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24. The industrial network approach and purchasing and supply management research

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THE INDUSTRIAL NETWORK APPROACH: ORIGIN AND EVOLUTION

The industrial network approach seeks to analyse the interaction between actors in business networks. The approach was initially developed by a group of European researchers in the 1970s. In fact, the industrial network approach encompasses two core models: the interaction model, which pertains to bilateral exchange episodes and long-term relations between firms; and the network model (or activities–resources–actors model), which considers the relations between a set of actors (three or more) and their interdependencies. The emphasis on collaboration and the interdependence between different business relationships may not seem very distinctive today in the 2020s, but some 50 years ago this was a significant deviation from the then-current models of business relations in general, and of procurement and business marketing in particular. Still today, the industrial network approach (INA) stands out in that it considers interaction, and interdependence, as a given condition in the overwhelming majority of business exchanges.

The INA view on business marketing and purchasing originates in an international research project starting in 1976, on international marketing and purchasing of industrial goods. This project involved researchers from five European countries with ambitions to investigate the business processes between firms, which in this particular project involved buying and selling firms. These researchers – collectively referred to as the Industrial Marketing and Purchasing (IMP) Group – were dissatisfied with the descriptions, conceptualizations and analyses of interorganizational relations in the mainstream literature. Contemporary purchasing models, for instance, considered the occurrence of close relations with suppliers to be a market failure because these features would impose unwanted dependences (Westing et al., 1969). In contrast, prior empirical observations made by this group of researchers pointed out the central role of long-term business relationships; a phenomenon neglected in established frameworks at the time. The project members concluded that more realistic conceptualizations had to be based on systematic empirical data. In their joint project, more than 1000 face-to-face interviews were conducted in Sweden, the United Kingdom, France, Italy and (what was then) West Germany. The interviews covered around 800 customer–supplier relationships in the five countries. The empirical results were similar across firms and countries, and confirmed the widespread existence of long-term, close buyer–supplier relations. These findings strongly contrasted with the mainstream view of (business marketing and) purchasing processes (Robinson et al., 1967; Westing et al., 1969).

After six years, the project was reported in a joint publication edited by Håkansson (1982). In the ‘Introduction’ (p. 1), the authors started by challenging the contemporary perspective in several respects. They challenged the concentration of the industrial buyer behaviour literature

‘on a narrow analysis of a single discrete purchase’, and the view of industrial marketing ‘as the manipulation of marketing mix variables’, as well as the analysis of ‘either the process of industrial purchasing or of industrial marketing’. Instead, they emphasized the importance of the relationships between buyers and sellers, and the interaction between the two parties ‘where either firm may be the more active part’. The main contribution of this first step in INA theory development was the interaction model portraying the interplay between buyer and seller. The model and its constructs are further described in the following two sections.

The next step was initiated in the second half of the 1980s, also through the launch of a multinational project. IMP1 was focused on interaction in dyadic relationships. The analysis of these relationships indicated that they were connected to, and significantly impacted by, other relationships. Therefore, the environment of the relationship in the interaction model was far from a diffuse or anonymous context, but featured specific other firms and relationships. Thus, the new project (IMP2) aimed at conceptualizing the embeddedness of the individual relationship in its contextual setting of other interdependent relationships. IMP2 extended the geographical coverage by also involving researchers from the United States, Australia and Japan. The project is reported in Håkansson and Snehota (1995). The study showed that understanding of business interaction requires that the individual relationship is seen as an element embedded in a network of other relationships. As such, the IMP definition of networks closely follows that by Cook and Emerson (1978, p. 725): ‘An exchange network is a set of two or more connected exchange relations ... Two exchange relations are connected to the degree that exchange in one relation is contingent upon exchange (or nonexchange) in the other relation.’

The main contribution from the IMP2 study is a matrix scheme for network analysis building on the ARA model (activities–resources–actors). The model and its constructs are further described in the section on core constructs.

In both the IMP1 and IMP2 projects, the impact of the network is considered, but at the relationship level. These conditions called for a publication taking the network level as the starting point for analysis: Håkansson et al. (2009a). This book is not based on a specific research project, but still heavily grounded in empirics. Firstly, the authors rely on their own field studies conducted for more than 40 years. Secondly, they draw on the numerous dissertations and papers presented by researchers in the expanding IMP community. Again, the central role of interaction is emphasized, and its features and effects are explored in relation to the three ARA layers. In addition to the spatial network impact, specific attention is directed to dynamic conditions. Furthermore, the authors discuss the implications for management and public policy.

