Networks: Between Markets and Hierarchies

HANS B. THORELLI
Graduate School of Business, Indiana University, Bloomington, Indiana, U.S.A.

Summary

Interorganizational networks generally have been discussed in the context of nonprofit agencies. Providing an alternative between the open market and the internalization of activity the network potentially may be even more important in business. This is especially true in international operations and in industrial and services marketing. Involving technology transfer, information exchange, accounting and finance as well as marketing, network management calls for a holistic approach. To serve as an engine of growth the network also requires strategic planning both at the overall level and in member firms.

INTRODUCTION

The term networks in this article refers to two or more organizations involved in long-term relationships. In the past, the emphasis has been on the analysis of networks of nonprofit organizations (e.g. Aldrich and Whetten, 1981; Benson, 1975; Boissevain, 1974; Fombrun, 1982; Provan, 1983). The claim here is that when seen in a network context a host of strategic issues in business may be better understood by executives and academics alike.

Organizations exist due to economies of scale and specialization, and ability to reduce transactions costs. The resultant division of labor is manifested in a great variety of institutional arrangements. For expository purposes we may think in terms of a spectrum of arrangements, from loose to tight, from arms-length bargaining to total integration, from spot transactions via standing relations to the internalization of markets. Internalization involves the absorption of other organizations or their tasks. At one end of the spectrum is what we may call the open market. At the other we find the firm which is relatively self-sufficient in terms of vertical or functional integration. In some ways these distinctions are analogous to Williamson's (1975) markets and hierarchies, although he would likely include as part of 'markets' a number of in-between forms where we would rather apply the generic term networks. It should be emphasized that networks are not the same as 'administered markets', as a network may comprise only a small part of one or several markets. Indeed, it would be typical in most markets to find a number of competing networks.

Strategic issues typically resolved in a networking context include the following:

positioning of the firm and its product,
marketing channels and franchising,
patent and trademark licensing,
turnkey contracts and ‘systems selling’,
barter and reciprocal trading,
make-lease-or-buy decisions,
split vs. unified sourcing,
transactions between divisions of a company,
cartels,
interlocking directorates,
joint ventures, mergers and acquisitions,
diversification,
internationalization,
vertical integration.

As network activity revolves around issues of this type, a strategic-issue focus should also help in understanding networks and their dynamics.

THE NETWORK PARADIGM—MARKET POLITICS

Probably the most salient part of the environment of any firm is other firms. Interfirm relations have been given surprisingly short shrift in marketing, industrial organization economics and organization theory. The point here is that the entire economy may be viewed as a network of organizations with a vast hierarchy of subordinate, criss-crossing networks. Our focal network is the one intermediary between the single firm and the market, i.e. two or more firms which, due to the intensity of their interaction, constitute a subset of one (or several) market(s). Generically, a network may be viewed as consisting of ‘nodes’ or positions (occupied by firms, households, strategic business units inside a diversified concern, trade associations and other types of organizations) and links manifested by interaction between the positions. Note in passing that positioning of the firm in the network becomes a matter of as great strategic significance as positioning its product in the marketplace. Networks may be tight or loose, depending on the quantity (number), quality (intensity), and type (closeness to the core activity of the parties involved) of interactions between the positions or members. Thus, custom-tailored products may bind a firm tighter into its output network than if it offers mainly standardized models.

Power is the central concept in network analysis. In the parlance of political science we are dealing with the politics of the marketplace. Our working definition of power is the ability to influence the decisions or actions of others. The mere existence of power is often sufficient to condition others. The term influence may be used to indicate that power is actually being exercised. Power too often is thought of as possessed unilaterally. The more typical phenomenon is that of interdependence. An excellent current example of interdependence within the network is the relationship between Argentina and the international banks to which she is so heavily indebted. A default by Argentina would have serious consequences for her—but also for several of her creditors. To avoid one-sided dependence an organization may wish to restrict interaction with a given party in favor of extension of its networks, as in the case of split sourcing.

