4

Networks in the Economy

Recent college graduates are fond of saying that they have joined the "real world" after their four (or more) years of higher education. Getting a job is a central part of joining this real world, and one obtains such a job after being "on the job market." College seniors learn the art of the résumé, attend job fairs, and scan online job postings looking for openings that suit them. The job market is discussed almost as if it were a distinct place where employers can meet up with unemployed college graduates whom they have never before met and hire the ones they need and like. Indeed, corporate employers often set up brief meetings with graduating college seniors to interview and evaluate them as prospective employees.

But how in fact do college graduates get jobs in the real world? More generally, how does anyone get a job? If we pay less attention to how people *talk* about the job market and focus more on the actual processes through which employers match up with employees, we find that labor markets are less anonymous and much more socially structured than one might expect. Prospective employees rarely walk into an employer's office "off the street" and get a job offer. Usually, their approach to an employer involves some combination of sponsorship, brokering, introduction, or prior connection. In other words, employees link up with employers through social **networks**. A job seeker might hear about a job opening through a friend or the friend of a friend. He or she might secure an interview because some family member has put in a good word. Or perhaps a member of the job seeker's college fraternity or sorority works for a corporation and provides access.

Labor markets are structured by various kinds of social networks: friends, kin and family, university alumni, formal organizations such as fraternities

and sororities, neighbors, and informal acquaintances. Some employers, for instance, deliberately use their current workforce to recruit new workers by asking their workers if they have any hardworking friends or relatives who need a job. The employer may never have to advertise a job opening publicly. Thus, both prospective employers and prospective employees mobilize these networks—on one hand to hire new employees and on the other to get a job.

Today, a more high-tech version of this process occurs through the online networking site LinkedIn. LinkedIn users build online networks of past and present colleagues and classmates. This makes it possible for job seekers to identify whether they have any direct or indirect connections to employers—and for managers to search for prospective hires to which they are already connected. As this book goes to press, LinkedIn has more than 100 million users worldwide, and all the *Fortune* 500 companies have executives who are users (Gaudin 2011).

In this chapter, we will discuss the role of networks and relationships in all kinds of markets. Such relationships exist at many different levels, ranging from personal friendships between individuals to formal joint ventures among corporations to diplomatic trade agreements between different countries. Many different kinds of relationships exist at each level, and they can vary in quality and intensity. For example, kinship and friendship are two distinct types of relationships at the individual level, and each entails a different set of expectations and obligations. Intensity varies as well. Two persons can be extremely close friends, pretty good friends, or just friends ("friends with benefits" is yet another kind of relationship). They can be close relatives (e.g., siblings) or distant kin (second cousins twice removed).

Similarly, corporations can have a variety of relationships with each other: interlocking directorates, joint-venture agreements, equity ties, loans, research and development (R&D) partnerships, collaborative manufacturing arrangements, and so on. All of these different types of intercorporate relationships can vary in intensity. Loans can be big or small. Firms can own many or few of each other's shares. R&D partnerships can involve big budgets or little ones. Collaborative arrangements can be set up for the short term or the long run.

If one reads only introductory economics textbooks, one may find it tempting to conceive of markets as amorphous and anonymous places where people and firms transact. One can imagine competitive markets as involving a kind of price-cutting Hobbesian war of all against all: Everyone focuses on the bottom line and adjusts the prices and quantities of what they buy and sell to maximize profits. In fact, as we will see, markets are structured at both the individual and organizational levels by networks of relationships. Relationships introduce "stickiness" into the market: Economic transactions

unfold over the long term, not just the short term. And transactions involve reciprocities, obligations, trust, and mutual understandings. What people do as individuals, and what firms do as organizations, depends very much on the kinds of networks in which they are embedded. One cannot understand economic behavior without understanding social context.

Each particular interpersonal or intercorporate relationship involves two parties (i.e., such relationships are bilateral), but an entire network consists of the whole set of relationships among all parties. Economic networks structure a market, or an economy, in a way that is very different from the economist's ordinary meaning of *market structure*. The latter term is used to distinguish perfectly competitive markets from monopolies, monopsonies, or oligopolies. When economists discuss market structure, they refer to the number of buyers and sellers in the market (and the ease of entry and exit) rather than to the specific relationships among them. Market structure means something very different for a sociologist.

