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Preface

The Construction, Forms, and Consequences of Industry Networks

Industry networks are a currently popular variation on the old idea of industrial districts (Grabher, 1993; Harrison, 1992). We denote as an *industry network* a set of organizations (e.g., firms, unions, state agencies, associations) that have developed recurring ties (e.g., buyer–supplier relationships, joint activities, informational ties) when serving a particular market. Industry networks thus delineate clusters of organizations that work together more intensely than with other organizations within the industry. Perhaps the most widely publicized examples of such industry networks originated in the apparel, tile, and machine-tool industries of northern Italy (Brusco, 1982; Lazerson, 1988, 1993), the electronics industries of Silicon Valley (California) and Route 128 (Massachusetts) (Saxenian, 1994), the U.S. automotive industry (Nohria and García Pont, 1991; Helper, 1991), the financial services sector in the City of London (Amin and Thrift, 1992), and the machine-tools and automotive industries of southern Germany (Herrigel, 1993; Lane and Bachmann, 1996). While industry networks are by no means a

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new phenomenon, several observers have argued that since the 1980s they have become more prevalent and more important for the strategic management and organization of firms (Alter and Hage, 1993; Contractor and Lorange, 1988; Jarillo, 1993; Miles and Snow, 1986; Mitchell and Singh, 1996; Ohmae, 1989; Porter and Fuller, 1986).

This issue presents empirical research on interorganizational networking relations in a number of different industries that highlights three related questions:

1. Why and how organizations do (socially) construct and reshape industry networks?
2. How and with which outcomes do they structure and govern their networking relationships in different ways?
3. How and why membership can in an industry network foster learning and innovation?

Of course, as the following articles illustrate, these three questions should not be viewed in isolation because the gains that organizations derive from their membership in an industry network—whether improved learning and innovation or other benefits—depend to a large extent on the particular mix of interests that the organizations try to serve with their network membership, and on the way in which they organize their collaboration. While this general view is quite obvious, research is only beginning to specify in greater detail how exactly these factors and their interaction create particular network structures and outcomes under different circumstances (e.g., Ebers, 1997a; Grandori, forthcoming; Jarillo, 1993; Nohria and Eccles, 1992; Nooteboom, 1997). This issue contributes to this literature.

A more detailed analysis of the above three questions warrants serious attention for a number of reasons. These questions arguably are the central ones that concern research on interorganizational networks, as they pertain to why, when, how, and to which effects organizations engage in organizational networking arrangements. Specifically, these are important questions because the pattern of industry–network linkages can have important implications for the goal accomplishment of individual network members and their collective welfare—for example for their competitiveness, but also for the welfare of their customers or other stakeholders. If some ways of networking and some collective strategies are more effective and efficient than others, the organizations that adopt these structures gain competitive advantage vis-à-vis

their non- or differently connected rivals. It is therefore important to examine which forms of networking, under which circumstances, lead to which results.

Competitive advantage through networking can ensue from various sources (see Alter and Hage, 1993; Contractor and Lorange, 1988; Jarillo, 1993; Zajac and Olsen, 1993). For example, it can be produced by mutual learning that leads to improved and faster product development and thus first-mover advantages, a theme that is prominent in the articles in this issue by Oliver and Liebeskind, Becker and Peters, and Brown and Hendry. It can arise from a strategy of cospecialization by which member firms carve out new profitable product-market niches; it can also result from a better information flow and improved coordination of resource flows among network members that lead to cost and time savings; it can originate from economies of scale that can be achieved through joint sourcing agreements or joint basic research efforts, as pointed out in the article by Dussauge and Garrette; and it can also follow from establishing high barriers to entry to a market, or from strategic coordination among competitors, both means of protecting the long-term rentability of network members' investments (Porter and Fuller, 1986).

While these potential benefits of establishing industry networks have been acknowledged before, the articles in this issue also provide a number of insights that so far have not received the attention they deserve. As the papers by Araujo and Brito and Sydow, van Well, and Windeler nicely illustrate, the benefits of networking may accrue collectively, that is, to all network members. However, depending on the power symmetry of the network relations, they may also be distributed unevenly and may thus benefit some network members more than others. Moreover, the outcomes of networking can be evaluated differently by different parties. What is a competitive advantage from the point of view of a colluding group of organizations may be seen by customers and regulators as anticompetitive and welfare-reducing behavior. Likewise, a manufacturer may view joint in-house product development with its suppliers as a cost-efficient and effective networking arrangement, while for the suppliers such arrangement can lead to unwanted cost and profit transparency and to lower margins. We therefore not only have to be careful to focus on the possible benefits of industry networks but should also consider their possible detrimental effects, both for the organizations involved and beyond

(Ebers and Grandori, 1997), while carefully scrutinizing the possibly divergent outcomes for the parties concerned.