A cousin of power and influence is trust. While solidly based in the past, trust is really a future-oriented concept. It may perhaps be defined as an assumption or reliance on the part of A that if either A or B encounters a problem in the fulfillment of his implicit or explicit transactional obligations, B may be counted on to do what A would do if B’s resources were at A’s disposal. Trust (brand and vendor reputation, etc.) is important in marketing. Similarly, it is crucial in politics: enjoying ‘the confidence of the voters’ or of the legislature is the key basis of executive power in free societies.
Power, information, money, and utilities flow along the links of the network. No doubt we are talking about a core area of market politics: ‘The inter-organizational network may be conceived as a political economy concerned with the distribution of two scarce resources, money and authority’ (Benson, 1975: 229). For the understanding of the configuration of any particular network, the flows of power and information may actually be more important than those of money and utilities (at least as long as alternative sources of utilities provided are available). Entire networks may be founded as information utilities. For instance, by means of ‘captive’ computer reservation systems United and American Airlines have been pulling travel agents into their networks, in effect achieving a greater degree of vertical integration in the process.

Hammarkvist, Håkansson and Mattsson (1983) posit that a critical mass in terms of quantity and quality of relationships is required before one can really talk about a network, with the accompanying obvious difficulties in defining and measuring this mass. Presumably, tradeoffs exist among quality, type and quantity of relationships. Although it may be doubted that the relationships of a manufacturer of, say, sewing pins with his many end consumers are ‘political’ enough to make us think of a network, the relations between the same manufacturer and his score of distributors would almost invariably be intense enough to make the channels system qualify as such. This illustration suggests that the network idea is especially applicable in industrial and international marketing and to the marketing of complex services—such as strategic planning consultation—as well.

The phenomenon of power—save the marketing channels and, of course, the antitrust literatures—has been quite inadequately dealt with in marketing and related disciplines. As power, influence and trust constitute such important aspects of buyer–seller relationships it is also clear that we have been missing a holistic view of such relationships. This is exactly what the network paradigm will—or should—provide. In this context the question maybe raised why we are talking about networks rather than systems. A simple-minded reason is that by now ‘system’ is a tired term. More importantly, we are taking the network concept to connote a special type of system, one whose internal interdependencies generally change over time.

POSITIONS AND LINKS

Division of labor
The simple fact that division of labor governs organizational life implies that each firm has a mission. Mission may be defined as domain (or scope) plus specific objectives to be attained within the domain (Thorelli, 1968). The domain of any organization may be defined in terms of five dimensions:

- product (or service) offered the environment,
- clientele served,
- functions performed (mode of operating),
- territory,
- time.

For a network to exist there must be at least a partial overlap in domain (e.g. synchronization in terms of time). Should there be total overlap we have a case of ‘head-on’ competition, but there is still room for networking in terms of a trade association,
standardization activities or (in most cultures) cartel-type arrangements. Division of labor and synergistic network opportunities are likely to be more prevalent and more effectively implemented when the overlap in dimensions is much less than complete. The division of labor and the variety of missions have two important implications. First, organizations must engage in a continual struggle for resources requisite to mission attainment. Secondly, for a network to emerge and remain stable there must be a certain minimum of domain consensus among participants (at least implicitly), even though domains are subject to change. We should expect the struggle for resources requisite for survival and growth to be reflected in intra-network friction and conflict as well as cooperation. Clearly, the network is a polity, a ‘political organism’.

**Position**
The position is a semi-autonomous and disaggregatable decision center. In general, it tends to coincide with a firm, a strategic business unit or a profit center; defining the position apart from its environment often presents problems of joint costs, common production or distribution facilities and so on. A position is a location of power to create and/or influence networks. The position a company occupies in a given network depends on at least three major factors: the domain of the company (indicating its role in the division of labor), the position of the company in other networks, and the power of the company relative to other participants in the focal network. Thus position—like, indeed, power itself—is inherently a relational, relativistic concept. We have talked about domain. The importance of multi-network position may be illustrated by a local computer store. It may be in a network with IBM, distributing its personal computer. If it is an exclusive dealer of the attractive IBM PC, the store is likely to be in a strong position in its networks of, say, small business PC buyers and users in the community.