We will argue that the ways in which markets are structured, in the sociological sense, affect how markets behave. To understand a particular market, one needs to know about the buyers and sellers (e.g., how many there are), the kind of commodity being sold, the way the market is regulated, and so on. A sociologist would add to this list the social relationships between buyers and sellers.

For example, non-Japanese firms often have a difficult time penetrating the Japanese domestic market. One reason for this has to do with how the Japanese economy is structured. Many of the largest Japanese corporations are organized into multiorganizational groupings and networks termed *keiretsu*. Member corporations are linked through loans, shareholdings, joint projects, corporate directors, and other, less formal, ties (Lincoln and Gerlach 2004). Member firms strongly favor trading with each other rather than with outsiders. That is, if a *keiretsu*-member corporation needs additional inputs from its suppliers, it will look first to the *keiretsu*-member supplier. This kind of relationship-based favoritism makes it extremely difficult for foreign non-*keiretsu*-member firms to break into Japanese markets and sell their goods (Gerlach 1992). To understand the obstacles faced by foreign firms, one must understand the intercorporate networks and relationships that link together Japanese firms.

Networks also matter at the individual level. People use their social networks to gather all kinds of information about job openings, market opportunities, new products, what the competition is up to, what their customers want, and so on. They also use networks to secure favors. In this second capacity, relationships are used not so much as channels of information but as clusters of reciprocal obligations and responsibilities.

Someone who is a true friend usually feels obliged to assist his or her friends if they need it. More extreme forms of assistance can shade into nepotism and even corruption, but there are many ways to help out. These personal connections are not uniformly advantageous. If one is applying for a job with a firm, it helps to have a good friend "on the inside." Such friendship benefits the applicant but hurts all those competing with him or her who have no such friend. Friendship imposes costs as well as provides advantages: Sometimes your friends help you, but at other times you are obliged to help them out.

Wherever networks play a role in the economy, whether at the individual or the corporate level (or somewhere in between), it becomes important to understand where such networks come from. What pattern do they follow? How do network links form? How are they sustained over time? Furthermore, individuals and corporations are usually embedded in multiple networks at the same time. For example, a person may have one network of friends, another network of kin, and yet another network of coworkers. One of these networks may have a greater effect than the others for different economic outcomes, and there may be varying degrees of overlap among them. Figuring out why some networks matter more than others is part of the puzzle.

What Is a Network?

Considered most abstractly, networks consist of sets of relationships, ties, or links between things. For our purposes, these things are economic actors of one stripe or another: individual persons, firms, formal organizations, and so on. There are many different types of relationships, which can vary in a number of different ways. Links vary in their strength (e.g., mere acquaintances versus intimate friends), their degree of formalization (explicit contractual agreements versus implicit understandings), and duration (short-term versus long-term relationships). One can also distinguish between direct and indirect ties (consider the difference between friends and friends of friends). Networks exist at different levels (personal, corporate, national), and these multiple levels can affect each other (e.g., a salesperson's income depends on individual-level customer networks but also on firm-level relationships to creditors).

Whatever their characteristics, network connections matter because they involve relationships. Personal relationships entail mutual obligations and expectations, a fuller sense of trust and reciprocity, mutual knowledge, greater flexibility and give-and-take, and so on. For instance, to be someone's

brother isn't simply a genealogical connection; it also involves the obligations that family members have to each other. One is more likely to be able to call on a brother than on another person for help, information, and resources. One trusts one's brother and vice versa. People do favors for their brothers because, in the long run, they expect that their brothers will reciprocate and do favors for them, but also because it is the right thing to do.

Sociologists have been studying various kinds of social networks for many decades and have developed a number of useful analytic techniques (Wasserman and Faust 1994). Sociology offers a general vocabulary with which to speak about networks, and it has been adopted by other researchers as they have become interested in networks (e.g., physicists such as Albert-László Barabási and Duncan Watts; see Barabási 2003; Watts 1999). Some of the concepts refer to the global features of entire networks, whereas others characterize the positions of particular persons or firms within the network. Globally, one might wish to know how centralized a network is and whether or not it is divided into subgroups. Exhibit 4.1 illustrates the difference between a centralized network and a decentralized network, and Exhibit 4.2 presents a network made up of three subgroups.

