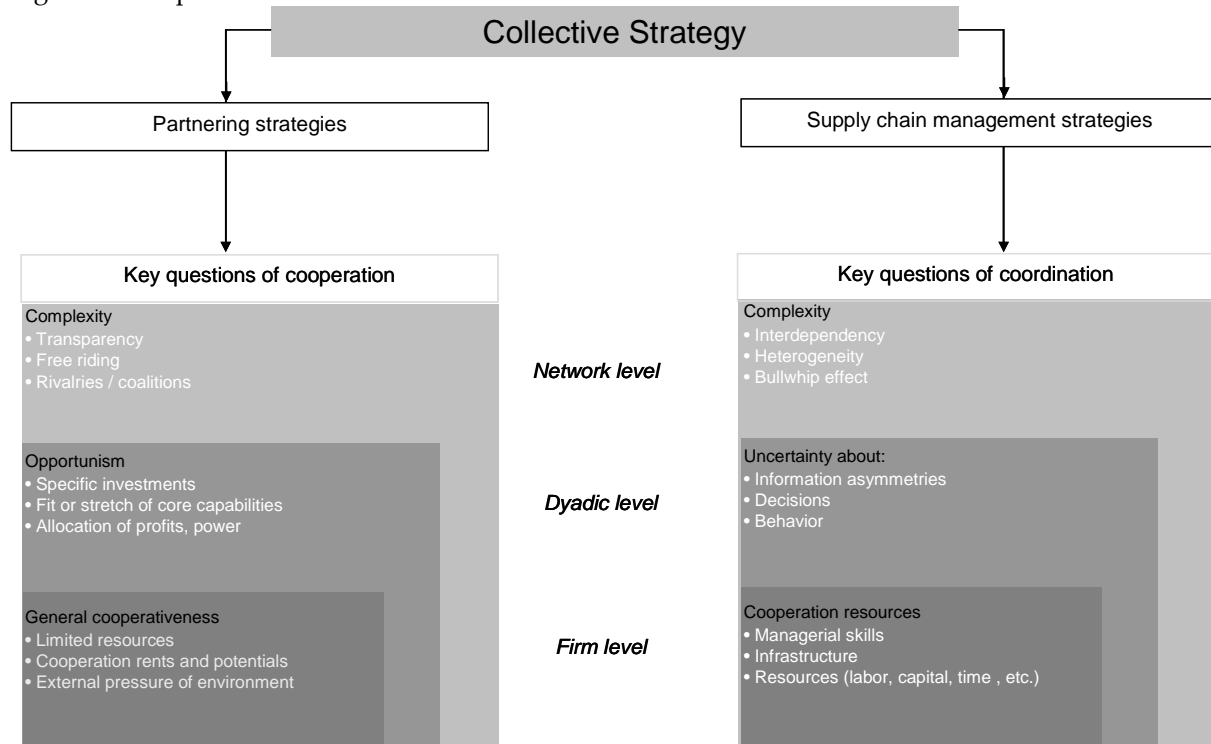
Once, the network has been created, the orchestrator or hub firm may deploy orchestration processes to realize network output, i.e. by managing resource mobility, network stability and development, and value creation and revenue appropriation. The network orchestration processes confer day-to-day supply chain coordination practices by the orchestrator.

We now switch to a second possible set of drivers, i.e. the initiating network partners. While the preceding general design variables focus on the role of the orchestrator himself in creating and running his network, also the **partners** in the network have to settle key questions of **strategic cooperation**, and **day-to-day coordination**. Moreover, different levels of aggregation bring about and need solution of specific questions. These aggregation levels are the network, the partner relationships (dyadic), and the firm level. When actors agree on the ambition to follow a collective strategy they must deal with the key questions of establishing cooperation between firms, and the key questions of daily coordination of primary processes, i.e. operational activities. This involves subsequently dealing with the diverse strategic interests, and, following realisation of the network, operational interests.

**Cooperation** relates to setting the stage, strategic deal-making and detailed designs to prevent problems like free riding and power abuse. It deals with partnering strategies, especially conflicts of interests between the partners. At network, bilateral and firm level one has to deal with, respectively, complexity, opportunism, and willingness to cooperate. Cooperation requires actors to bring in own capabilities and use capabilities of (still) independent actors willingly participating in networks. Actually, cooperating actors allocate and/or have access to resources in order to realise activities. Cooperation is achieved when independent firms willingly match their related plans in advance of commercial transactions (Richardson 1972, 890).



Figure 8.: Cooperation and coordination.



Source: Hanf & Dautzenberg, 2006.

**Coordination** focuses on the dynamic aspect of what gets exchanged in the network. It involves supply chain management strategies, i.e. the relatedness of primary activities of the independent partners. Coordination is realised at the tactical level. Here, the issues relate to complexity, uncertainties and cooperation resources. One has to deal with, e.g., complex logistic problems like the bullwhip effect at the level of the network, bilateral problems of information asymmetries and firm internal resource allocation. Coordination refers to the organising of functions and flows to increase the effectiveness of the activities, e.g. higher output. This may be achieved by planning, control, routines, mutual adjustment, and learning, and may result in mutual adjustment, and alignment (Lundgren, 1992, in: Axelsson & Easton, 1992, p.157).

## 9 Network governance

Dependent on the need for more radical change vs sharing (tacit) knowledge and system coherence, firms in networks may rely more on weak ties, respectively, on strong ties, and related forms of governance (Granovetter, 1973; Granovetter, 1983; Jones, et al. 1997). Firms have strong ties when they have enduring, intensive interactions. Firms have weak ties when they differ strongly, have no overlap in activities, and lack shared experiences. When innovation has to be executed by different partners who remain in tune than strong ties are most useful. Alternatively, when creativity, non-redundancy between partners, and novel combinations are key, even at the cost of mutual understanding, than weak ties will be more rewarding. The preferred forms of governance are related to the preferred ties, for strong ties come with integration, with full acquisition as the strongest form, while weak ties come with disintegrated forms of governance, such as non-equity alliances (Nooteboom, 1999, 52-3). Some reasons for preferring stronger ties and further integration, binding, are:

- Continuity to recoup specific investments
- Cognitive proximity to stimulate streamlined communication
- To realise incremental, but systemwide innovations
- To prevent opportunism, and knowledge spill-overs to competitors

Arguments for preferring weak ties and looser forms of integration, are as follows:

- Incentives for enhancing quality, efficiency and innovation, for survival
- Flexibility in coupling modules in different market-suitable configurations
- Diversity of experience and information yielding exploration new opportunities.

Governance of inter-organizational relationships is directed by relational competencies, which are typically not subject to property rights, i.e. tradable legal ownership. In very general terms, companies may be said to be made up of assets (e.g. buildings) positional advantages, and competencies (Nooteboom, 1999, 8-9). Assets are the resources of the firm. The positional advantages refer to efficient access to resources of other organizations, i.e. access to distribution channels, political acceptance, brand loyalty, and reputation. Positional advantages may result from deployed relational personal competencies, directed by organizational competencies, i.e. institutions. Next, institutions comprise of practices, procedures, rules, standards, norms of conduct, goals, roles models and rituals. Relational competencies determine the selection of the mode of governance, firm internally and between firms. The appropriate mix of instruments depends on the relevant goals and conditions.