There are at least five interrelated but distinct sources of power of a network participant:

- economic base,
- technology,
- expertise,
- trust,
- legitimacy.

A participant’s power is manifested by the *differential advantage* (short-term, perceived; long-term, real) in one or several of these areas. A holistic view of power is necessary: it may be greater or smaller than the sum of the authorities derived from each source. Some indicators of economic power in an industrial marketing network are market share and absolute size of seller and his share of the buyer’s purchases, the centrality of the seller’s product to the buyer’s core activity. The buyer’s position is strengthened the greater the number of alternate sources of supply, the less the transactions costs involved in switching to another supplier, and the greater his share of the vendor’s total sales. Other important aspects of the economic power base of participants are their relative liquidity, ability to extend credit and to integrate vertically. Superior technology as a source of power is demonstrated in such areas as product and process innovation, quality maintenance, flexibility, logistics management, spare parts availability, and ability to produce to the specifications of the buyer. Cost leadership in production may be viewed as a source of either technology or economic power.
The Greeks, 2000 years ago, coined the phrase, 'knowledge is power'. Expertise as a source of power shows up in such matters as personnel and equipment capabilities in R & D, in applications engineering, in pre- and post-sales service, in the economics of the markets where network members are a part and general awareness of the situation, problems and priorities of other network members. Trust may be viewed as confidence in the continuation of a mutually satisfying relationship and in the awareness of other parties of what this requires of their performance as network members. Trust is based on reputation and, more importantly, on past performance. It is also built by personal friendship and social bonds, established in day-to-day interaction. It is manifested by mutual feelings of belongingness and interdependence. Especially in Oriental cultures, trust is a vital supplement to contractual arrangements; it may even take their place. In pre- and extra-contractual contexts the establishment of trust frequently takes more time and patience than Western executives spontaneously would like to invest.

Formal legitimacy as a source of power may derive from long-term contracts, part ownership of another network member, interlocking directorates, joint-venture arrangements, etc. It may also originate in patent rights or other privileges conferred by government, such as being the 'chosen instrument' in the supply of defense equipment or having an 'inside track' in government procurement by simply being a national of the same country.

We tend to think that the mere possession (or perceived possession) of power is sufficient to establish a position of importance in a network. For this reason the strategic use of power in everyday network relations is denoted as 'influence' by way of differentiation of terms. As usual, influence may be wielded in either a rewarding or penalizing direction.

Links
Using the structure–strategy metaphor, position is clearly a structural concept, while strategy seems more closely associated with the links or interpositional relationships. The links constitute a reflection and recognition of interdependence, as opposed to the autonomy postulated by the classic theory of the firm. The daily activities in the network may be viewed as either building or drawing on differential advantage. All sources of differential advantage are involved. Thus, we find links involving economic performance, technology transfer, diffusion of know-how and expertise, and forging or exploitation of trust and the flow of legitimacy. Conceptually distinct, these flows or, multiple bonds, (Boissevain, 1974) are clearly interrelated in practice. The profile (mix) of linkages in a given network constitutes the essence of the culture of that network.

Links are based on relationships over time. Relationships differ from individual transactions. Relationships, such as standing contracts, comprise streams of transactions or exchanges, which may or may not be directly tied in with any specific delivery of goods. Indeed, in the manyfold of transactions it would often be difficult to say where one leaves off and the next begins. Building networks involves expenditure of money and executive talent over many periods of time. It follows that resources spent on all aspects of networking other than everyday maintenance are to be regarded as strategic market investments (cf. Dean, 1966). Some of these may be 'hardware' investments in customer-specific productive equipment, inventory, R & D, and product development. Others are

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1 In the first decade after World War II General Electric failed to sell its jet engines to the commercial airlines until it switched from emphasizing the technical performance characteristics which had impressed the military to learning more about the economics of airline operation than was known by most airline executives.
'software' investments in building expertise, trust or long-term contracts. In consumer marketing, software investments are especially prominent in franchising.