Sociologists distinguish between dense networks (in which there are many links between the members) and sparse ones (in which there are few). Researchers also determine the positions of particular individuals within the network. Within a friendship network, for example, one might want to know whether a person is at the center of the group or on the periphery. (In Exhibit 4.1, Person A is more centrally positioned than Person B.) In friendship networks, central persons often have higher social status than marginal persons. It is sometimes important to be able to classify people into the different network subgroups. (In Exhibit 4.2, Persons C and D are in the same

Exhibit 4.1 Network Centralization

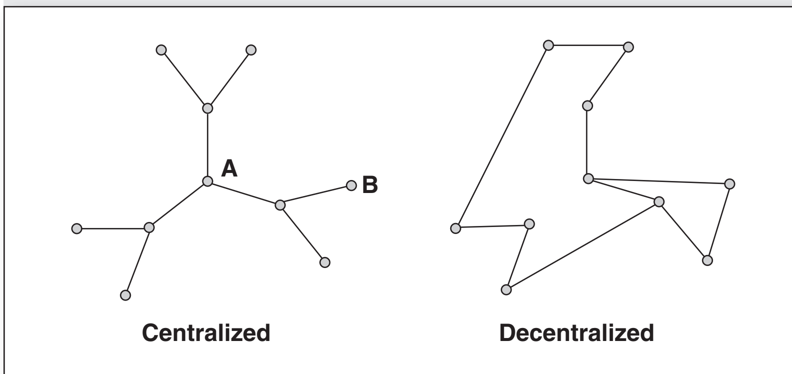
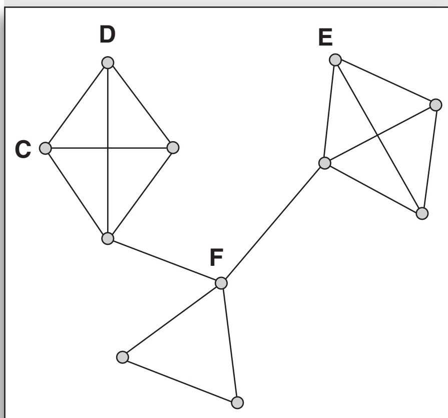


Exhibit 4.2 Network Cliques



subgroup but in a different one from Person E. Person F occupies an intermediary position between groups.)

Why Networks Matter

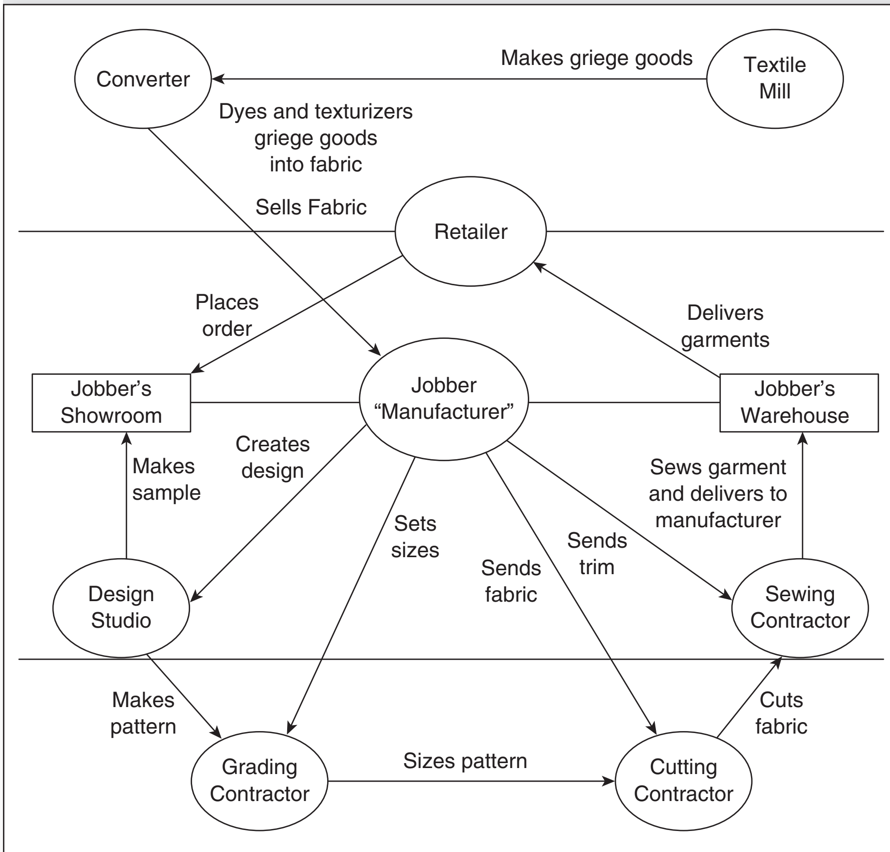
Networks matter because they affect economic performance. Firms can enjoy higher profits and people can have better careers by virtue of the types of networks in which they are embedded. Brian Uzzi's (1996, 1997) research on the New York garment industry illustrates the kind of firm-level benefits that particular kinds of networks can bestow. The garment industry is populated by many small firms that perform highly specific tasks. Clothing manufacturers do very little work themselves: They mostly contract it out to specialist firms and then coordinate the specific operations. Thus, for example, fabric is sent out to a cutting contractor to be cut according to patterns created by a grading contractor. The cut fabric then goes to a sewing contractor, who sews it (Uzzi 1997:39–40). In effect, the manufacturer sits at the middle of a network of contractors, coordinating and monitoring their specialized activities.