There are four generic classes of governance (Nooteboom, 1999, 8-9, 82):

- Control: legal, bureaucratic, directive
- Value: motivation on the basis of self-interest, partner-value
- Binding: exit barriers, 'hostages', reputation
- Loyalty: trust-based motivation, clan, values/norms, family, friendship.

The instruments of governance related to these four classes have been listed. Value may be steered by the following instruments:

1. Invest in partner's resources, to improve the relationship
2. Lower the partner's value by devaluating his resources or shifting (contracted) volumes to other partners
3. Invest in own relative value for partner, to make him more dependent, enhancing his loyalty
4. Lower one's own value by non-investing
5. Appropriate the resources of (or similar to) a partner lowering the value of the relationship
6. Actively collaborate to gain knowledge spill-overs

Binding may be influenced by changing switching costs between partners:

7. Stop relation-specific investments, lowering own switching costs
8. Change the switching costs of partners vs your own, by demanding more guarantees for continuation of the relationship, claim refunds for your own specific investments, or sell part of your share in specific investments
9. The reverse case of offering more guarantees, or accepting higher share in specific investments.
10. Increase switching costs of partner by demanding a so-called hostage, i.e. things that are valuable only to the 'giver', here the partner
11. Increase your own switching costs by offering a hostage, i.e. things that are valuable only to you
12. Lower switching costs by investing in more flexible technologies or by developing common standards for contracts, techniques, products, etc.
13. Enhance switching costs by investing in reputation of trustworthiness

Opportunism may be influenced via changing the room for or intent towards opportunism:

14. Restrict freedom by tighter legal or other formal control, or increase monitoring, with related sanctions
15. The reverse case is by accepting constraints on one's own freedom
16. One increases one's freedom by reducing constraints or shielding off monitoring
17. One signals heightened risks of opportunism by showing antipathy, lack of interest, or lowering norms

Loyalty may be influenced by more non-business instruments

18. Bonding: invest in relationship, by joint social activities, friendships
19. Emphasize institutional ties, by becoming family-member of partner, accept consequences of social order and clans, stress norms of conduct
20. Invest in reputation of trustworthiness which enhances loyalty of partners
21. Shift from formal to social control

Next to choosing for binding (stronger ties) or more loosening (weaker ties) of partnerships and networks, some instruments indicate a more cooperative vs a more negative, hostile, or opportunistic way or interaction. Thereby one ends up in 4 categories, on preferred instrument of governance vis-a-vis partners (see table 9). The numbers relate to the above stated list of instruments:

	Binding	Loosening
Hostile, opportunistic	Tie down 6, 8, 10, 14	Pass on 2, 5, 16, 17
Cooperative	Attract 1, 3, 9, 11, 13, 15, 18, 19, 20	Set free 4, 7, 12, 21

Figure 9: governance strategies and instruments. Source: partly based on Nooteboom (1999), p.129-131.

Figure 9, above, clarifies for instruments with what approach it suits and how it impacts degrees of freedom, ties. We detail some instruments for the boxes, the numbers correspond with the listings above. In the box stated 'Tie down' one binds partners aggressively by increased monitoring, asking for hostages, or more guarantees and reducing his room for conduct. By 'Attract' one binds others by increasing mutual value, reinforcing bonds, and limiting one's room for opportunism. In the box of 'Pass on' the firm increases its own freedom at the cost of others, develop alternative relations, claims extra guarantees, and compensations, etc. In the box 'Set free' one facilitates switching for all, and open up options for all. Although the box attraction has become more detailed in research, it does not signal which behaviour is more often recognized nor recommended.

Networks may both facilitate access information, resources and opportunities, and it may help to overcome dilemmas of cooperation and task coordination (Garliulo & Benassi, 2000). See also the section on network design. We now turn to the issue not of network coordination but of task coordination. As with all network issues also on the coordination mechanisms there are many alternatives firms can choose from, so we have to simplify by listing them along specific dimensions. Network governance has to balancing arguments and forces for integration with arguments and forces for differentiation. Although a networks consist of autonomous partners who willingly cooperate, there is always the possibility of a misfit in planning and control. As a consequence, contracts will always be incomplete (planning) and cheating, opportunism or abuse of position is often possible (control). As a consequence, ongoing coordination systems in a network will rely on a mixture of coordination mechanisms (Miles & Snow, 1995)

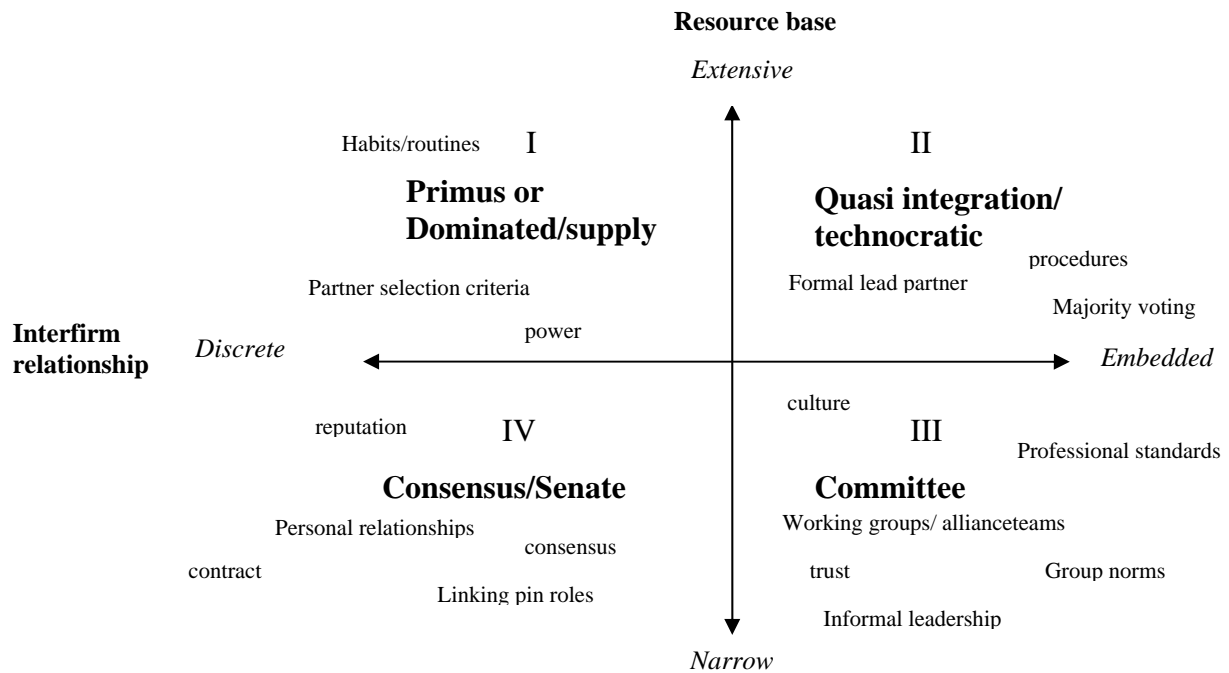


Figure 10.: Coordination mechanisms.