Generally, strategic software investments are more important in industrial marketing and especially when international trade is involved. The fact that American business in the last decade or two has seemed much less successful abroad than at home in large part may be due to our lack of 'savvy' about linkages going beyond economic performance and formal legitimacy in cross-cultural contexts, where investment in trust, expertise and other software often plays a crucial role. Admittedly, the payoff rates and amounts of network investments, especially those of the software type, are often difficult to establish in practice. Nevertheless, we would predict that the age-old accounting convention of treating all market-related outlays as current expense will some day be subject to amendment. In the meantime, it would seem reasonable to subject future marketing expenses to multi-period analysis in an effort to isolate current expense from what should really be dealt with as investments from a strategic planning point of view.

NETWORK DYNAMICS

At least four distinct dynamic processes characterize network membership:

entry,
positioning,
repositioning,
exit.

Many entry and exit barriers are of types similar to those identified by Bain (1956) and Yip (1982) in the case of 'market' entry and exit. The network approach suggests that additional emphasis should be given to transactions costs as facilitating or retarding joining or leaving networks. We are familiar with a business which supplies the bulk of Sears needs of ornamental railing in the Middle West. The firm is keenly aware that the Sears buyer would think twice before incurring the transactions cost (including the risk) of switching to another supplier. In addition, the existing linkage in itself constitutes an entry barrier to outsiders, in that the supplier is custom-making his railing to Sears' specifications, special logistics arrangements have been made, and relationships of trust and social bonds have been built up over a long period of years. Clearly, the existing linkage also constitutes an exit barrier for both Sears and its supplier.

On entering a network the new member faces the strategic challenge of positioning himself among the pre-existing members of the network. The dimensions of domain and power are again relevant here. The established members may have some repositioning to do to accommodate the new entrant. In fact, due to both internal and external change repositioning may be viewed as a perpetual process.

Under conditions of pure competition the market is guided by an invisible hand. Using an analogous metaphor we may say that the network is surrounded by an invisible wall of varying thickness and height. The wall comes equipped with 'strategic windows' providing access to other networks, and sometimes they may be pried open by outsiders wanting to join the inside network. Continuing our freewheeling examination of network ecology we observe that the boundaries around most networks are rather flexible. They are responding
to environmental impulses from changing public policies, lifestyles, technologies, as well as neighboring networks.

Just like individual members, the network as a whole may use any one or a combination of the five dimensions of domain as avenues of growth (or contraction). New impromptu or lasting networks may be formed to effectuate systems selling and turnkey projects, notably in international marketing. Systems and turnkey marketing are examples of growth by diversification and/or integration in networking. We may observe that forward integration is typically more difficult than backward, in that forward integration by definition implies entry into a new market. This is not the case with backward integration, where a buyer simply becomes his own supplier. Such a change would be one instance of what may be termed ‘network failure’, perhaps as commonplace as market failure.

Considering the plethora of internal and external centrifugal and centripetal forces in the interplay among network members and in the network–environment interface, it is self-evident that blissful equilibrium is not to be attained. Cooperation is indispensable, and some measure of both intra- and inter-network competition unavoidable. Indeed, some of the most constructive variants of competition in present-day market economies are found in the rivalry between vertical systems, such as that between the Sears–supplier networks and the manufacturer-discounter networks. There are some indications that potential competition from alternate members or alternate configurations is also a highly relevant phenomenon in the networking context. Beyond direct competition we encounter the types of conflict customary in vertical channel networks.