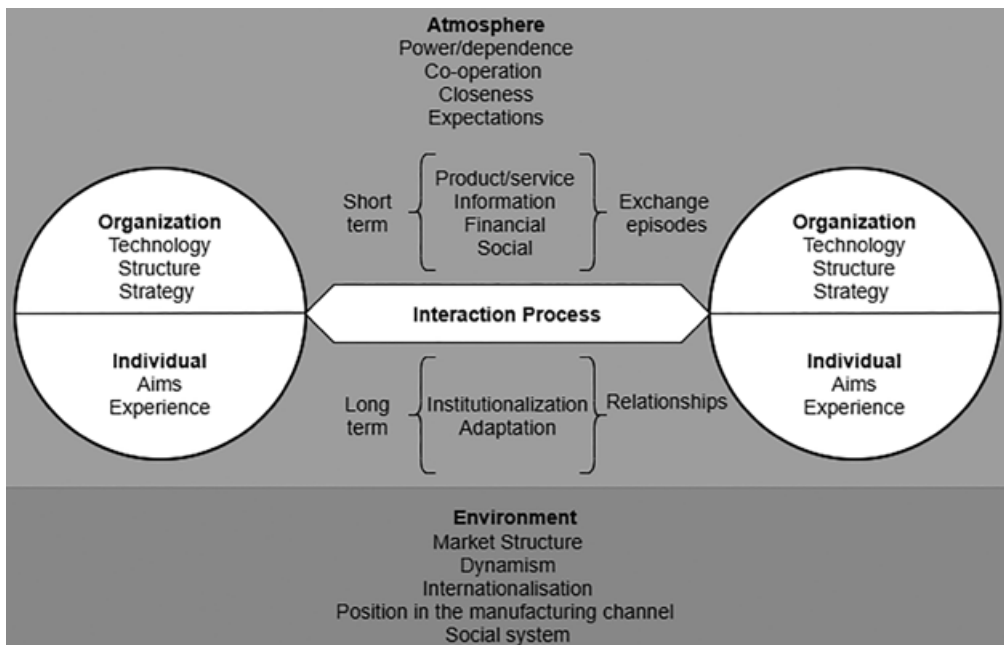
FROM RELATIONSHIPS TO NETWORKS: THE INTERACTION AND ARA MODELS

In the following we describe the INA’s two central models. The INA perspective on business relationships constituted a watershed between established conceptualizations and the observations of reality made by the IMP pioneers. As noted, contemporary economic theory perceived the occurrence of close relations with suppliers to be a market failure, because such features imposed unwanted dependencies. This view of relationships was probably one of the main triggers of the INA since its early advocates had identified the existence of long-term and close relationships, as well as the benefits they provided (Håkansson et al., 1977; Ford,

1980). The relationships with suppliers were economically significant for buying firms, since studies showed that a limited number of suppliers accounted for a large portion of their costs (and correspondingly for their income). Moreover, suppliers were often important sources of technology and knowledge, implying that small suppliers could also be significant business partners. For these reasons, the INA perspective claims that what takes place in the relationships between companies is more important than what takes place within the individual firms. These conditions have supported the argument that a firm’s business relationships are its most valuable resource, which in turn makes the interaction within such relations highly important (see Ford et al., 2003).

The Interaction Model

Figure 24.1 portrays the original interaction model evolving from the IMP1 project. Interaction occurs on both the organizational level and the individual level. The interaction processes build on the aims and experiences of the parties and is impacted upon by features such as technology, organizational structure and the strategies of the parties. Interaction contains two processes: short-term exchange episodes, and long-term relationships involving adaptations and thus institutionalization of the interaction. The processes were found to be affected by the atmosphere of the interaction, which can be either cooperative or confrontative through the exploitation of power. Interaction is also affected by various aspects of the environment of the two parties, such as internationalization and market structure. In the coming discussion of central constructs, we will return to adaptations, closeness and dynamism.



Source: Based on Håkansson (1982).

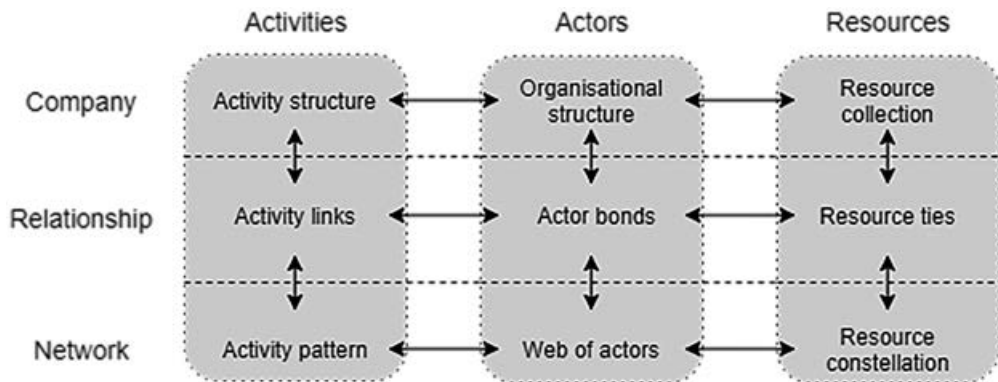
Figure 24.1 Interaction model

The significance of interaction has been increasingly emphasized over time. In Håkansson (1982), interaction was primarily considered a process ongoing between individuals or between organizations, as illustrated in Figure 24.1. Håkansson et al. (2009a) extended the analysis of interaction to involve the three network layers, thus exploring interaction in relation to activities, actors and resources. Finally, even greater attention to interaction is provided by the subtitle of the book celebrating 40 years of IMP (Håkansson and Snehota, 2017): *Making Sense of the Interactive Business World*.