Exhibit 4.3 is a schematic representation of the connections a typical clothing manufacturer (also known as a "jobber") has with its contractors. With so many interconnected firms, managers in the garment industry spend a considerable amount of their time managing relationships with other firms.

Uzzi argues that firms relate to each other in two different ways: They can have "arm's-length" or "embedded" ties. **Arm's-length ties** are akin to the proverbial business relationships: self-interested, contractually specified, highly formalized, short-term. In contrast, **embedded ties** are much closer, special relationships. They involve repeated transactions over long periods of time. Many of the arrangements are negotiated on the basis of implicit understandings and without the need for formal contracts, and they can be easily modified if need be. Embedded ties are not just business arrangements but are also personal.

According to Uzzi, compared with arm's-length relationships, embedded ties provide three kinds of benefits: trust, information, and joint problem solving. The advantage of trust in a business relationship is that the two

Exhibit 4.3 Typical Interfirm Network in the Apparel Industry's Better Dress Sector



parties enjoy access to valuable but hard-to-specify and hard-to-price resources, and they know they will not be taken advantage of by each other. Embedded ties also facilitate the communication of rich, informal, credible, detailed, and sometimes proprietary information about each other's needs and circumstances. Such communication goes far beyond the price and quantity information normally provided as part of an arm's-length transaction. Finally, embedded ties create the basis for joint problem solving. When things don't work out, when surprises, accidents, or unforeseen contingencies occur, the two parties adapt and work things out, cooperating to make the best of a bad situation.

Uzzi showed that because of these three benefits, embedded ties can improve a firm's performance, but under some circumstances, too much

embeddedness can be a liability. For instance, a subcontractor that does business with a single customer will certainly do better if the relationship is an embedded one: The customer can be trusted, information flows easily, and problems can be worked out. But if the customer gets into financial difficulty, the subcontractor's heavy reliance on it will become problematic. And having only embedded ties with other firms that themselves have only embedded ties runs the risk of the business equivalent of incest: The firm becomes trapped in a closed network cut off from new sources of information and new opportunities.

Uzzi's work focused on the garment industry, but networks appear in many different kinds of markets. Powell et al. (2005) have shown how firm networks affect firm performance in the emerging biotechnology industry. Uzzi and Spiro (2005) studied Broadway musicals to show how performance in creative industries is influenced by network effects. Wayne Baker (1984) analyzed networks of traders in Chicago's stock options market. He found that as trading activity and numbers of traders increased, the market split up into subgroups or cliques. Those inside a subgroup traded more within their own group and less to people in other groups. Baker's evidence shows that this splintering of the overall market into subgroups had the effect of increasing price volatility. The network structure of the market affected how unpredictable prices would be.