It has been claimed that over time networks grow stronger, in the sense of moving from loose to tight, from poor internal fit to greater degrees of integration (IVA-NYTT, 1982). We would question that this notion is generally valid. Rather, it would seem that in the absence of conscious coordinative effort—why not call it network management?—networks would tend to disintegrate under the impact of entropy. This again brings the issue of power to the fore. It is not by accident that classic theory about vertical distribution systems talks about ‘channel captains’ (in networks of which Sears is a part, that distributor is generally the coordinative force; in automobile distribution systems the manufacturer typically plays that role, and so on). The generation, distribution and use of power in networks is indeed an area of research at once vital and promising.

THE NETWORK AND THE THEORIES OF THE FIRM AND INDUSTRIAL ORGANIZATION

Due to the abnegation of institutional and behavior factors the classical theory of the firm does not offer the network analyst a suitable point of departure. But then, of course, that theory was invented to explain markets rather than management. The fact that this is micro for the sake of macro may well explain why the classic theory of the firm never emancipated much beyond its Euclidean diagrams.

There are, however, more recent theories of the firm of greater interest here. One is the structure-strategy (conduct)-performance paradigm (e.g. Thorelli, 1968 and Preston, 1977) that takes a behavioralist and ecologic view of organizational growth and survival. It is clear that this kind of contingency view could be extended to comprise the network—simply by injecting at least one vendor or buying organization as an explicit part of the task environment of the focal firm. Indeed, it is submitted that this kind of synthesis should be attempted, as it is likely to yield additional insights.
Also closely interwoven with political science is the 'stakeholder' theory that sees the firm as a community of interest groups, comprising such elements as customers, owners and other creditors, employees, vendors, dealers, competitors, government and management (e.g. March, 1962; Thorelli, 1965; Arndt, 1978; Pfeffer and Salancik, 1978). Obviously, stakeholder theory can be regarded as a special case of network theory, especially to the extent that the stakeholder groups are organized. Indeed the present article is also a special case of network theory, focusing on the buyer–seller policy.

The most elaborate approach to a modern theory of the firm is probably Williamson's (1975). The focus here is on explaining under what circumstances one might expect transactions to be externalized (taking place in the market) or internalized ('hierarchical transactions . . . for which a single administrative entity spans both sides of the transaction'). Williamson's 'administrative entity', or hierarchy, seems essentially a euphemism for the corporation. We are really not taking issue with Williamson's remarkable treatment. Our concern is that it may be overly polarized in that it deals somewhat skimpily with the rich institutional arrangements in the many types of markets encountered between the spot transaction and total internalization. Williamson also does not deal with the network as a subset of any one or several markets. Yet corporations clearly see a variety of network arrangements as highly viable alternatives in the resolution of many strategic issues, including several of interest to Williamson. Companies do this even though, as we have seen, network management (or 'maintenance' in a broad sense) involves a considerable and multifaceted effort. The effectiveness, efficiencies or risk-reduction gained in such instances is felt to exceed the transactions cost of myriad spot transactions or the major resource commitments, difficulties of performance evaluation, etc. typically associated with all-out internalization.

Industrial organization theory tends to deal with competing firms in a given market. In a sense it may be viewed as a case of attenuated network theory. A more elaborate network theory may some day help explain why oligopoly results in constructive competition in some industries (ethical drugs, computers) and in relative stagnation in others (light bulbs, chain saws). The network paradigm is not to be viewed as a substitute for any theory of the firm, of markets, or industrial organization but rather as a supplement, a viewpoint with both normative and positive implications.