The ARA Model

The initial ARA model (Håkansson, 1987) portrayed the business reality as a network containing three layers. In relation to the terminology of Wacker (1998), this network was defined by its ongoing activities, the resources exploited in the undertaking of activities, and the actors controlling resources and conducting activities. In reality, the three layers are completely intertwined, but combined they offer three separate lenses on the network, thus enabling the holistic perspective required for analysis of complex realities.

Through IMP2, the conceptualization of the INA was further developed as a means for better understanding of interaction and dyadic constellations (see Figure 24.2). One extension regards the content of a business relationship that is defined by three central constructs: the links between the activities of the two parties, the ties between their respective resources, and the bonds that evolve between the two. Activities are linked through coordinative efforts; resources become tied through the successive combining and recombining of the resources of the parties. Finally, actors are bonded through their joint coordination and combining, as well as through the personal connections between people. The second extension relates to the function of a relationship. What is ongoing in a business relationship does not only impact upon the specific dyad. There is also a function for the two individual companies, as well as for the larger setting – the network – where the two parties reside. In this way, the links, ties and bonds in the relationship impact upon the activity, resource and actor features of the two companies and the other firms connected to them. Central constructs subject to further discus-



Source: Based on Håkansson and Snehota (1995, p. 45).

Figure 24.2 The ARA model

sion regard interdependencies between activities, heterogeneity of resources, and adaptations among actors.

THE CORE CONSTRUCTS IN THE INA

In the following, we describe the core constructs of the two INA models: one of the four main elements of a theory according to Wacker (1998). The constructs presented are those most central and distinctive for INA's conceptualization of interorganizational relationships and networks: network embeddedness, interdependencies, heterogeneity of resources, involvement and interfaces (related to closeness in the interaction model), adaptations, and network dynamics.

Network Embeddedness

Following the ARA model, business relationships are embedded in networks, implying that what happens in one relationship tends to affect what happens, and what can be done, in other relationships. In the ARA terminology one significant assumption is that the 'total' network of activities, resources and actors is boundless, since it is always possible to identify further connections in any direction. This network constitutes a complex setting, also including 'technological, logistical, and administrative systems as well as legal structures; it is a mirror and source of the multiple interdependencies arising between companies with permeable and fuzzy boundaries' (Håkansson and Snehota, 2017, p. 11). These conditions impose severe analytical and managerial difficulties.

Any analysis of network conditions must therefore be based on limitations of the total network, such as subnetworks related to logistics, technology, industries, or those developed around single companies. An important feature of the INA is that the research boundaries become set as the study progresses, based on the evolving findings, while most other theories tend to rely on preset system boundaries. Moreover, since the total network is boundless and changing, it is unknowable for those involved in managerial action. Decision makers must act on their knowledge of the limited part of the network they consider relevant for their actions, identified as their 'network pictures' (Ford et al., 2003) or 'network horizon' (Holmen and Pedersen, 2003).

For this review, IMP publications related to supplier networks are of special interest. Gadde and Håkansson (2001) explore the features of supply networks regarding the three network layers, and discuss strategic issues related to outsourcing, relationship features and network conditions. Bocconcelli and Håkansson (2008) show how an unprofitable company made a successful turnaround through the activation and transformation of its supplier network. Finally, Dubois and Fredriksson (2008) illustrate the significant connection between the relationship and network levels through a study of triadic sourcing (one buyer in relation to two suppliers).

Interdependencies

Interdependence is a central feature of the activity layer because no activity is isolated from others; it is linked to activities undertaken previously and simultaneously, as well as those that

will be undertaken later. These interdependencies occur between manufacturing, logistics, and service activities as well as in relation to design and research and development. The myriad of interdependent activities must be integrated within firms to secure efficient in-house operations. However, over time, increasing outsourcing has made integration across the boundaries of firms even more significant for performance improvements in supply chains and supply networks. These efforts require analytical tools for investigation of the potential effects of the coordination mechanisms applied for integration of activities.

Dubois (1998) developed such tools regarding serial and parallel interdependencies. Activities that must be undertaken in a specific order are serially related. The relevant mechanism for coordination depends on the standardization or customization of what is exchanged between the parties. Parallel interdependence occurs for activities that are undertaken at the same time and exploit the same resources. In this situation the central task in coordination is to secure effective use of resources. This framing was further developed to analyse interfirm interdependencies within and among supply chains (Dubois et al., 2004; Håkansson and Persson, 2004). An overview of the role of interdependence in INA research is presented in Freytag et al. (2017).