Figure 11, below, presented above groups a large variety of formal organizational structures, most of which represent interfirm relationships, some of these represent networks. The three prime categories are bureaucratic (contractual), social (informal), and property-related relationships (Ghisi, et al, 2006). In symmetric social relationships participants share the capacity of influencing decision-making. In non-symmetric social relationships one agent coordinates the formal contracts between the firms involved, but it does not control their mutual relationships. Bureaucratic relationships live by clear norms and contracts to regulate the product specifications, the network organization, and the mutual relationships. Property-related relationships typically have agreements with formalized rights of ownership. The subset of symmetric property-related relationships often focus on R&D.

With networks, especially for the subgroup supply chains, one has to recognize that uncertainty in one, typically downstream, relationship impacts other, typically upstream, relationships. Uncertainty in sales urges the shop to built relational elements, especially flexibility, into the relationship with the direct supplier. The supplier may use governance forms to secure upstream collaboration by manufacturers. Two of such mechanisms are ‘supplier qualification programs’ and ‘incentive structures’ (Wathne & Heide, 2004). It turns out that the ability to accommodate downstream flexibility needs increases with higher level supplier qualifications, upstream. A similar effect may be expected from relationship specific investments, e.g. a supply agreement, or return guarantee. In that respect, a two-sided pre-commitment by willingly accepting a lock-in on both sides of the supply relationship, will further reduce expropriation concerns, i.e. abuse of position (Wathne & Heide, 2004).

Next to planning and control issues in network governance, firms must be aware that poorly imposed laws and rules may hinder the progress of a network. First, poor enforcement makes legal governance expensive or even infeasible. Furthermore, when the governance is rather legalistic, enforcement costs may become excessive. Finally, in the contrary case of a relational or personal attitude, with a predominance of family, clan, or religious moral order than entry barriers will be high (Nooteboom, 1999, 79).

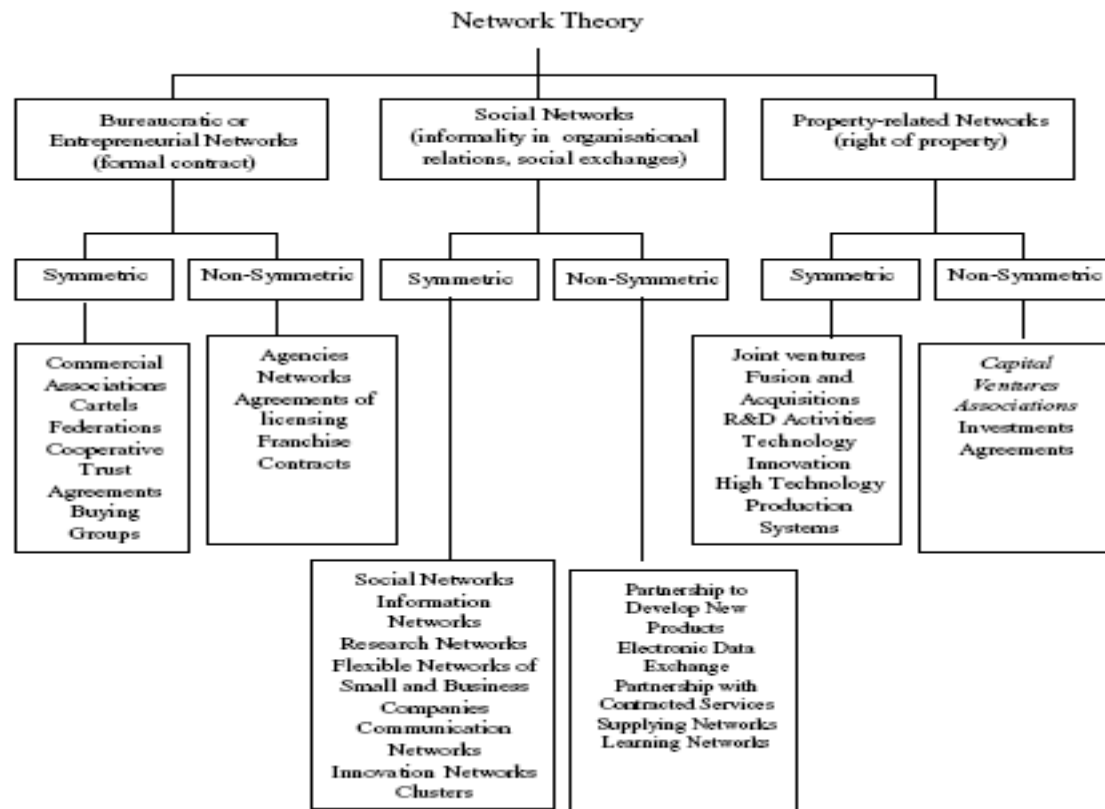


Figure 11. Source: Ghisi et al, 2006.

APPLICATION: Network governance (what coordination mechanisms?): Regarding coordination, the Dutch open marketplace is unique in facilitating a system that combines steering mechanisms that are value-oriented (e.g. motivation by self-interest), binding (e.g. 100% of deals via auction, or out), or relate to loyalty (values/norms, clan). FloriLog expanding across Europe cannot expect local firms to be attracted by loyalty-based steering-mechanisms, like social control. For example, note that there may be substantial (retaliation) costs for local firms switching to the open marketplace system, with uncertain local side-effects. In conformity to preceding sections, here governance should 'tie down' relationships, which acknowledges the prevalence of an opportunistic approach, and the need to make binding contracts (see figure 9). Complementary, also the governance strategy to 'attract' firms may be advised in order to stress a value-for-money orientation. But what coordination mechanisms are we talking about in the context of FloriLog? Although the situational settings are decisive, and the required level of detail beyond scope of literature, we may derive some suggestions on useful coordination mechanisms for FloriLog. To start with, the Dutch marketplace system has a reputation that you may exploit, for otherwise it may even work against you. Furthermore, one binds both local supplier and auction by offering quantity acceptance agreements, ICT-connections, and access to auction services, while prescribing standards and 100% supply guarantee over a minimum period. Next, the auction may also invest in explicit value-for-money for the local grower by offering collection logistics, while demanding a lump sum membership to raise switching costs against exit. From the governance lists, we also suggest active collaboration to gain knowledge spill-overs. A minimum efficient scale of supply and sales must jointly be achieved. Moreover, in the interest of especially traders, the auction may offer standard Dutch carts, while demanding a certain minimum sales volume of traders via this network. And finally, the auction may take the ownership of (rather standard) (cross-docking) buildings, offices, and equipment compatible to the home situation, with traders contracting for long-term usage of these tangibles. Note, that these governance items are derived from the combination of concepts and perceived running practices, which may be suggestive, but this listing is neither complete nor does it substitute for a detailed business plan.

## 10 Task coordination

Governance in networks may relate to management of the network and management in networks. Especially in larger firms we can distinguish between the functional areas purchasing, R&D, production, logistics, finance, and marketing (Lambert and Cooper, 2000). Management across the supply chain involves the following key processes (Lambert and Cooper, 2000):

- Order fulfillment
- Production flow
- Demand management
- Manufacturing flow mngt
- Procurement
- Returns
- Customer relationship mngt.
- Customer service mngt.
- Product development and valorization

The nine components of the related supply chain management spreads out over the continuum from the more physical to the more behavioral components: product flow facility structure; communication and information flow facility structure; organization structure; work flow/activity structure; planning and control methods; management methods; power and leadership structure; risk and reward structure; and culture & attitude (Lambert and Cooper, 2000). However, these processes and components are at the firm-to-firm level, not taking the network as a level of analysis, as with, e.g., virtual firms.