The emergence of such networks shapes markets so that they do not look like the atomized, anonymous markets of economic theory. As economists conceptualize them, competitive markets are characterized by the law of indifference (see Jevons 1931; Landa 1981). This means that market traders really don't care about each other's personal characteristics or about social relationships. The only things that matter are the price and quantity of the good. In such a world, anyone will trade with anyone else, so long as the "money is green" or the "price is right." Issues of trust, or special relationships, simply do not arise. In network terms, traders are equally likely to trade with each other, so the network that forms is a random one. Yet in the real world, markets often display a nonrandom structure in which transactions are repeatedly built around embedded ties and social relationships. Trading partners are not selected at random.

Individual Networks

Networks exist at multiple levels, depending on who the relationships are between. One can speak of a global network that knits together nations through international trade. Or, at a lower level, one can consider the network

that links together persons who trade in a weekend flea market. In this section, we shall consider how personal networks operate in the economy.

Networks and Employment

One of the most important ways in which networks affect the economy is through their influence on labor markets. Social networks get used on both sides of the market, by buyers (employers) and sellers (employees) of labor power. Roberto Fernandez and Nancy Weinberg (1997) demonstrate the importance of employee social networks as a tool for businesses to recruit new employees. Frequently an organization that needs to hire will not advertise its open positions in newspapers or other public media. Instead, it notifies its current employees and invites them to refer potential candidates (of course, many employers use both strategies at the same time). Fernandez and Weinberg examined the hiring practices of a large American retail bank. They found that referrals (prospective employees who were referred by current employees) were more likely than nonreferrals to be called in for job interviews and much more likely to be offered positions. Specifically, 30% of referrals received job offers from the bank, compared with only 3% of external nonreferral applicants (p. 892). Thus, having an inside connection made a huge difference for an applicant's chances of success.

Fernandez and Weinberg offer several explanations for the advantage that social relations conferred. Among other things, such relations give both the employer and the prospective employee accurate and detailed information about each other. They allow for quicker and more informal recruitment. In addition, new employees who have in effect been "sponsored" by current employees often feel an obligation to perform extra well to justify their sponsors' endorsement of their character and ability. Thus, the existence of a social tie between current employee and applicant is good for both sides: The employer knows more about the applicant and can expect him or her to try to do a good job, and the applicant enjoys a better chance of getting the job he or she wants.

Recruitment networks are not, however, an unblemished social good. Those who are "networked" gain an advantage at the expense of those who are not. Because Americans' social networks are heavily structured along race, ethnic, familial, class, and neighborhood lines, by using current employees to recruit future employees an employer can inadvertently hire in a highly discriminatory manner. For example, a factory in the city of Chicago that has a predominantly Polish American workforce may wish to use its employees to find new workers, but Polish American social networks (friendship, kinship, and so on) mostly include other

Polish Americans and are unlikely to include many African Americans, Latinos, or people from other groups. Thus, the factory will unintentionally discriminate by hiring primarily people of the same or similar social background as the current employees.

Reliance on informal networks for hiring is heaviest among small businesses. Large corporations are more likely to use the formal apparatus of official searches, public announcements, applications, and interviews. This does not mean that informal networks aren't important, however, because taken as a group, small businesses account for a significant proportion of total employment in the United States. In 2007, U.S. firms employing fewer than 20 persons numbered 6.6 million and accounted for about 25% of the U.S. workforce (U.S. Census Bureau 2011f).

A very different type of recruitment occurs in "creative" industries, such as the Hollywood film industry, where people do not get permanent jobs so much as participate in shorter-term projects (e.g., making a movie, cutting a record, performing a play). Social networks again matter, but rather than firms and individuals seeking out each other to establish long-term employment arrangements, actors, producers, directors, cinematographers, editors, composers, and others seek each other out to do projects together (Faulkner and Anderson 1987). As persons in the film industry, for example, build up their careers (accumulating "credits"), they establish long-term working relationships and alliances with other persons and often try to work together again in future projects. Producers, directors, and cinematographers are particularly likely to express mutual preferences for working with particular known others.