Heterogeneity of Resources

One of the central assumptions in the INA is resource heterogeneity, implying that the value of a resource is dependent on its connections to other resources. In today's interactive business landscape, the economic feature of a resource is not a given: it is determined by the effects of its ties to other resources. In this way, the combining and recombining of resources are central issues in supplier networks (Gadde and Håkansson, 2001). Baraldi (2008) shows how a buying company (IKEA) is provided with substantial benefits through the long-term resource combining with its suppliers.

The conditions for efficient and effective combining of resources change over time, thus making recombining a crucial issue. Håkansson and Waluszewski (2002) show, in another IKEA case, the significance of resource recombining in relation to suppliers when network conditions change. This book also presents the 'four resources' (4R) framework, useful for analysis of resource development. According to this framework, the evolution of a specific resource is determined by its interplay with other resources representing four categories. The framework distinguishes between physical and organizational resources. The physical resources are represented by the products exchanged and the facilities utilized (involving, for example, production resources and the transportation infrastructure). The organizational resources contain the business units where the knowledge and capabilities of the actors reside, as well as the business relationships providing access to external resources.

Involvement and Interfaces

'Closeness' is one of the concepts in the interaction model. This relatively broad concept was further refined by, for example, Gadde and Snehota (2000) in their analysis of how to 'make the most of supplier relationships'. They distinguished between high and low involvement relationships and their respective contributions to relationship performance. Araujo et al. (1999) presented a more fine-tuned distinction based on the buying firm's resource interfaces with suppliers, and the accompanying consequences for productivity and innovation.

Four interface categories were identified: from standardized interfaces without adjustments between resources, to interactive interfaces based on intense interaction and collaboration involving mutual adjustments on the two sides of the dyad. In-between the two we find specified interfaces where the buyer prescribes the features of what is exchanged and how it should be produced. When translation interfaces are at hand, the buyer describes the features of what to exchange and leaves it to the supplier to decide how to comply with these requests.

This framing was further extended by Gadde and Wynstra (2017), who analysed the consequences of the various interfaces in relation to rationalization and development efforts on the supply side of a company. Based on this exploration they present strategic alternatives for the leveraging of these two strategic roles and the interfaces, as well as the organizing issues related to each type of interface.

Adaptations

Integration of activities, combining of resources, and involvement among actors are examples of adaptations between business partners. Adaptations provide benefits by improving operational performance but are also costly. Therefore, the financial consequences of adaptations in activity links, resource ties and actor bonds need to be scrutinized both before and after such investments are undertaken. Moreover, adaptations impose dependencies in relation to business partners. Historically, firms were recommended to avoid adaptations to individual suppliers, because such conditions would imply lock-in effects and make it difficult to exploit market forces.

In today's business landscape, however, firms deliberately enter situations leading to interdependencies. They do so because in order to survive and progress in the interactive business world, organizations cannot escape the interdependencies accompanying adaptations in terms of well-functioning activity links, resource ties and actor bonds. However, these adaptations in relation to specific business partners will constrain the opportunities for prosperous engagement with other firms, because these potential partners have adapted their resources and activities to their current business partners.

Changing business conditions impact upon the perceptions and effects of interdependencies. In these situations, firms may consider modifying their adaptations, since adaptations are important means for handling interdependencies. But any attempt to reduce certain interdependencies through changes in the pattern of adaptations will induce other forms of interdependencies, which in turn must be handled.

Network Dynamics

Network conditions are in continuous flux. They evolve successively through the interaction among the actors in their attempts to improve network performance. In these efforts technological developments represent significant enablers for reconfiguring activity coordination and resource combining. Somewhat paradoxically, however, networks also feature considerable stability. Modifications and renewal normally tend to occur within the basic building blocks, constituted by the interdependencies and adaptations within established activity patterns, resource constellations and webs of actors. The embeddedness within this broad setting favours changes that are in line with contemporary network structures and processes, while constraining other forces for modification.

The same conditions make it difficult for individual firms in isolation to change the basic structure. Over time, other firms in the network have made substantial investments in the current setting. Therefore, it is not likely that they would be motivated to engage in modifications that might threaten their network positions. Rather, they can be expected to prefer the status quo and thus counteract change initiatives. This means that major modifications require the unified efforts of several actors in interaction, because the action space of a single firm is severely constrained. For these reasons there is a network saying that has become classical: ‘If the network is against you; you can do nothing. But if the network is with you; you can do almost anything.’

THE DOMAINS AND UNITS OF ANALYSIS OF THE INA

The second element of any theory, according to Wacker (1998), is its domain.

Above we illustrated some central constructs used in INA research. The starting point for this conceptual evolution was that the IMP founders were dissatisfied with the framing of the processes in business marketing and purchasing. In their efforts to improve this situation they were able to rely on constructs developed within other research disciplines (for example, sociology and organization theory). It is beyond the scope of this chapter to elaborate on the various theories that the INA has drawn on; for a review we refer the reader to Easton (1992).