NETWORKS IN PRACTICE

Networks are ubiquitous. Perhaps the most obvious example is distribution channel systems. When the analysis of such systems extends to matters of power, influence, trust, expertise, and information flow, writers are really making use of the network paradigm. An equally pertinent area of network application is franchising. At the core of most successful franchise systems we find mutual interdependence and trust based on standing relationships and an entire web of linkages between system members. The resurging practices of barter, countertrade and other forms of reciprocal dealing will often qualify as networks. These practices are not confined to east–west and north–south trade. The Swedes accepted General Electric's bid to provide the jet engines for Sweden's new JAS fighter only on condition that GE let important subcontracts to local producers. 'The ultimate international marketing case', involving the General Dynamics F16 fighter, incorporated literally dozens of similar international deals and billions of dollars over a long period of time. A number of
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Governments and defense departments became members of this vast network (Becker, 1980). The secret of most reciprocal arrangements, of course, is that at least one of the parties is not sure that he could make as advantageous a deal in the open market.

We have indicated that networks tend to be particularly prevalent in international marketing, in large part due to the significance of trust in trade between nations. The OPEC cartel may be seen as one of several networks binding governments as well as state and private oil companies together. Foreign companies trying to break into Japanese markets have to learn to take the long-term view and to build the personal contacts and links which make them acceptable members of the local ‘family’. The Pilkington Group, suppliers of the glass going into two-thirds of all Japanese-made sunglasses, is a case in point. According to the local marketing planning manager Pilkington’s formula has been to tie itself ‘closely to the intricate network of sub-contractors which do the cutting, edging, hardening and polishing of the glass before it reaches the sunglass maker. . . . It is important for us to show a company at each point of the chain that they can rely on us to help them, if necessary’ (Milmo, 1983: 21). Pilkington has gained the allegiance of the sunglass makers by buying and exporting sizeable quantities of finished lenses from them.

Two interesting domestic network illustrations are provided by IBM and American Hospital Supply. The phenomenal success of the IBM personal computer has tended to make it a ‘standard-setter’ for both hardware and software peripherals. It is evident that this has been advantageous for constituent (Microsoft as provider of the IBM MS-DOS operating system) and ‘spontaneous’ members (suppliers of IBM compatibles to customers other than IBM) as well as to IBM during the 1981–83 buildup phase. The future outlook for the ‘self-made dependents’ is much less clear (Wall Street Journal, 12 Dec., 1983). Some of the small fry may indeed be ‘caught in the net’!

The American Hospital Supply network was created as a strategic response to environmental developments. Beginning in 1977 growing numbers of hospitals were meeting cost-containment pressures through centralized buying to obtain volume discounts. American Hospital Supply, wanting to capitalize on this enormous sales potential, signed ‘blanket’ agreements with several buying groups, among them Voluntary Hospitals of America, a coalition of some 30 hospitals (Pillsbury, 1982). Though no prices were listed, American agreed as ‘a matter of trust’ that its prices would be ‘competitive’. American also agreed to hold price increases below specified percentages and to pay volume rebates based on the hospitals’ annual purchases per bed. No hospital could qualify for a rebate unless all other hospitals in the group reached a required minimum volume, thereby generating considerable peer pressure in the network.

American also secured the right to ‘match it’ or to ‘walk away’—provisions allowing the company to see competitors’ prices in order to match them or to walk away from low-profit business. The supply company also agreed to provide various forms of consulting services, including in some cases of materials-management advice the recommendation that American take charge of the procurement activities of customer hospitals. In a civil antitrust suit the lower court decided that several aspects of this intimate network were anticompetitive. Overruling the District Court, the Circuit Court of Appeals in effect concluded that the AHS network was not an unreasonable restraint of trade and that plenty of competition remains with smaller, more specialized suppliers.

Networks may also comprise competitors, even in antitrust-conscious America. National Semiconductor is joined with Motorola in a second-source agreement; the two companies will produce each other’s semiconductor chips. Such second-source agreements are common
in the electronics industry to insure that users (also part of the network) have alternate suppliers of parts. We have it from an inside source that in the 1982 recession aluminum companies, in a collective effort to save on transportation, would often ship the metal from the plant closest to a given customer regardless of whether the actual seller or a competitor was the owner of that plant. Daniel Prins, the imaginative president of Jefferson Bus Lines of Minneapolis, not only turned the bus line itself into a profitable operation, but found he could further increase income by selling the service of its mechanics to competing firms. His next move: offering new bus companies a package of services, ranging from the financing and maintenance of buses to advertising, promotion and accounting, to help get them 'rolling' (Time, 2 May, 1983).