Moreover, the following articles offer important insights regarding two related issues. First, they show how the actors' shared (and divergent) cognitive schemes and dependencies lead to the construction (and destruction) of particular networking relationships within an industry. Second, they outline why and how different governance forms of interorganizational networking relationships lead to specific outcomes; in particular, several articles specify why and how specific interorganizational networking relationships may foster or impede learning and innovation.

An improved understanding of industry networks offers important policy implications. If industry networks per se, or particular forms of networking, have implications, for instance, for the competitiveness of network members and their industries, or for the contestability of markets, macroeconomic policy as well as industrial and regional development policies, among others, would benefit from enhanced knowledge (Semlinger, 1993; Sengenberger, 1993; Staber, Schaefer, and Sharma, 1996). Moreover, from the point of view of individual organizational actors, an improved understanding of the processes, forms, and outcomes of networking provides important guidelines for strategizing and organizing.

We now briefly highlight the three areas of research around which this issue is organized and summarize the particular contributions that the articles assembled here make to each of these areas. In the conclusion, we address a question that is raised by this collection, namely, the significance of industry-related factors for networking, and present some challenges for future research.

The social construction of industry networks

Thanks to a large body of earlier research on industry networks, we have a fairly clear idea of what motivates organizations to cluster into industry networks (for overviews, see Alter and Hage, 1993; Doeringer and Terkla, 1996; Ebers, 1997b; Jarillo, 1993; Oliver, 1990). Research has identified as important rationales for networking, technology development, increased market power, market development, reduction of uncertainty, and cost savings, among others (Glaister and Buckley, 1996; Harrigan, 1985; Contractor and Lorange, 1988). These motives

refer to a large extent to advantages emanating from the establishment and design of exchange relationships among firms within common production channels. However, as Doeringer and Terkla (1996) pointed out, two other forces that extend beyond this realm also promote the clustering of organizations in industry networks, namely, advantages drawn from local factor markets and those derived from relationships with organizations outside the immediate value chain of an industry, such as trade associations, government agencies, financial institutions, universities, and unions. With regard to the former force, local and regional markets for technology and labor may extend the membership of an industry network beyond the confines of a single industry. This is because the possibility of technology transfers and spillovers as well as a regional work force with special skills or attitudes can make it advantageous for firms to establish ties with partners from other industries in order to be able to tap, or jointly develop, valuable technological know-how or human resources (Porter, 1990). With regard to relationships with institutional actors outside their immediate industry, firms are motivated to engage in such networking because social ties within a community or more formal relationships—for instance, with local banks or state agencies—can provide them with important information and access to tangible and intangible resources that are crucial for success (Lane and Bachmann, 1996; Herrigel, 1995; Whitley and Kristensen, 1997).

While these motives identify important driving forces that can lead to the construction of industry networks, alone they cannot sufficiently explain why networks are formed. The picture is still incomplete for at least two reasons. First, whether or not actors can fulfill their motivations depends on the prevalent circumstances: It may be easier to reach one's goals in some situations than in others. Therefore, over and above the motivations, we have to determine which particular conditions facilitate and constrain the establishment of industry networks. Second, actors could potentially fulfill the noted motivations by means other than networking, for example, through acquisitions or through different forms of networking. Therefore, we have to illuminate under which specific conditions and why certain forms of networking will be chosen over other means for reaching the noted goals.

It would be beyond the scope of this preface to provide a detailed discussion of research bearing on the above questions (see Ebers, 1997b; Whitley and Kristensen, 1997), except for one recent example

of such research. Oliver (1997), in her study of networking in the Canadian construction industry, found that linkages to organizations within the institutional environment contributed positively to the performance of construction firms when the institutional environment imposed strong pressures on the firms, whereas intraindustry linkages were more crucial for performance when access to scarce resources was especially problematic for the construction firms.

The articles in this issue shed further light on the above questions from different angles. Araujo and Brito as well as Sydow, van Well, and Windeler, for example, emphasize important contingencies of industry networks that so far have received fairly little attention. Moreover, these authors outline in considerable detail how industry networks are constructed and changed through a complex interplay of actor motives and structural contingencies.