For this reason, the concepts applied – such as relationships and networks – are broader than those established before (for example, marketing mix and models of organizational buying behaviour). These conditions, in combination with the generality of the ARA model’s basic concepts, make it possible to use the INA frameworks for many research problems and in many different empirical settings. When issues related to activities, resources and actors are significant, the INA provides a relevant alternative.

This relevance is illustrated by the fact that INA models have been applied to other phenomena than business marketing and purchasing. In the initiation phase, research in international business provided important input to the development of the approach, and over time, contributions have been made to research on innovation and technological development (Håkansson and Waluszewski, 2002; Håkansson et al., 2009b). Moreover, the INA models have been used for reinterpretation of prerequisites and effects of public policy (Guercini and Tunisini, 2017; Hoholm and Araujo, 2017). Finally, in recent years, enhanced attention has been paid to issues dealing with start-ups and various forms of new ventures (see Baraldi et al., 2019).

Domains related to purchasing and supply management where the INA perspective does not really apply would involve atomistic markets with anonymous trading partners, such as pure commodity markets. It would be a misunderstanding to think that this means that the INA perspective applies only to technologically complicated goods and services; even the development and production of IKEA’s famous Lack table can be effectively understood in terms of integration of activities, combining of resources, and involvement of different business actors (Baraldi, 2008).

GENERAL DIFFUSION OF THE INA IN PURCHASING AND SUPPLY MANAGEMENT RESEARCH

As the name already suggests, IMP and the INA have been extensively used in studying phenomena in the field of purchasing and supply management (PSM), but by a relatively small community. To illustrate this, we draw on a study that reviewed some 2522 journal articles dealing with PSM, from the period 1995–2014 (Wynstra et al., 2019). These articles are published in a set of 18 international journals across the marketing, operations management and strategy/organization disciplines, plus the two specialist PSM journals *Journal of Purchasing and Supply Management (JPSM)* and *Journal of Supply Chain Management*. Of these 2522 publications, 50 articles (2 per cent) explicitly apply the industrial network approach. Of these, 42 articles are published in *Industrial Marketing Management (IMM)* and *JPSM*. The INA has been particularly popular in the period 2000–2010; before and after this period (that is, 1995–1999 and 2011–2014), the PSM studies in our set did not apply the INA.

There may be several factors explaining this somewhat limited diffusion of the INA in PSM research published in (top) journals. First, many of the original or at least early IMP contributors were initially focusing on publishing in books, and in some journals not covered in this dataset (such as the *Journal of Business-to-Business Marketing* and *Journal of Business Research*). Part of this focus may be explained by the fact that many of the top journals in marketing and operations management, especially those that have their roots in North America, are not a natural home to the mainly qualitative, in-depth studies that IMP research would typically involve. Another factor explaining the limited focus on top journals may be the institutional context in the academic institutions of the early IMP contributors. In many cases, these universities (especially in Scandinavia) did not steer researchers so strongly towards publications in top journals – for better or for worse.

The second plausible reason for the somewhat limited diffusion of the INA is the consequence of the first; since relatively few IMP studies were published in top journals, fewer people outside the IMP community (be they readers or reviewers) have become familiar with it, and those that have seen it may not have deemed it a very productive avenue for getting published.

A third reason may be that regarding Wacker's third and fourth elements of theory – specific relationships between constructs and predictions – INA research tends to be more ambiguous than, for instance, transaction cost economics. One central postulate in INA theory is that any action and any outcome in a network is highly context specific. Therefore, findings and conclusions generated in one business relation or network should not be generalized to another one without careful consideration.

Despite this apparent limited diffusion of the INA in PSM research, one should not draw the conclusion that the impact or significance of the industrial network approach is limited. Just considering relative quantities of journal publications is a narrow metric, which disregards the impressive series of books that have been published, for instance. Also, the impact – implicit or explicit – of the INA on PSM research cannot be completely gauged in this way. In fact, Wynstra (2010) demonstrates that a relatively high share (10 per cent) of the most-cited articles published in *JPSM* by then had been authored by researchers associated with IMP (Dubois, Gadde, Harrison, Håkansson, Wynstra).

APPLICATIONS OF THE INA PERSPECTIVE

We have identified ten themes central to PSM research, which include studies that have adopted the INA. For each of the chosen themes, we briefly describe the theme and review some illustrative examples of studies that have adopted the INA. In this review of applications of the INA perspective, we draw on the set of articles described above (Wynstra et al., 2019), the review by Johnsen (2018), and additional publications from other journals and books.