A still somewhat related understanding is the value chain format, where one may distinguish between basic trade processes and trade context processes (see figure 12). The more network-level, trade context may comprise of product representation, regulation, risk management, influence and dispute resolution.



Figure 12. Source: Pozzebon & Van Heck (2006).

When we focus on research that focuses on the adequate roles at network level, we arrive at two similar but different lists of network roles, before detailing cross-border network functions. The first list details the roles to be fulfilled to get a product or service realized, the second list focuses on the management roles typical for networks.

Already in 1986, Miles and Snow distinguish between the following 5 network roles (Miles & Snow, 1986, 65):

- network brokers
- suppliers
- producers
- distributors/marketeers
- researchers/designers

Different orientations of core firms will result in emphasizing different roles: The defender, comfortable with going concern activities, will perform the producers-role. A prospector, often called innovator, will excel in the designers-role. The analyser, balancing the (dis-)advantages of

consolidation and change, will emphasize the role of distributor/ marketer, and information brokerage. Typically for a network different firms have different roles. Interestingly, the authors emphasize that especially the above stated role of the network broker differs between different firms at one moment, and within a huge company over the years.

On the basis of extensive data, Knight and Harland (2005) arrived at clusters of linked management activities in supply networks. The clusters can be grouped in the following 6 separate supply chain management roles (Harland & Knight 2001; Harland, et al, 2001; Knight & Harland, 2005):

- co-ordinator (e.g. regular administration, temporary project mngt)
- network structuring agent and implementer (e.g. strategic mngt, leadership, monitor and improve competitiveness, restructure networks)
- advisor (e.g. policy development, business case preparation)
- broker of information (ICT expertise, knowledge mngt)
- broker of relationships (promote communication and change, and arrange performance issues)
- network structurer (e.g. lobbying, change mngt)
- innovation facilitator (e.g. product, service and process innovation, agenda setting).

An actor may hold various mngt roles. These authors did not find conflict resolution as a separate role, but it is subsumed under other roles. Surprisingly, the two lists of network roles differ strongly, but both contain roles of researcher and the network broker.

When we go from roles into more into operational production activities with, for example, quality control and buffering, we arrive at a various sets of bridging functions dependent on the exact position of the type of (sub-) contractor. As stated earlier Andersen and Christensen (2005) list 5 positions in international production flows, as presented in the typologies-section. Table 13 lists the related bridging functions, some of which may not be recognized in our case, as the writers focused on production environments. We leave it to the involved reader to recognize the relevant functions for the potted plants case.

Figure 13. bridging functions.

	Local integrator	Export base	Import base	International spanner	Global integrator
Functions towards supplier	Integrating	Integration	Monitoring	Testing	Inspecting
		Coordination	Absorbing	Scaling	Configuring
		Negotiating	Acquiring	Prototyping	Sourcing
			Buffer	Documentation	Controlling
Functions towards buyers	Buffering	Developing	Interacting	Materials knowledge	Applying
	Processing	Configuring	Designing	Documentation	Disseminating
	Flexibility	Inspecting	Applying	Problem solving	Developing
		sourcing	Disseminating	Customization	
Internal					Connecting
					Coordinating

Source: Derived from Andersen and Christensen, 2005.

The **local integrator** has a coordinating role that is mainly passive, optimizing custom-tailored flexibility and responsiveness. Depending on demand fluctuations the focal firm may buffer stocks or take over non-core processing tasks for clients. Finally, it integrates supplies. The need for small lots, and proximity to clients and suppliers hinders exit barriers for buyers.

An **export based firm** provides foreign buyers superior knowledge of and links them to local produce. Here, due to upstream embeddedness it has to balance the developing, and sourcing functions for the dependent foreign customer with the coordination and integration of the local network to create total (sub-)systems. Furthermore, the firm negotiates with buyers on behalf of the suppliers, while initially configuring the (sub-)system and later inspecting the suppliers on behalf of the foreign buyer(s). For

example, it may become responsible for assembly of the total keyboard and display console of a body scanner for a foreign client.

The **import based firm** links local buyers to global markets. It monitors actively specific international markets, it absorbs relevant knowledge and acquires and when necessary optimizes planning and inventory of scarce products for the local buyers. For local buyers the firm may interact to keep updated on local needs, designing products according to global standards, applying the design to source for and produce the product, and disseminate products and knowledge to the local buyer. Its economies of scale are evident in overseeing global trends and sourcing possibilities for local needs.

The **international spanner** has a complex set of functions, while lacking location-specific advantages. Often evolved from a former import or export base, the international spanner may retain some historical advantages, like networks, and reputation and information asymmetries, or it may as neutral firm balance different markets. For the buyers the firm may add knowledge of possible supplies, customizing the produce, and take care of international documentation and problems. Towards the suppliers it may facilitate prototyping, scaling, testing, and international documentation. The danger for this international spanner is disintermediation, for ICT makes shortening of the supply chain more attractive.

In contrast to the spanner, the **global integrator** has the much stronger position of a channel captain, combining strong points of both export and import base, and the international spanner: Coordinating different production streams and connecting many parties on a global basis via, e.g., its dedicated ERP-systems makes its position very strong. Towards the suppliers the functions involve configuring the products, inspecting sites and production, and controlling delivery and quality. Towards the buyers it may involve developing and distributing the produce, applying long term contracts. An example may be long term contracts by the former Danish firm Jensen and Jensen which has large seasonal contracts for leading clothing firms. It is a real orchestrator. We referred earlier to caases in the potted plants sector.

To conclude on network roles we focused on what are typical network-level roles? Operational level logistic processes require supply chain management, e.g. order fulfillment, but healthy supply networks require clusters of linked network level management roles; co-ordinator (administration), network implementer (leadership), advisor (policy development), information broker (ICT-expertise), relationship broker (communication), network structurer (change management), and innovation facilitator (agenda setting). A bridging focal firm may hold various of such bridging functions, dependent on the specific international supply chain.

## 11 How to get there? Management of change

Although most research on business networks has considered networks as given contexts, with FloriLog we have a case where **cooperation and the related network structure is the object of deliberate design** (lorenzoni, and Lipparini, 1999, in: Moller and Svahn, 2006, p.986). However, one must distinguish between different scenarios of network development. On the one hand, current orchestrators are expected to propagate, if not initiate, structure reinforcing industry events, like standardization regulation, by their network integrative mobilization of resources. It will strengthen their central position in the current business network, which is to be renewed. In the contrary case of radical structure-loosening events, e.g. internet-driven music distribution, new leaders may surface that use network changing mobilization to create new business networks. The (former) orchestrators are inclined to react, not to initiate, to such changes. We detail these items in this section.

Evidently, some networks are more established, more determined, inert or stable than others. Figure 14 presents, again, three ideal types of alternative networked value systems on a continuum of so-called levels of (external) determination. The network has a high level of determination when the value-creating activities and related resources are well-known (Moller & Svahn, 2006), and the useful



knowledge can be codified, and optimally exploited. This dimension of determination overlaps somewhat with the 5 types presented in par 5, as we will show here.