Thus, Luis Araujo and Carlos Brito present a detailed and impressive case study on the networks that govern the Portuguese port wine sector. Their study reconstructs the circumstances, reasons, actor strategies, and resources that, at a particular time, led to a significant change in both the structure of the networks and the outcomes for the involved parties. Specifically, they analyze the issue of excess stocks in the port wine sector and the emergence, consolidation, and results of a collective action aimed at resolving this issue. With regard to theory building, their study focuses on the role of collective action in promoting change in the constitutional ordering of a network.

Based on the evidence from their case study, these authors argue that changes in network structures are driven by the capacity of actors to utilize or transform the conditions of actions afforded by their structural position in a series of overlapping networks, in accordance with their individual or collective interests and commitments. In much the same vein as Sydow, van Well, and Windeler (also in this issue), Araujo and Brito suggest a duality of action and structure, where both are constantly being jointly enacted and reproduced. Moreover, Araujo and Brito highlight the importance of multilevel interaction processes, within and across distinct webs of relationships often mediated by institutionalized collective actors and informal issue-based nets, which aggregate and mobilize shared interests and lead to novel forms of networking. This particular finding is further supported by the research by Oliver and Liebeskind, who report similar multilevel interaction processes among networks within the biotechnology industry.

Applying the perspective of structuration theory (Giddens, 1984), Jörg Sydow, Bennet van Well, and Arnold Windeler describe in considerable detail how particular structures of horizontal and vertical networking have evolved in the German financial-services industry. These authors highlight a number of factors that account for the observed network structures. Like Araujo and Brito, they assign particular importance to the perceptions, taken-for-granted assumptions, and shared understandings that inform and guide actor behavior. For instance, insurance brokers typically view membership, or non-membership, in a particular industry association as a valid indicator of a broker's trustworthiness and business conduct. This, in turn, influences their willingness to establish ties with particular brokers and the conditions that they apply when conducting business with them.

While these authors spell out how particular cognitive schemes guide action and lead to specific network structures, they also emphasize the recursive process of densely connected networks leading to similar perceptions and understandings among their members, thereby reproducing and stabilizing the cognitive schemes held by network members. On the basis of such reasoning, Sydow, van Well, and Windeler explain, for example, how brokers unintentionally reproduce their relatively weak network position, as their "*Leitbild*" (ideal) of entrepreneurial autonomy keeps brokers from developing stronger horizontal links with one another that could provide them with some countervailing power against the mighty insurance companies with which they conduct their business.

As a second important factor that influences the structure of industry networking, Sydow, van Well, and Windeler (again, like Araujo and Brito) emphasize the role of power. For instance, they point out that, even if insurance brokers would overcome their entrepreneurial *Leitbild* which keeps them from forging horizontal alliances, the insurance brokers would have great difficulties establishing a viable cooperative network. Insurance brokers are simply not powerful enough to overcome the insurers' unwillingness to do business with such broker networks. The authors accordingly conclude that the established network structure locks insurance brokers into a rather awkward position: While brokers experience considerable pressure to form financial services networks (even with direct competitors), the asymmetric power distribution makes it difficult, if not impossible, for them to establish these horizontal relations that in turn would enable them to reorganize

their vertical relations with customers and suppliers in a way more profitable for the brokers.

Taken together, the research by Araujo and Brito and by Sydow, van Well, and Windeler conveys two strong messages. First, it illustrates empirically how the existing network structures within an industry, and the power differentials that these networks reflect and consolidate, importantly shape the opportunities for the industry players to promote their interests by newly establishing or severing networking ties. In addition, both articles emphasize as a further important explanation for the construction and evolution of industry networks the significance of established (and of establishing) common understandings and cognitive schemes among members of the industry. Both contributions, thus, urge us to view industry networks as the result of a process of social construction and as a power game, rather than as a deterministic outcome of particular environmental conditions or task characteristics. Furthermore, they underscore the importance of reconstructing the recursive and dynamic interplay of structural forces and actor agency when explaining industry networks. Like Granovetter (1994) and Ring and Van de Ven (1994), they make a point for devoting more research to the so-far understudied question of network construction processes, that is, how actors socially construct their networks and how they mobilize needed resources through networking.

Governance structures of industry networks and their respective outcomes

Araujo and Brito as well as Sydow, van Well, and Windeler take in a certain sense a *macro* perspective on their industries as a whole, in that they analyze the webs of partially overlapping networks that exist within these industries, as well as their interplay. In contrast, Oliver and Liebeskind as well as Dussauge and Garrette apply a more *meso*-level perspective focusing on different types of networks within the industries studied. Specifically, they explore and compare different types of networking with respect to possibly divergent effects for network members.