Faulkner and Anderson (1987) explain this peculiar network arrangement in terms of the high degree of uncertainty faced by the movie industry. No one really knows which movies will be duds and which will be blockbusters. (Consider how many people predicted that the highly profitable movie *Titanic* would fail.) How much the moviegoing public will like a particular film is very unpredictable, and the costs of failure are high. The overall odds of success are not good; only a handful of the many hundreds of films made each year make a lot of money. And even if a particular movie proves successful, it is hard to know who truly deserves credit for the success—hundreds of people work on a film, and they are not all absolutely critical for its success. Thus, filmmakers try to gain any advantage they can on the competition, and one way to do this is to use people with established track records and with whom they know they can work. Thus, networks help structure the collaborative arrangements that make movies.

In a well-known analysis of professional, technical, and managerial workers, Mark Granovetter (1974) draws an important distinction between

strong and weak social ties. Granovetter studied how people obtained the information about job opportunities that led to a new job. He found that most placements did not occur through the formal mechanisms of job allocation but instead happened informally, through friends and relatives. Granovetter noted that social ties vary in their strength; friends and kin can be close or distant. Connections to close kin are strong, whereas those to distant friends are weak. While one might expect that strong ties are more useful (perhaps because they involve a higher level of trust or entail more obligations), Granovetter argues that when it comes to learning about new job opportunities, weak ties perform better. Weak ties are more likely to give a job seeker access to different or more distant social circles, so he or she obtains more new information. By contrast, strong ties are more likely to provide information that the individual already knew.

Networks and Credit

Individual networks affect not only who acquires a job or gets the opportunity to work on a project but also who enjoys access to capital. Capital is necessary for business activity, so who gets it, and who doesn't, is absolutely critical. Lending and the extension of credit involve transactions that pointedly raise issues of trust and information. A creditor wants to lend money only to those who can be trusted to repay their debts, and potential borrowers have an incentive to misrepresent or exaggerate their willingness and ability to repay (so that they can obtain the loans they want). Lenders want very much to know who can be trusted to tell the truth and to repay the money.

In the past, much lending and capital mobilization occurred through social networks. Naomi Lamoreaux's (1991, 1994) studies of early 19th-century New England banks show how lending and credit flowed through friendship and kinship networks. Banks loaned money to people closely connected to the banks' directors (relatives, personal friends and associates, and so on), to such an extent that Lamoreaux uses the term "insider lending" to characterize the pattern. Anonymous or arm's-length lending simply didn't occur. In a modern context, the term "insider lending" appears to suggest unfairness, nepotism, and favoritism, but in the early 19th century it was a common and legitimate way for a bank to do business.

Robert Tittler (1994) established the importance of social networks at an even earlier point in the history of Western capitalism (one can trace the importance of economic networks even further back, to 15th-century Florence; see McLean and Padgett 1997). Joyce Jeffries, a mid-17th-century spinster living in England, kept a financial diary in which she recorded her

lending transactions. Tittler's analysis of the diary shows the prevalence of social connections: Not only were some of Jeffries's borrowers related to her, but they also were often related to each other (a feature that Tittler suggests would have made it easier for Jeffries to determine the reputation and credibility of a potential borrower). Many of Jeffries's borrowers had preexisting relationships with her. This made it more likely that she would lend to them, and it also made her readier to forgive delinquent debts or to charge lower rates of interest. That is, Jeffries didn't simply try to maximize her profits but instead shaped her transactions in light of the relationships and social obligations in which she was embedded.

Even today, after the development of a highly rationalized financial sector, some forms of lending remain deeply embedded in social relationships. Among ethnic immigrant groups in both the United States and Britain, small businesses sometimes join rotating credit associations (RCAs) to obtain the start-up capital they need to operate (see Light and Karageorgis 1994; Light, Kwuon, and Zhong 1990; Sterling 1995). An RCA is an informal social group in which members agree to make periodic monetary contributions to a central fund, and the fund is then made available to each contributor in turn.

Among Jamaican immigrants in contemporary Britain, for example, members of a group of neighbors, coworkers, or friends contribute small sums every week (sometimes biweekly or even monthly) to a fund that is then given to a single member. The RCA operates at least long enough for everyone to get a turn as recipient of the fund. For people who may be unable to obtain small business or consumer loans from a regular financial institution, an RCA provides a good way to save money and generate a lump sum. The money can be used for many purposes, including buying a house, paying for weddings and funerals, and setting up or expanding a business. RCAs, unlike banks, do not have deposit insurance or any similar government guarantees. They work only on the basis of a substantial level of trust and knowledge among the participants. Among Korean immigrants to the United States, RCAs presuppose a high degree of ethnic solidarity to function (Light et al. 1990:48).