Networks that show high levels of determination may be called **running or current business networks**. They are stable value systems, that best suit defender strategies (Miles & Snow). In day-to-day contacts, issues of coordination prevail over issues of cooperation (see par.8). Although the literature is silent on that matter, we may derive that by the so-called 'current business networks' the authors probably have in mind something similar to the supply dominated /supply network configuration, discussed in par. 5. They have multi-tiered actors and clearly defined activities and resources. Regarding coordination of activities, think of lean manufacturing and assembly on demand. Especially modular or decomposable end products may be expected here, with highly specialized partners, requiring codified knowledge and transparent formats. An example is Dell's elaborate network. The orchestrator must willingly accept mutual dependencies. Furthermore, they should combine elements of strong cooperation with delegated self-organization to stimulate variety and specialization. In a current business network the network orchestrator typically has a strong purchasing position or sales position to bind self-interested firms to participate in his network and share knowledge.

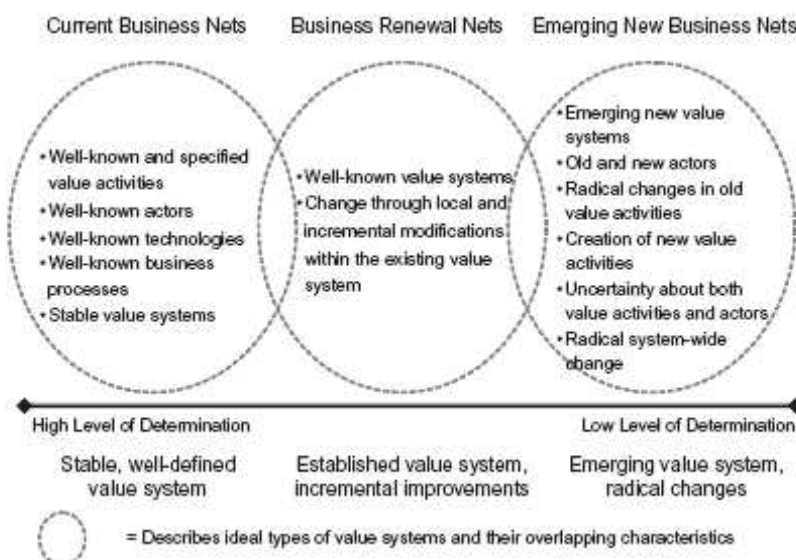


Figure 14. Value system continuum of value systems and corresponding net. Types Source; Moller & Svahn, 2006

The contrary position to current business networks is **emerging business network**, entailing low levels of (external) determination; radical changes in value creation activities comes with uncertainty about the necessary activities and suitable network partners. One may call them emerging or new business networks, for whole new value systems and related networks are created. For example, in the 1990s old actors from telecom and electronics had to transform rapidly and link up to newly emerging networks and value chains with its new firms in computers, mobiles, networks, software, new media, etc. Cooperation and corporate diplomacy prevailed over coordination issues. Nowadays new business networks emerge in, e.g., biofuels. No longer is the optimized exploitation of explicit knowledge critical, but the imagination and exploration of new business opportunities, which is typical for a prospector strategy (Miles & Snow, ). Problematic for (accelerating) progress of these networks is that ideas are often fuzzy, tacit and dispersed. Furthermore, specialization of actors makes it difficult to develop a systemic perspective encompassing the different evolving technologies and value activities. As a result, the value to the knowledge is very uncertain, while the potential value activities are ambiguous. When it comes to the earlier orchestrator, he must be able to balance strong and weak ties in the network, i.e. established and unorthodox relationships. He may expose himself to and explore new views, and technologies, but to benefit from it he must have absorptive capacity (996-7), and be able to transform itself. Moreover, to be able to develop a new business network, the

orchestrator must set the agenda, have attractive resources or knowledge, and create an meeting forum to deal with cooperation issues, and create an network identity. This happened when Nokia provided open access to part of its mobile's source code in order to propagate the creation of and stimulate interoperability for 3G mobile services.

Roughly in between the extreme types of current business network and emerging new business network, we position the archetype **business renewal network**, which prioritizes effectiveness. When networks prioritize effectiveness, taking a balanced position between exploration and exploitation, between new and established value activities, than product modifications or efficiency enhancing practices may lead to new opportunities (Moller & Svahn, 2006, p.990). Due to specialization one has to cooperate strongly as resources and capabilities necessary for renewal are dispersed among various partners. Business renewal networks suits also when a running network requires temporary upheaval to adjust systematically its activities to suit, e.g., a new ICT-platform. Here the critical capability is the bridging of structural holes, connecting different groups or different existing networks. To link different communities or networks one must develop or have the ability to cross professional, sectoral, or geographical sub-cultures. Renewal comes with collaborative learning, explicit goals and timetables. Problematic for collaborative learning are cultural distance, and organizational differences. The externalization of knowledge, i.e. from tacit to explicit, in a peer-to-peer setting may help to overcome such barriers (Nonaka & Takeuchi 1995, in Moller & Svahn, 2006, 995-6). The renewal network will benefit from previous partner relationships, alliance experience, relational governance structures, and the sharing of resulting benefits. The orchestrator should balance space, time and resources for exploration with exploitation, i.e. not losing turnover and efficiency.

Network structures may be the object of deliberate design entailing cooperation, but with major industry events one can expect different firms to mobilize resources, orchestrate the transition (Madhavan, et al, 1998, 439). Day-to-day-coordination or network orchestration may incrementally impact developmental paths of firms, but here we emphasize the disruption of coordinated activities, i.e. the realization of discontinuous changes, by the cooperative mobilization of resources following industry events. Think of industry events as widely recognized shocks, such as regulatory reform, radical technological innovation, or drastic changes in consumer preferences. Actors with a comparable history, activity, product and level of investment may, following an industry event, realize wholly different competitive advantages (Lundgren, 1992, in: Axelsson & Easton, 1992, p.157). Creating new or changing existing networks changes the interfirm relationships, and thus the positions of individual firms, the balance of powers in networks, and thus the performance of the firms involved.

When discussing major external industry events one must distinguish between **Network integrative mobilisation** and **Network changing mobilisation**. Mobilisation is 'the process of forming crowds, groups and associations and organizations for the pursuit of collective goals.' (Lundgren, 1992, in: Axelsson & Easton, 1992, p.159) Network integrative mobilisation relates to expanding the network of existing activities, similar to business renewal networks. For example, one may go international by opening an foreign sales office of a joint facility abroad. It is a market investment, when such mobilization of extra resource is done by partners from a current business network. When the group is convinced on the need to act there will be little problem to mobilize the required resources. The partners will focus on the allocation of the extra capacity, less on the investment costs itself. Network integrative mobilisation suits change processes where most of the skills, routines and practices currently in use have to be preserved.

**Network changing mobilisation** relates to combining previously unrelated (different or similar) activities (Lundgren, 1992, in: Axelsson & Easton, 1992, p.159-161), that may result in the emergence of new business networks. When the degree of perceived change is rather low, the leading firms will

have to face resistance from within the existing network. Compared to the preceding case they should anticipate to mobilize a larger share of the required resources internally. An initiator may need to re-orient towards less centrally positioned partners, to mobilize sufficient backing and resources, and realize changes. When the degree of perceived change is rather high, than outsiders may be first to mobilize resources, introduce new technologies, and openly compete for existing market positions.