Certainly, there are many ways to characterize interorganizational networks. Managers, for example, distinguish among strategic alliances, joint ventures, consortia, and long-term supply partnerships.

Theorists have offered as characterizations of the generic form of an interorganizational network the notions of hybrid (Williamson, 1991) or intermediate-form (Powell, 1990; Sydow, 1992), which contrast networking with market or intrafirm relationships (Ebers, 1997b; Kogut, Shan, and Walker, 1992; Thorelli, 1986). Other researchers have taken a more differentiated view on networks and have identified different organizational forms of networking. These include, for example, the confederate, conjugate, agglomerative, and organic forms (Oliver, 1988); competitive and symbiotic, dyadic/triadic, and multiorganizational/sector-wide networks as well as networks of limited, moderate, and broad cooperation (Alter and Hage, 1993); and social, bureaucratic, and proprietary networks (Grandori, forthcoming). While it may seem confusing to be exposed to many competing conceptualizations of networks that are based on different dimensions and draw on different theories, it nevertheless seems necessary to distinguish and empirically explore different forms of interorganizational networking in order to be able to capture important differences in their contingencies and outcomes. Moreover, in this way, we can hope eventually to arrive at a less confusing state of affairs because we might find out which dimensions are more or less helpful for better explaining and understanding networks and their various consequences.

Therefore, despite the complexity added to the field, we should welcome that both Oliver and Liebeskind and Dussauge and Garrette have proposed and empirically examined yet some novel forms of interorganizational networking. Their research also enriches the still rather small pool of studies that have probed empirically, rather than speculatively, the respective outcomes of different forms of networking (Alter and Hage, 1993; Hamel, 1991; McGee, Dowling, and Megginson, 1995; Mosakowski, 1991; Provan and Milward, 1995).

Based on their extensive empirical studies in the biotechnology industry, Amalya L. Oliver and Julia Porter Liebeskind identify three generic types of network relations: (1) intraorganizational network relations among individual organization members; (2) interorganizational network relations among individuals from different organizations; and (3) interorganizational network relations among organizations, that is, institutional actors. These authors detail the various governance mechanisms that structure the respective network relationships. Moreover, they explore the different outcomes of these forms of networking. Specifically, Oliver and Liebeskind present evidence that the two

first-mentioned forms of “personalized” networking are associated with the generation of knowledge and mutual learning, while the third, “institutional,” form of networking is primarily employed for the task of commercially developing the newly generated knowledge.

These authors further explore the mutual influence processes among the three types of networking. They find that personalized networking—along the basic research, product development, and commercialization cycle—often later entails more institutionalized forms of networking among collaborating organizations. However, they could not detect the reverse influence—that is, organization-level institutionalized networking does not frequently lead to more dense personal networks among the members of the cooperating organizations.

While Oliver and Liebeskind base their differentiation of industry networks on the nature of the actors and the media through which they are connected in their network relationships, Pierre Dussauge and Bernard Garrette found their typology on a larger number of dimensions, such as the legal structure, the functions involved (R&D, manufacturing, marketing), the relative competitive positions of the partners, the organization of tasks, and others. Based on a sample of 197 intraindustry horizontal alliances from a wide variety of industries and countries, they found three forms of industry alliances: shared supply alliances, quasi-concentration alliances, and market-penetration alliances. In their study, the authors advanced and tested the general proposition that the evolution and outcome of strategic alliances between rival firms is contingent on the type of alliance the partner firms set up when they initiated their collaboration.

Specifically, Dussauge and Garrette explore the evolution of the alliances over time, the strategic consequences of the alliances for each partner firm, and the impact of the alliances on the intensity of competition. The study revealed, for example, that shared supply alliances in the majority of cases do not entail strategic consequences for the firms involved and do not change the nature of competition; that quasi-concentration alliances lead to a mutual specialization of the alliance partners and a reduction in the intensity of competition; and, finally, that market-penetration alliances tend to foster the appropriation of skills by one of the partners and lead to more intense competition.

Overall, these studies make a strong point for taking a more differentiated view of industry networks by distinguishing and scrutinizing different forms of interorganizational networking within an industry.

Specifically, they suggest that we can fruitfully analyze these forms and their various implications by focusing on the particular governance structures that regulate actors' behavior and interactions. Moreover, they demonstrate empirically that different forms of governing interorganizational exchange relations are associated with distinct purposes and outcomes.