Even though perceived as beneficial to the parties involved, not all open market transactions are in the public interest (e.g. the sale of liquor to minors). Neither are all intra-corporate transactions, some of which may discriminate unduly against outside suppliers or buyers, or simply manifest inefficiency (the period of Ford Motor history when the company pursued total vertical integration towards glassworks and Brazilian rubber tree plantations comes to mind). It should come as no surprise, therefore, that some of the networks referred to may strike the reader as questionable or even undesirable from a public point of view. In the U.S.A. price and production cartels, as well as certain vertical restraints between manufacturers and dealers of an exclusionary nature, represent types of networks which are illegal due to their interference with the open market and/or with equal entrepreneurial opportunity. While its effectiveness may be in doubt the Foreign Corrupt Practices Act represents a pioneering American initiative to restrict the networks of business—government corruption which constitute a blockage on the road to economic progress in most of the developing countries.

STRATEGIC IMPLICATIONS OF THE NETWORK PARADIGM

We have already pointed to some important implications of the network paradigm. In its strategic planning the company should not only keep one or even several theories of the firm in mind, it should also think in network terms to open new perspectives of structure, strategy and performance. For instance, the network may be viewed as an alternative to vertical integration and to diversification, and as an instrument for reaching new clienteles and/or additional countries. In effect, it may serve as an engine of growth. A network engagement may reduce risk relative to both spot market participation and total integration. It may be an instrument a company could use to retain some measure of control over its own differential advantage—and thus over its own fate.

Network thinking also brings to the fore a long-term view in fairly sharp contrast to the hectic instant-profit perspective more characteristic of American businessmen than many others. Directly related to this is the notion that marketing-related outlays in many instances are to be regarded as investments from a strategic management standpoint. To the conventional elements of marketing strategy—product, price, promotion, distribution and service—the network paradigm adds at least three: power, influence and trust.

A few illustrative implications may be added. At the core of network management is marketing; but it involves more: technology transfer, information exchange, accounting and finance (the network as investment object) as well as public and interpersonal relations. It is, in effect, a subset of general management, and a holistic view is called for. It is
important that the roles of the various functional areas are integrated, both for internal effectiveness in serving other network members and for a unified approach to them. This calls for a generalist—'account executive' or 'Director of Customer Relations'—coordinating the effort. In industrial as well as international management it becomes natural to apply an adapted version of portfolio analysis of major network clients or vendors.

Networking places a new emphasis on personnel. Power, expertise, perceived trustworthiness and social bonds are often person-specific rather than firm-specific. A good example is the ability of account executives to take clients with them as they move from one advertising agency or law firm to another.

In current management practice and research much is made of the importance of market share as a measure of a firm's position (and a correlate of profitability). However, the network paradigm suggests that the quality—the intensity and strength of customer and supplier relations—of a position may be just as important a dimension as its quantitative expression in terms of sales volume or market share. Network relations should be subject to systematic evaluation. It may also be that the definition of served market needs reconsideration when it is approached from a network perspective.

For some strategic management purposes it may be helpful to look upon the entire network as a single organization. This may be the case when joint product development is being considered, for instance. Considering the functional proximity of other network members, it is also natural to take this view in planning management information systems. Other network members, too, will expect a heavy dose of information sharing. In the future most networks of firms will be served by corresponding networks of computers.

The tenor of this section has been normative and focused on managerial implications for network members. Presumably the network paradigm also has public policy implications. While no doubt most networks are constructive from a general welfare standpoint, we have suggested that some of them, or certain network practices, may be questionable. As far as the U.S.A., the Bundesrepublik and other countries with vigorous antitrust laws are concerned, both the laws and the networks themselves may need some re-examination. A key point in this context is that by definition any network will have at least some exclusionary effect. Clearly, too, there is a great need for academic research on networks.