Strategic Role of Procurement

The seminal article by Kraljic (1983) directed attention to the strategic role of procurement. While the category sourcing strategies from that article have received most attention (see below), the article also suggested the contingencies under which organizations should adopt a more strategic focus on procurement ('supply management') and when they could continue to rely on a predominantly operational focus ('purchasing'). At the same time, IMP researchers pointed out the strategic importance of purchasing in Axelsson and Håkansson (1984). This book was based on an interview study involving a broad selection of purchasing managers, aiming at identifying their 'best examples' where procurement efforts made significant strategic impact. These illustrations were then discussed around three themes, each one portraying a strategic role of procurement: the rationalization role, the development role, and the supply network design role. While the first two roles were to some extent comparable to Kraljic's notions of purchasing versus supply management, respectively, the supply network role had not explicitly been defined. Moreover, Axelsson and Håkansson (1984) emphasized that there are trade-offs in fulfilling these different roles.

Gadde and Håkansson (2001) returned to these roles and integrated them systematically in their analysis of the interconnections between purchasing, on the one hand, and the network's activities, resources and actors on the other. The authors concluded that the strategic role of purchasing is manifested through the buying firm's approaches and actions in relation to three specific areas: make-or-buy decisions, the relationships with individual suppliers, and the design of the entire supplier base.

Supplier Relations

Early studies in business marketing adopting the INA strongly emphasized the importance of business relationships and the role of interaction between buyers and sellers. Several subsequent studies from the buying firm perspective were 'mirror images' of those made from the selling party's perspective (see Håkansson, 1982). Studying the general as well as specific aspects of a great number of interactive settings demonstrated, among others, how interactive processes differed for a firm supplying raw materials or semi-assembly products relative to components and production equipment. These studies have been extended by Van der Valk et al. (2009), for example, who studied various kinds of services based on the same idea (notably, how the product is used by the buyer: as a product to process further, as a part of a bigger product, or operatively as a working method). Other studies focusing on business relationships have looked at the durability of relationships (Dubois et al., 2021) and reasons for terminating relations (Halinen and Tähtinen, 2002).

As organizations have several supplier relationships, there is an interest in how to best segment them. Ever since the seminal article by Kraljic (1983), companies have struggled with sorting supplier relationships into categories. IMP research has looked into this theme too. Pedersen and Dubois (2002) expressed criticism of all-too-simple classifications, which is obvious from the title of their work: ‘Why relationships do not fit into portfolio models’. Their critique is twofold. First, buyer–supplier relations are not just to be seen from a power balance perspective; interdependence is the natural consequence of adaptations and concerns virtually all relationships. Second, specific buyer–supplier relations should not be seen in isolation. Grouping suppliers based on the product or service delivered disregards interdependencies and synergies with other products and services, and limits the viewpoint of buying firms to the current exchange, with the danger that the overall potential of the supplier in innovation is overlooked.

Persson and Håkansson (2007) also challenge the Kraljic matrix, and specifically the recommended strategies that are indicated based on a supplier’s position in the matrix. They demonstrate that in each of the four matrix quadrants a relationship-oriented approach – contrary to the conventional view – could be an effective choice. This is not to say that cooperation is the sole way to leverage supplier relations. The earlier-mentioned study by Dubois and Fredriksson (2008) demonstrates how cooperative and competitive measures could go hand-in-hand. For instance, a company can capture the benefits of long-term cooperation by alternating or shifting volumes between parallel suppliers.

Supplier Base Configurations

The supplier (supply) base has been identified as one of the most strategic assets of a firm (Ford et al., 2003). One distinction in relation to other theories is the explicit view of the INA that supplier networks become established through evolutionary processes that are not fully under control of the buying firm. Other approaches tend to consider these networks as predominantly created and managed by the buying firm. Within the IMP Group, however, there are also some studies that adopt such a more voluntaristic perspective (Möller and Rajala, 2007). At the same time, supplier bases are often characterized by a high degree of stability. In a longitudinal study, building on data covering more than 50 years, it is demonstrated how the supplier base of a company evolves through entries and exits of suppliers, as well as modifications of their relative positions (Dubois et al., 2021). Other studies illustrating the features and dynamics of supplier bases include the previously mentioned papers by Araujo et al. (1999), Baraldi (2008), Bocconcelli and Håkansson (2008) and Persson and Håkansson (2007).

One of the central INA constructs is embeddedness, implying that what takes place in one relationship impacts on – and is impacted upon by – what is ongoing in the surrounding network. The obvious implication is that activities directed towards one business partner also need to bring other relationships into the picture. Numerous studies make clear that firms do take specific other relationships into consideration when deciding and acting in relation to a focused counterpart (Blankenburg and Johanson, 1992). Following this notion of embeddedness, the INA has traditionally avoided the term supply ‘chains’, but has consistently referred to supplier networks (see Gadde and Håkansson, 2001). Relations with and between suppliers can be interconnected in multiple ways; not just those between the different tiers in a supply chain for a specific component.

Organizing Procurement

Historically, PSM organizing focused on intra-organizational issues such as the choice between centralization and decentralization, the organizing of the purchasing department and its connections to other corporate functions. Over time, outsourcing, specialization, and the need for supplier resources required increasing attention to organizing across the boundaries of firms. From the INA perspective this external organizing was a primary focus from the very beginning, since the early studies indicated that business marketing and purchasing to a large extent could be characterized as organizational issues in relation to important business partners.