As stated before the initiator and propagator of network changes is expected to be different with **structure reinforcing events** vs **structure-loosening events**. A structure reinforcing event may further centralize a network, consolidating the various network positions. An orchestrator, i.e. the more autonomous focal firm, holding a central, bridging position before an industry event, is expected to propagate the adaption to a structure reinforcing event, in order to consolidate its position (Gnyawali & Madhavan, 2001, 435). He will lead the network integrative mobilization of groups and resources. The introduction of certificates and standards may represent such an event that reinforces network positions. The business renewal network may be the feasible format. When the industry event reduces the uncertainty in the business environment, but the resources available to firms reduces, e.g. due to overcapacity, then the firm will be inclined to reduce the number and diversity of network ties. The consolidation of the steel industry in the 1980s was such a case (Koka, et al 2006, 727). In the alternative case that, again, uncertainty falls, but there is an increase in available resources then firms are inclined to strengthen the current network by deepening the current ties with trusted and crucial network partners, with the result that it increases barriers to newcomers (Koka, et al 2006, 729; Zaheer, et al. 1998).

With **structure-loosening events** it is more probably that orchestrators are reactive instead of taking the initiative, because they are tailored to fit not the new but the former market constellation (Gnyawali & Madhavan, 2001). Structure-loosening events are to the advantage of some of the less central firms or new entrants. At least temporarily, the network will be less centralized to adapt to the developments. The new market leader becomes successful because it is focused on the new setting following the market event. However, it is difficult to predict in an early stage which firm becomes the new orchestrator. Structure-loosening events come with increases in uncertainty. Older firms including the orchestrator will have to scrap investments, reposition the firm, invest in new technologies, and develop new relationships, knowledge, and routines. Present orchestrators and other central firms will become less attractive partners, unless they have the motivation, ability and resources to pick and nurture the new winners (Madhavan et al, 1998, 455). In the subcase that also resources are increasing or abundant, existing firms may try to ally with a substantial set of new possibilities. New ties will be created, and many so-called 'network options' may be taken. The network will increase in size and range of ties (Koka, et al 2006, 730). Here, one may think of Cisco acting as venture capitalist to firms working on new technologies. In various industries, however, uncertainty comes with reduced resources. The lack of sufficient resources deepens dependency on critical resources, and for those unable to replace outdated ties by ties with winning partners will end up out of competition. An example, is the radical change in the Swiss watchmaking industry, due to the introduction of flexible production technologies and marketing practices, which brought about the new orchestrator Swatch (Jacobides & Winter, 2005). Such impoverished former orchestrators may at best remain competitive in the market, by following the emerging new market leader (Huygens, 1999). To conclude, unless timely redirection of resources is realized by the current orchestrator, it is probable that with major structure-loosening events new business networks emerge, with a new orchestrator, successful in network changing mobilization.

APPLICATION: Management of change (what mobilization strategy?). When it comes to managing towards the new setting, we observe that the enlargement of the EU and various market developments (in production, changing market shares, changing customer segments) are **structure loosening events**, increasing uncertainty, loosening power positions, which is to the advantage of ambitious decentralized firms and entrants. Indeed, relative outsiders (have) take(n) the initiative to

explore opportunities, because they may suit the new constellation better. Former insiders and any orchestrator are typically re-active to such events. They need to reposition and invest in up to date business concepts and pick out the winners. A problem for leading firms that really want to renew the Dutch horticultural networks is that they have to face resistance from within the sector, because the degree of **perceived sectoral change**, i.e. the urgency-factor, is rather low. FloriLog wants to roll out the Dutch open-marketplace model, but, as time goes by, it does not seem to be looking for a new value system with new activities, a radical change of system. It prefers to expand the known services to new markets, in new countries: The value chains are known, and there are adjustments within the existing system. **Network integrative mobilization** that expands the network to encompass foreign firms may result in **renewing the business network** (the middle type, figure 14). Moreover, traders, combined or individually, are already repositioning themselves in these foreign markets. As a result, but not part of the assigned task, the writers foresee different implications at network level than at firm level. At collective level one must beware not to be used, nor to frustrate, but facilitate the initiatives at firm-level to the advantage of the collective. This should result in renewing the business network.

## 12 Conclusions

FloriLog is ambitious: by and large, for potted plants (PP) the ambition is to roll out in Europe the Dutch open-marketplace and trading system, starting in Germany. As one of the three Work Packages (WP) the research sections under WP3 orient at the question: How to organize the preferred business model, considering the wish for network orchestration? Being part of WP3, and conform the assignment, this scientific paper focussed on the following question: What new organizational forms can be implemented in the Dutch PP-sector to foster its ambition?

In this concluding section we restrict ourselves to the application of the earlier explained concepts, especially using the sections on network positioning (what is our network position?), networks format (what is the most useful network type?), network governance (what coordination mechanisms?), network roles (What are typical network-level roles?), and management of change (what network change strategy?). Dependent on the issue at stake, different networks labels suit the case.

- Network positioning (What is our network position?)

Firms from different segments in the potted plant chain gather at the platform FloriLog. They seek new views, inspiration and shared ambition, and facilitate groups of entrepreneurs to realize it. At **product level**, and in comparison to other industries, may be characterized as a **supply network of functional products** with a at most **moderate degree of product complexity** (see figure 1). The product complexity in PP relates to product quality sustainability, and the realisation of distribution channel-specific assortments. This suits a competitive priority on cost by high volume production and services.

At **network level**, the ambition of FloriLog is to expand the open Dutch auction-and-trade network by spreading out trading activities over Europe and attracting local (production) firms. This may be labeled as a **routinized network** (figure 2, right side). In such networks process innovations and stock minimization dominates product innovation; prime activities at the network level of such routinized supply networks is equipment integration and information processing, e.g. carrier standardization and dedicated ICT-networks. However, who drives this network? Note first, that in FloriLog the emphasis is not on the Dutch local growers, who are known for their elaborate collaborations, but on the auctions, traders, and transporters. An orchestrator, i.e. the company in the driver's seat, should have a high degree of influence on the supply network. With such a dominant focal firm should come network-level partner selection and network-level decision-making (figure 2, lower-right side). Individual trading and transportation firms may then join the ambition of expanding the network, in

order to increase their business by acknowledging and focusing the enormous amount of 62% of PP-trade in Europe not running via the Dutch marketplace and trading system (Scheer, et al, 2007). However, so far progress in FloriLog signals an urgent and **ongoing need to activate and motivate** firms within the current network. That does not characterize network orchestration, but, to the contrary, a group of **firms that have to cope with a network**, are subject to it (figure 2, top-right area). As a corollary, it suits to discuss at network level also the **allocation of costs and benefits**; what is shared and what is individually realized? As a conclusion, and taking the latter characterization, one may derive that when the open-marketplace and trading system wants to spread out and attract local firms, than the value proposition must become prioritized: **what's in it for me, as (local) firm?**

- Networks format (what is the useful network type?)