COMPETITION IS DEAD—LONG LIVE COMPETITION!

Ever since the days of Berle and Means (1932) we have been told that markets are becoming increasingly administered or 'domesticated' (Arndt, 1979). In reading some of the scarce writings about marketing networks one soon picks up the same idea, coupled with the inference that competition is on the decline. Though largely unproven these assertions may contain a grain of truth. However, we submit that neither the market nor competition are ready for relegation to some Nordic folklore museum.

Between networks and 'administered systems' there are many discontinuities and niches where the market is open and the competitive interplay intense. Indeed, the friction in these interstices is an antidote to the complete bureaucratization of Western economies that otherwise might conceivably occur. Equally important is the competition between networks, e.g. between different vertical distribution systems (McCammon and Bates, 1977). We should also be mindful of the pro-competitive impact of what may be termed network
shocks. Examples include the recent deregulation of air and truck transportation as well as telecommunications in the United States. In the remarkably short period of 10 years the world energy market responded to the OPEC 'monopoly' dramatically enough to put the cartel in strong competition with outside oil producers and, even more, with other forms of energy. Even the People's Republic of China has chosen to introduce a major open market-like sector in its largest industry (agriculture), with sensational effects on productivity and rural standards of living. It would be difficult to find a better example of shock therapy against market 'domestication' run amuck.

Let us also posit as a possibility that networks and other forms of quasi-markets may be subject to cyclical developments. In the buildup and expansion phases the most powerful participant(s) do their best to bring even greater parts of the task environment (including, typically, the network itself) under control. In doing so, however, they gradually consume or lose their competitive advantage under the impact of the maturing product life cycle, increasing bureaucratization and so on. During the 'shakeout' in the maturity phase firms might strive to minimize competitive threats by using two of several strategies, tighter networks and vertical integration. Either may actually open new niches for 'independent' competitors. In the decline phase the open market is resurrected, and the process may start all over again. It is important to note that networks do not of themselves imply a 'hardening of the arteries' of the marketplace, as evidenced by numerous cases of joint product development in high-technology areas.

Note, too, that inter-network competition is vastly intensified in the modern economy by inter-product and inter-materials competition as the product, materials and alternate technology spectra increasingly get filled in. It would be difficult to exaggerate the importance of this dimension of competition (Thorelli and Thorelli, 1977: Ch. 2).

The relationship between competition and vertical integration (or 'internalization') is a fascinating one. Vertical integration has always been a source of potential competition—a theme detailed in Williamson (1975). It is likely to become an even more tangible competitive force in an era of proliferating technologies and increasingly flexible manufacturing systems (robotics, CAM/CAD, etc.). This is also perceived as a live possibility in the case of computer software. Bill Baker, founder of Information Unlimited Software, is quoted (Wall Street Journal, 12 December, 1983) as saying that

IBM put us on the map. It made me a multimillionaire. All these wonderful things they did for us they did because they wanted to and needed us at the time. The second you think IBM is benevolent, or likes you, you can get real flunked out.

Just because you sell them one product doesn't mean you'll ever sell them another product again.

Whether this perception of Big Blue is correct or not we may assume that it keeps Mr. Baker on his toes. On the other side of the argument, however, vertical integration may have the complementary disadvantage of locking the company into a massive and inflexible commitment to a highly specialized capital-intensive activity (Rumelt, 1974). If this were not the case, the drive towards self-sufficiency would surely make such integration much more commonplace.

In sum, we may expect that networks will grow in number and sophistication in the future, notably in the intermediate goods, services and international areas. The growth will accelerate to the extent that managers and academics become more conscious of the great potential of this interjacent between the firm and the open market, and greater attention is
paid to the development of network management technology. Fortunately, however, the end is not in sight for the open market with competition in its most multifaceted forms.

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