External organizing is significant for the features of the exchange processes in a relationship. The outcomes of efforts to mobilize and motivate suppliers are contingent on the organizational arrangements applied between the firms. Moreover, the content of a relationship, in terms of activity linking, resource combining and actor bonding, are all features determined by the forms of organizing across the borders of firms. The four types of interfaces in buyer–supplier relationships discussed in previous sections rely on different organizational constellations (Araujo et al., 1999; Gadde and Wynstra, 2017). Moreover, the basic conditions in the supplier base regarding, for example, collaboration between the various suppliers are generated through the organizing forms established.

The most crucial issue in the organizing at the supply side of companies are the linkages between internal and external organizing (Gadde and Håkansson, 2001). Dubois and Wynstra (2005) developed a framework for analysis of the connection between the two. The internal dimension characterizes the relationship between purchasing and other company departments regarding the internal decision-making processes. For the external dimension the authors distinguish between different levels of mutual adjustments between buyer and supplier, from market-based transactions to intense collaboration. Hessel and Gadde (2013) also developed a framework for analysis of internal–external linkages. In this case the interplay between internal organizing, relationship organizing, and supplier base organizing is related to each of the three ARA dimensions.

Offshoring and International Sourcing

There are rather few INA studies specifically addressing international procurement. Many of the studies addressing other topics, however, naturally deal with buying and selling firms located in different countries (Håkansson, 1982; Håkansson and Snehota, 1995). Thus, the international aspect has in many studies been treated as a contextual factor. Still, some studies specifically highlight the international dimension. Hallén (1982) investigated the extent to which international purchasing in industrial firms is influenced not only by the market conditions, but also by the attitudes toward buying from abroad and the firm's competence in international transactions. Other studies include Salmi and Sharafutdinova (2008) and Andersson and Salmi (2001). Agndal (2006) addressed international sourcing, primarily related to small and medium-sized firms, focusing on issues such as the role of personal relationships as venues into new markets, and the degree of rational planning relative to seemingly serendipitous events in and around relationships are addressed.

Service Procurement

Procuring business-to-business services has over time attracted more attention by IMP-oriented researchers. Axelsson and Wynstra (2002) nuance the traditionally perceived specifics of service procurement by connecting INA models to theories of service management and marketing. The INA and in particular the service-dominant logic (SDL) have quite a lot in common. One element is the emphasis on co-creation of solutions by the buyer and seller, as well as by other actors. Another is the emphasis on relationships as valuable assets enabling firms to co-produce solutions. The specific contribution from the INA encompasses the concepts to systematically describe and analyse individual relationships as well as broader business networks (or ecosystems) (Ford, 2011).

Most traditional procurement literature treats service procurement as indirect procurement: items that do not enter the buying firm's final customer offerings. To address this shortcoming, the aforementioned work by Van der Valk et al. (2009) distinguishes between procurement of so-called consumption and instrumental services (indirect), versus semi-manufactured and component services (direct), and related interaction patterns.

Another major area is procurement of solutions and outcome (performance)-based procurement. The INA perspective has emphasized two aspects here. One is the new relationship challenges that tend to follow from solution procurement: a broader set of suppliers are involved, higher degrees of responsibility are delegated to (some) suppliers, and the collaboration of procurement with sales and marketing is intensified (Andersson et al., 2018). The other aspect is the business network (or ecosystem) and the complexities in manoeuvring therein when building a system of cooperating suppliers to enable the solution offerings (Spring and Araujo, 2009).

Logistics and Distribution Channels

Regarding distribution channel research, Alderson (1957) argued that the activities in distribution are related in an 'ecological network'. This holistic perspective was later undermined by the evolving producer-oriented channel management approach. Over time, however, changes in the business reality called for alternative models of distribution constellations, and made INA theory a relevant framing, as pointed out by, for example, Gadde and Ford (2008). Specific application areas regard, for instance, food supply, recycling and recovery in waste handling, supply to construction sites, as well as distribution systems for mobile phones and personal computers.

The business reality of logistics and distribution channels has become more complex, increasingly characterized by substantial interdependencies. For this reason, the holistic features of INA theory provide relevant frameworks for analysis. Jahre et al. (2006) is one example of comprehensive case studies of logistics issues. The book is based on a major Norwegian research project where the four resources (4R) framework is applied. The relevance of the INA is also acknowledged outside the IMP Group for research dealing with logistics service providers, since the models offer insights regarding the dynamics of outsourcing. For example, Marasco (2008, p. 16) claims that the INA represents 'a robust structure that enables a comprehensive understanding of TPL relationships'.

Collaborative Innovation

Collaborative innovation has been a hallmark of IMP research from the beginning. One important contribution is a joint publication based on studies in the middle of the 1980s (Håkansson, 1987). Chapters in the book are devoted to process and product development, as well as to the significance of supplier relationships and to the role of personal networks among technicians.