Regarding the five network types finally arrived at in this paper, one should decide (1) on the extend of the (potentially) shared resource bases (wide or small), and (2) whether one takes the network as an economic tool or an organic unity (loosely-coupled firms vs structurally embedded firms). The information sharing within FloriLog turns out to be more limited than may be expected in networks with structurally embedded firms. Regarding such interfirm relationships the outsider in the PP-sector observes **discrete firms** who perceive each other firms primarily as **competitors** in appropriating a share of the value added. At least according to the literature, regular top-level meetings are necessary to deal with mutual distrust. The project tends to realize **limited collaboration** on the resource bases. The emphasis is primarily on logistics. We conclude that FloriLog suits the **consensus-type of network** (figure 4, lower-left area). In such a consensus-requiring network the focus is on efficiency enhancement, i.e. cost reductions in a relatively simple setting. Such a collaboration will have a **narrow scope**, e.g. joint transport purchasing. We derive, extrapolating progress in FloriLog, that the future collaboration is best based on a limited scope with **focused value-for-money activities** for individual (local) firms.

- Network governance (what coordination mechanisms?)

Regarding coordination, the Dutch open marketplace and trading system is unique in facilitating a system that combines steering mechanisms that are either value-oriented (e.g. motivation by self-interest), stakeholder binding (e.g. 100% of deals via auction, or out), or relate to loyalty (values/norms, family). FloriLog, expanding across Europe, cannot expect local firms to be attracted by loyalty-based steering-mechanisms, such as social control.

Step, for a moment, in the shoes of a local PP-producing firm pondering the switch to the Dutch system. Evidently, they have the possibility to specialize in product and functions, producing larger volumes at international standards, delegate the provision of carts, and serve a wider set of (end) customers, while reducing payment risks, etc. In contrast however, that firm knows what it has, not what it may gain. The typical local firm has no track record with this Dutch system, may face (social) exclusion, is not specialized yet nor equipped for it, and may face possible commercial retaliation-costs, while current business, revenues and relationships are at least clear. The same goes for trading and transportation firms who have their stakes, history and running business but need incentives to take the efforts to join the ambition of capturing part of the enormous local-for-local trade outside Holland. In conformity to preceding sections, firms should **'tie down' relationships**, which acknowledges **the prevalence of an opportunistic approach**, and the need to make binding contracts (see figure 9). Complementary, also the governance strategy to **'attract' firms** may be advised in order to **stress a value-for-money orientation**.

But exactly what coordination mechanisms are we talking about in the context of FloriLog? Although the situational settings are really decisive, and the required level of detail is beyond scope of the globally oriented literature, we present some suggestions for FloriLog. To start with, the Dutch marketplace system has a **reputation** that you should exploit, for when neglected it may even work against you. Furthermore, showing the size and wide range of distribution channels that is delivered,

FloriLog may bind both local suppliers by **offering** quantity acceptance agreements, Dutch settlement and payment guarantees, ICT-connections, and **access** to auction and mediation services, while **prescribing** standards and 100% supply guarantee over a minimum period. Next, the Dutch system as a whole may also invest in explicit value-for-money for the local grower by **offering collection logistics and container transport means**, while demanding a lump sum membership to **raise switching costs** against exit. From the lists of coordination mechanisms we also suggest active collaboration to gain knowledge spill-overs. A **minimum efficient scale** of supply and sales must jointly be achieved by all firms in the project. Moreover, creating access to a large number of local suppliers to traders and transporters, FloriLog may demand a certain minimum sales volume of traders running via this hub. And finally, FloriLog or the auction itself may **take the ownership** of (rather standard) (cross-docking) buildings, offices, and equipment compatible to the home situation, with traders and transporters **contracting for long-term usage** of these tangibles. Note, that these governance items are derived from the combination of concepts and perceived running practices, which may be suggestive, but this listing is neither complete nor does it substitute for a **detailed business plan**. This requires additional research. So we find that there are various coordination mechanisms to bind producing and trading firms in the projected international network.

- Network roles (What typical network-level roles?)

Operational level logistic processes require supply chain management, e.g. order fulfillment, but healthy supply networks require clusters of linked **network level management roles**; co-ordinator (administration), network implementer (leadership), advisor (policy development), information broker (ICT-expertise), relationship broker (communication), network structurer (change management), and innovation facilitator (agenda setting). A bridging focal firm may hold various of such bridging functions, dependent on the specific international supply chain.

- Management of change (what network change strategy?)

Here the sensitive issue is on the potential for changing running networks, when the current format of the network is the **consensus-type network** (see above). One should be clear on emphasizing network consolidation versus fundamental transformation (see figure 14). We observe that the enlargement of the EU and various market developments (in production, changing market shares, shifts between country-customer segments) are **structure loosening events**. Such events increase uncertainty, and weaken power positions, what is to the advantage of ambitious decentralized firms and new entrants. In Europe relative outsiders, e.g. from Italy, have taken the initiative to explore new chain-related opportunities. They go for network changing mobilisation of resources and actors, combining previously unrelated activities. Former insiders and any orchestrator are expected to be typically reactive to such events. But when the field is in fundamental transformation, in order to remain competitive current actors need to reposition, invest in up to date business concepts and pick out the winners. However, we see mergers between equals (auctions, traders) which is typical suited for the contrary case of **structure reinforcing events**, such as consolidation in the retail-segment. Such events may be in the interest of key players, in the center of networks. Related is a problem for leading firms that really want to transform the Dutch PP-networks: they have to face resistance from within the sector, because the **degree of perceived sectoral change**, i.e. the urgency-factor, is **rather low**. Especially in trade and transport the vested interests and ambitions of individual firms, of different size, in the direction of specific distribution channels, traded produce, and countries, are rather diverse (Splinter, et al, LEI 2007). The overall impact of the two types of events is seldom clear to insiders. FloriLog wants to roll out the Dutch open-marketplace model, but it does not seem to be looking for a new value system, i.e. a radical change of system. FloriLog partners seem to prefer to expand some of the known services to new countries: The value chains are known, and one is looking for adjustments, expanding the existing system. This **network integrative mobilization** expands the Dutch marketplace network to encompass foreign firms. To realize this as a group will probably demand maximum efforts of the current **consensus-type of network** without a orchestrator. Only

with a strong eagerness to change at group-level will this result in the preferred **renewal of the business network** (the middle type, figure 14.). Moreover, at individual or subgroup level firms are already (re-)positioning themselves, working individually towards the creation of new business networks abroad. At collective level one must beware not to be used, nor to frustrate, but facilitate the initiatives at firm-level to the advantage of the collective. Together this picture clarifies the difficulty to balance the interests of firms in favor of the consensus-type network vs repositioning individual firms transforming the network bottom-up. Nevertheless, it may be clear that long-term growth of individual Dutch firms in the integrating EU, requires collaboration of auctions, traders, and transporters, typically too small to succeed individually, that should be willing to renew the current open-marketplace and trading system into a TradePoint Europe, and realize flywheel effects in appropriating foreign exports and Local-for-Local PP-business.