Learning through industry networks

The final two articles on networks also concentrate on outcomes of networking. Specifically, they explore in greater detail why and how different forms or practices of networking may foster, or impede, learning and innovation at networked firms.

Learning and innovation have been among the core themes of inter-organizational network research. A combination of two reasons accounts for this situation. First, learning and innovation have assumed greater significance for many firms, as a result of shortened product life cycles, greater customer orientation, and increased cost and quality consciousness. Second, networking has been widely perceived as a good vehicle for achieving these ends (Hamel, 1991; Mody, 1993). Purportedly, industry networks have advantages over market procurement and in-house development of innovations because they may combine the strong incentives for efficient and effective performance of markets with the monitoring capabilities and commitment associated with internal organization. These characteristics are particularly important for large-scale innovation because this task today often exceeds the capabilities and resources of a single firm, while it involves highly specific investments, tacit knowledge, and high degrees of uncertainty (Mowery, Oxley, and Silverman, 1996; Teece, 1992).

A number of earlier studies have explored which factors influence the extent of knowledge transfer within industry networks. For example, some scholars argued and confirmed empirically that knowledge transfer is fostered by equity- rather than contract-based forms of networking (Kogut, 1988; Mowery, Oxley, and Silverman, 1996). Hamel (1991) emphasized organizations' intention to learn as a crucial influence factor. Similarly, Cohen and Levinthal (1990) stressed organizational influence factors that affect the capacity of organizations to absorb new knowledge.

We already indicated that the article by Oliver and Liebeskind contributes to these findings by showing why and how more personalized

forms of networking foster innovation and learning in the biotechnology industry. James Brown and Chris Hendry also find that different forms of networking have different impacts on organizational learning. In particular, they explore the respective merits of two forms of networking as vehicles for organizational learning—namely, industrial districts (on the basis of a comparison of international banking in the London financial district and the Nottinghamshire textile industry) and supply chains (in four industries).

Brown and Hendry first outline a model describing the processes involved in organizational learning. They then use this model as a framework for their exploratory field research into the different learning characteristics of industrial districts and supply chains. With regard to learning in industrial districts, they highlight three themes that have emerged in their field interviews: (1) an emphasis on individual learning and the need for a stimulating environment where it may flourish; (2) the flexible use of teams as a means of integrating individual learning, although the authors acknowledge the difficulties in embedding these for long-term organizational learning; and (3) the importance of being able to interpret the environment and to take advantage of that insight.

Similarly, Brown and Hendry find that three themes stand out as typical of the learning that takes place within the supply chains that these authors studied: (1) achieving a better two-way relationship with suppliers, involving improved information exchange, in order to utilize supplier creativity and knowledge; (2) improving process, particularly for cost saving and performance benefits in the supply chain; and (3) encouraging individual learning within an established supply-chain context.

In their discussion of these and other results, Brown and Hendry independently confirm a finding of Oliver and Liebeskind, that organizational learning processes operate at three different levels—individual, group, and organizational—each one associated with distinct organizational forms of networking and specific forms of learning. In particular, Brown and Hendry argue that certain kinds of industrial districts are strong at encouraging individual learning, but weak at institutionalizing this into established routines and practices. In supply chains, according to their findings, individual learning frequently only happens as a byproduct of interfirm cooperation.

Finally, Wolfgang Becker and Jürgen Peters analyze theoretically and empirically why and how manufacturers may be inclined to gener-

ate and transfer R&D spillovers (for which, by definition, the manufacturers receive no direct payoff) within the network of their suppliers. They study the circumstances permitting manufacturers to generate R&D spillovers, as well as the consequences of intragroup R&D spillovers on suppliers' technological opportunities, innovative behavior, and network performance. Empirically, they support their argument by a sample survey carried out in the German automobile industry.

In their theoretical analysis, Becker and Peters show that core manufacturing firms have incentives to transfer R&D-related information to their suppliers. They argue that R&D spillovers stimulate the R&D process of suppliers and the competition among the suppliers; by means of R&D spillovers, manufacturers can thus reduce the time of development of intermediate goods and, as a consequence, can achieve a higher probability of winning an innovation race. These authors further suggest that the stimulating effects of R&D spillovers on suppliers will be more pronounced within a manufacturer's supplier network than outside its confines.