Later, Håkansson and Eriksson (1993) adopted the interaction approach to identify and analyse four key processes in managing supplier involvement in product development: prioritizing, mobilizing, coordinating, and timing of activities and resources. This classification has subsequently been adapted and refined by Wynstra et al. (1999) and Van Echtelt et al. (2008) to identify sets of specific activities that are, on the one hand, related to short-term, project-based collaborative innovation for specific products and services; and on the other hand, to long-term technology development.

In these and other IMP-related studies on buyer–supplier collaboration in innovation, it is noteworthy that these studies typically consider multiple cycles or time horizons of collaboration forms. This can be related back to the emphasis of the original interaction model that considers both individual, short-term exchange episodes, and the more long-term relationship development process.

Public Sector Procurement

Public procurement is a significant part of economic activity in society. IMP researchers have looked into this field from a variety of angles. A general theme in IMP studies of public procurement is the consequences for good and bad – but most of all bad – of the dominant market view. This criticism is frequently followed by requests for a modernized legal structure for public procurement which would allow for bringing in more of a relationship-based work mode (or governance mode).

Axelsson and Torvatn (2017) demonstrate how the theoretical points of departure from microeconomic theory have been translated into policies and practices in public procurement. They confront these practices to the five basic governance modes identified by Gereffi et al. (2005) to find out whether – and to what extent – the policies and practices are in line with these different governance modes. In doing so they point to efforts in policies and regulations to ‘repair’ shortcomings due to the points of departure by adding ‘exceptions’ and ‘special cases’ to the dominant (version of) market governance. In a follow-up study, Håkansson and Axelsson (2020) look into public sector outsourcing from two empirical cases. They utilize the four types of buyer–seller interfaces from Araujo et al. (1999) as well as a general model of when to outsource or not. These two tools are used to systematically identify when outsourcing in the public sector could be considered a relatively straightforward option, and when it would be more challenging. Other studies of public procurement applying the INA include studies such as Waluszewski et al. (2019).

Research Methods

On a final note, several IMP scholars have substantially contributed to the debate on research methods. Some of these contributions have dealt with research methods regarding interorganizational relations and networks in general (Halinen and Törnroos, 2005), while some

have focused on methods for PSM research in particular (Dubois and Araujo, 2007). The publications usually deal with the qualities and requirements of qualitative research and longitudinal fieldwork, while some articles specifically address the so-called abductive approach to research (Dubois and Gadde, 2002). Such an abductive approach, or ‘systematic combining’, relies on ‘a continuous movement between an empirical world and a model world’ (Dubois and Gadde, 2002, p. 554). Such continuous iterations between theory and observation would maximally leverage the qualities of case research, whereas received wisdom typically relates case research to a predominantly exploratory or inductive approach.

CONCLUSION

The industrial network approach, and the interaction and actors–resources–activities models that it incorporates, have been applied in numerous studies in PSM. In fact, one could argue that the INA is one of the few theoretical perspectives that is so specifically rooted in observations on buyer–supplier relations. At the same time, a distinguishing feature is that the INA has been used to study both the supply side and the buy side of buyer–supplier relations, and often in a more holistic fashion than most other theories.

As the discussion of the central concepts has illustrated, the INA is distinct from other perspectives that deal with interorganizational relations in that it provides a conceptualization of what is the substance of relations (activity links, actor bonds, resource ties) that is deeply rooted in the primary processes of development, production and exchange of goods and services. Other approaches, such as social exchange theory (Blau, 1964; Thibaut and Kelly, 1959) and the relational view (Dyer and Singh, 1998) focus more on the governance of relations through norms (equity, reciprocity) and atmosphere (trust, commitment).

The industrial network approach is also in other respects an atypical theory. First of all, this approach has been used to study different phenomena where firms (and other organizational actors) interact, either bilaterally or in network settings. Second, the approach has been developed by a group of researchers. It is not uncommon for a theoretical perspective to be initiated and/or propagated by a team of researchers, but in the case of the Industrial Marketing and Purchasing (IMP) Group, the collective nature of the efforts is remarkable. The IMP Group has not only conducted large-scale field studies together and published many books as a collective, but has also organized an annual conference (since 1984) and many research manuscript workshops in connection with its dedicated journal, the *IMP Journal* (since 2019 part of the *Journal of Business and Industrial Marketing*).

The INA and its specific models (the interaction model and the ARA model) have been applied in a multitude of procurement contexts. It has enabled systematic descriptions and analyses and, as a result, has enabled researchers to identify patterns of behaviour as well as providing insightful lessons learned. Still, it has been criticized for not being very concrete in guiding managers in their creation of action plans and effecting strategies. This criticism has been countered by IMP researchers who have argued against the often sparser theoretical models that are more ambitious in offering prescriptive guidance. The IMP philosophy emphasizes the contextual dependency of procurement and supplier relations in business markets and, thus, the importance of performing a thorough description and analysis before moving towards prescription.

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