This concluding section of the positioning paper of WP3 of FloriLog presented the application of the concepts as stated earlier in the paper. The paper thereby answer the question on new organizational forms to implement in Dutch PP-horticulture to foster its ambition. The writers were not asked to investigate Key Success Factors/USPs nor to develop the business plan. That requires substantial additional work probably involving stakeholders research, local investigations on value-for-money-propositions, using the and substantial change management activities. We conclude that, as of today, the consensus-type of network urges for limited scope collaboration, with focused value-for-money activities for individual (local) firms. Only a strong commitment of a substantial amount of firms may result in the timely renewal of the current network that is to the interest of each and all. Especially in absence of an evident orchestrator, those in favor of the European ambition of FloriLog should make explicit the business case, in particular answering the following question; **what's in it for me as (foreign) firm?**

## References

- Albers, S. 2005. *The Design of Alliance Governance Systems*, Germany: Cologne. PhD.
- Albers, S. 2007. Configurations of Alliance Governance Systems, Paper presented at the AOM-annual conference 2007.
- Anderson, J., Hakansson, H., & Johanson, J. 1994. Dyadic business relationships' within a business network context. *Journal of Marketing*, 58 (4), 1-15.
- Axelsson, B. & Easton, G., 1992. *Industrial Networks. A new view of reality*. London: Routledge
- Brass, D.J., Galaskiewicz, Greve, H.R., & Tsai, W. 2004. Taking stock of networks and organizations: a multilevel perspective. *Academy of Management Journal* 47, 6: 795-817.
- Contractor, N.S., Wasserman, S., & Faust, K. 2006. Testing Multitheoretical, Multilevel Hypothese about organizational networks: An Analytical Framework and Empirical Example. *Academy of Management Review*, 31 (3), 691-703.
- Croom, S., Romano, P. & Giannakis, M. 2000. Supply chain management: an analytical framework for critical literature review, *European Journal of Purchasing & Supply Management*, 6, 67-83.
- Gargiulo, M., & Benassi, M.. 2000. Trapped in your own net? Network cohesion structural holes, and the adaptation of social capital. *Organization Science*, 11 (2), 183-196
- Ghisi F.A. & Martinelli, D.P. 2006. Systemic view of interorganisational relationships: An analysis of business networks. *Systemic Practice and Action Research*, 19 (5), 461-473.
- Gnyawali, D.R., & Madhavan, R., 2001 Cooperative networks and competitive dynamics: a structural embeddedness perspective. *Academy of Management Review*, 26 (3), 431-445.

- Granovetter, M.S. 1973. The Strength of Weak Ties. *The American Journal of Sociology*, 78, 1360-1380.
- Granovetter, M.S. 1983. The strength of weak ties: a network theory revisited. *Sociological Theory*, 1, 201-233.
- Granovetter, M.S. 1985. Economic Action and Social Structure: the problem of embeddedness. *The American Journal of Sociology*, 91 (3), 481-510
- Grant, R. 1991. The Resource-based theory of competitive advantage: implications for strategy formulation. *Harvard Business Review*.
- Harland, C.M., & Knight, L.A.. 2001. Supply Network Strategy: Role and Competence management. *International Journal of operations and Production Management*. 21 (4), 476-489.
- Harland, C.M., Lamming, R.C., Zheng, J., & Johnsen, T.E. 2001. A Taxonomy of Supply Networks. *Journal of Supply Chain Management*, 21-27
- Hagedoorn, J. 2006. Understanding the cross-level embeddedness of interfirm partnership formation. *Academy of Management Review*, 31 (3), 670-680
- Hanf, J. & Dautzenberg, K.. 2006. A Theoretical Framework of Chain Management. *Journal on Chain and Network Sciences*, 6 (2), 79-94.
- Hakansson H. & Snehota, I. (Eds.) 1995. *Developing relationships in Business Networks*. Boston: International Thomson Press
- Jacobides, M.G. & Winter, S.G., 2005. The co-evolution of capabilities and transaction costs: explaining the institutional structure of production. *Strategic Management Journal*. 26 (5) 395-413
- Jones, C., Hesterly, W.S., & Borgatti, P. 1997. A General Theory of Network Governance: Exchange Conditions and Social mechanisms. *The Academy of Management Review*, 22(4), 911-945.
- Koka, B.R., Madhavan, R., & Prescott, J.E. 2006. The evolution of interfirm networks: environmental effects on patterns of network change. *Academy of Management Review*. 31 (3) 721-737.
- Lamming, R.C., Johnsen, T.E., Zheng, J. & Harland, C.M. 2000, An Initial Classification of Supply Networks. *International Journal of Production and Operations Management*, 20 (6) 675-691.
- Lundgren, A., 1992. coordination and mobilization processes in industrial networks. in: Exelsson, B. & Easton, G. (1992), 144-165.
- Madhavan, R., Koka, B.R., Prescott, J.E., 1998 Networks in transition: How industry events (re)shape interfirm relationships. *Strategic Management Journal*, 19 (5) 439-459.
- Man, A.P. de. 2004. *The network economy: strategy, structure and management*. Aldershot (UK): Edward Elgar Publishing,
- McGee, J. & Thomas, H. 1986. Strategic groups: theory, research & taxonomy. *Strategic Management Journal*, 7 (2) 141-160.
- Meyer, R. 2007. *Mapping the Mind of the Strategist. A Quantative methodology for measuring the strategic beliefs of executives*, Rotterdam: ERIM. PhD
- Miles, R. & Snow, C. 1986. Network Organizations: New Concepts for New Forms. *California Management Review*.
- Miles, R. & Snow, C. 1995. The new network firm. *Organization Dynamics*, 23 (4) 5-18
- Dhanaraj, C. & Parkhe, A 2006. Orchestrating innovation networks. *Academy of Management Review*, 31 (3), 659-669.
- Möller, K. & Svahn, S. 2003. Managing Strategic Nets: A Capability perspective. *Marketing Theory*. 3 (2), 201-226.
- Nooteboom, B. 1999. *Inter-firm alliances; Analysis and design*, London: Routledge.



- Porter M.E. 1980. *Competitive Strategy: Techniques for Analyzing Industries and Competitors*, Free Press, New York.
- Porter, M.E. 1998. *On Competition*. Harvard: Harvard Business School Press
- Ritter, T., Wilkinson, I.F., & Johnston, W.J. 2004. Managing in Complex networks. *Industrial Marketing Management*, 33, 175-183.
- Sacchetti S. & Sugden, R. 2003. The governance of networks and economic power: The nature and impact of subcontracting relationships. *Journal of Economic Surveys*, 17 (5): 669-691.
- Snijders, H., Jacobs, D.& Vrolijk, H.2007. *The economic power of agrifood in the Netherlands* [De economische kracht van agrofood in Nederland], The Hague: SMO.
- Snow, C., Miles, R. & Coleman, H. 1992. Managing twenty-first century network Organizations. *Organizational Dynamics*, 5-20.
- Todeva E. 2006. *Business Networks: Strategy and Structure*. London: Routledge.
- Toms, S. & Filatotchev, I. 2004. Corporate Governance, Business Strategy and the Dynamics of Networks: A Theoretical model and Application to the British Cotton Industry, 1830-1980. *Organization Studies*, 25 (4), 629-651
- Uzzi, B. 1997. Social Structure and Competition in Interfirm Networks: The Paradox of Embeddedness. *Administrative Science Quarterly*, 42, 35-67.
- Wit, B.de & Meyer,R. 1998, 2004. *Strategy: context, content, & process*. Thomson publishers
- Zaheer, A., McEvily, B., & Perrone, V. 1998. Does trust matter? Exploring the effects of interorganizational and interpersonal trust on performance. *Organization Science*, 9(2): 141-159.