Their empirical study confirms this basic argument. Becker and Peters's data show that the manufacturers' R&D spillovers stimulate the R&D investments of their networks' suppliers and increase the probability for successfully realizing an innovation, more than is the case for non-members in the network. While the nature of their study does not allow the authors to discuss in greater detail the precise forms of networking and the organizational means through which R&D spillovers can best be transferred, their research results indicate that particular features of manufacturer-supplier networks likely play a role. Based on other research presented in this issue, we may speculate that the nature of the personal relationships among the members of the networked firms might contribute in this regard (Oliver and Liebeskind), as might efforts toward enhancing the learning capacity of suppliers and improving information exchange (Brown and Hendry).

The significance of industry for networking

While much has been written on the construction, forms, and outcomes of industry networks, there is almost no empirical research that systematically compares networking across industries. In this respect, the present issue is no exception. While Dussauge and Garrette as well as Brown and Hendry studied alliances and networks, respectively, from

a number of industries, in their present papers these scholars have not tried systematically to assess which features of industries, and for what reasons, may account for some variance in network structures and outcomes. Rather, they tested whether different forms of networking can account for important outcome differences. All other articles in this issue draw on data from just a single industry. It appears, however, that networks in the financial services industry, for example, differ from those we find in the automobile industry, and these in turn seem to be unlike the networks in the biotechnology, airline, or construction industries. Yet, until we have conducted systematic comparative research, it is hard to tell whether these differences are due to industry-related factors or other circumstances—for example, the particular constellation of interests among network members.

Why are interindustry differences for networks of interest for organizational research and practice? For research, this difference would have implications for our sampling decisions, and the explanations we offer, and would concern the degree of generalization that we can associate with the results of our studies. If industry plays a negligible role, it should make no difference for our results whether we draw a sample of networks from one or from many industries. If, however, industry does make a significant difference, then the selection of industries within our samples of networks will significantly influence the results studies produce. This, of course, in turn has implications for the kinds of variables we should include in our studies, as well as for how we should interpret and can possibly apply research results. For organizational practice, it would be important to know which contingencies decision makers should consider when designing and practicing their network relations.

The notion of industry usually only serves as a shorthand for a number of largely unspecified factors that can vary across groupings of firms engaged in the production of roughly the same goods or the delivery of the same services. Those factors tend to be the intensity of competition, the degree of uncertainty, power structures, minimum scales of production, and other technological or economic characteristics. In the case of significant interindustry differences, the challenge for research would be to identify those industry-related factors that are responsible for variations in the forms and outcomes of networking across industries and their respective influence as compared with other factors. While other fields have experienced substantial progress in this

regard—for example, in industrial-organization theory (Powell, 1996; Roquebert, Phillips, and Westfall, 1996; Rumelt, 1991; Schmalensee, 1985; Tirole, 1988)—network research still has a way to go.

Finding industry differences, however, would not necessarily imply that we should have to amend our theories about networking accordingly. This is because those industry differences may well be due to the systematic variation across industries of factors that already are acknowledged within particular theories. For example, if we find that industry differences in networking can be traced back to differences in the power structures and levels of environmental uncertainty in the industries studied, we can account for these differences by standard resource-dependence theory reasoning (Pfeffer and Salancik, 1978) and do not have to include novel, industry-related factors. To take a different example, it might be the case, however, that, when employing transaction-cost theory, the main explanatory variables of that approach (asset specificity, uncertainty, and frequency) do not systematically vary with industry; yet, we might nevertheless find substantial industry-related differences among the networks studied. In such a case, we might wish to take a closer look at the possible influence of “shift factors” (to use Williamson’s [1991] expression), such as legal industry-level regulations, industry value systems, and the like.

In a somewhat wider view, the issue becomes one of level of analysis. This is because similar arguments to the above could be made for other all-encompassing explanatory concepts as well, not only for industry. Hinings et al. (1997) and Hardy and Philips (1997), for example, have recently renewed the call to study the possible impact on interorganizational networking of features of organizational domains or fields (Aldrich and Whetten, 1981; Scott, 1995), whereas Whitley and Kristensen (1997) emphasized that industry networks need to be related to the societal business systems of which they are a part, and to the actions and structures of the social groups in a given society. Therefore, we face the challenge of engaging in comparative network studies not only across industries but also in studies that try to determine which aspects of networking can be best understood when taking into account how the respective networks are formed by their societies and regions with their particular institutional structures, by their organizational fields, by social groups, or by features and actions of individual network members. The articles assembled here indicate that fruitful insights can be gained at all these levels of analysis; moreover, in

different ways they also point out relationships among these various levels. Nevertheless, we have to leave it to future research to specify more precisely how exactly these levels are related and where we can gain the most powerful insights into the construction, forms, and outcomes of industry networks.

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