Relationships are also important in the formal financial sector. In a study of American small businesses, Petersen and Rajan (1994) found that firms that developed relationships with their banks found it easier to obtain credit and did so on better terms. Surprisingly, small firms that concentrated their borrowing from a single source were not hurt by their failure to "shop around." Cultivating a special relationship with their banker conferred advantages that more than compensated for the decline in price competition.

Networks and Sales

Personal networks matter for obtaining the capital and labor inputs necessary for business. They also influence how firms sell their products. Their effect on sales can be so substantial that some organizations build their entire marketing strategies around the social networks of their sales forces. Direct sales organizations (DSOs) offer the best example of this pattern.

Nicole Biggart (1989) notes that well-known DSOs such as Amway, Tupperware, and Avon Cosmetics depend on their salespeople to use their own personal relationships with friends, acquaintances, and family to sell the companies' products. The hope is that friends and family will feel socially obliged to buy from the salesperson: After all, what kind of a brother, sister, or parent wouldn't want to help out a sibling or child by purchasing some Amway kitchen cleanser? Because sales depend so much on preexisting relationships, DSOs try especially hard to recruit women, who in modern American society perform most of the work connected with maintaining and nurturing social relationships (Biggart 1989:50). Outside of DSOs, Offer (1997:466–67) provides estimates of the substantial resources that salespeople and others devote to managing personal relationships in the pursuit of higher sales.

Networks matter on the other side of the transaction as well—sellers use them, but so do buyers. DiMaggio and Louch (1998) examined American consumer purchases and found that a remarkably high proportion of them are done through network connections. People use friends and relatives not only to gather information about commodities but also to decide whom to buy from. For example, when someone in the study bought a used car from another individual, about half the transactions were between friends, relatives, or acquaintances (pp. 622–23). People also frequently used their relationships when purchasing legal services and home maintenance services.

Networks in Organizations

Interpersonal networks also unfold within organizations. Sociologists have long noted the difference between the formal structure of an organization (as reflected, for example, by the organizational chart or official chain of command) and its informal structure (who actually talks to or interacts with whom). This difference means that formal organizational charts shouldn't be taken literally (Cross and Prusak 2002). Middle managers are at the halfway point of an official chain of command in which they receive information from subordinates and report to superiors, yet these two groups

are not the only people with whom they communicate inside the firm. A manager may be personal friends with a staff member in another division and so interacts regularly with that person although there is no official communication link between the two.

Han (1996) examined how closely communication networks in the headquarters of a specialty retail chain company reflected the formal organizational structure. He focused specifically on four types of interaction between individuals: to give and receive information, to investigate or explain, to advise or consult, and to negotiate or persuade (p. 50). His results showed that formal organizational structure affected who interacted with whom but did not completely determine it. Informal networks still mattered.

Individual Networks Around the World

The importance of social networks is not a uniquely American, or even Western, phenomenon. Yakubovich (2005) found that personal networks mattered for job seekers in contemporary urban Russia, and evidence from contemporary China and Taiwan suggests that social networks may matter even more in Asia than in the United States. For example, in Asia a person's connections play an important role in his or her getting a job. These special relations are so significant that they have been given a distinctive name: *guanxi*. *Guanxi* relations involve trust, mutual obligations, and flexibility, so they are very useful in business (Kiong and Kee 1998).

Bian (1997) analyzes how people get jobs in the People's Republic of China. As in the United States, social networks and connections help a great deal. According to Bian, two kinds of resources flow through social networks: information and influence. A job seeker needs both knowledge of job opportunities and some kind of "clout" to help influence the decision makers to favor his or her application. These resources, Bian argues, flow through different kinds of networks. "Weak ties"—that is, distant relations—are more useful for obtaining information (a finding consistent with that of Granovetter, 1974). "Strong ties"—that is, relations between people who are close kin or good friends—help to supply influence.

Even though China's economy is moving in the direction of capitalism and away from a socialist command economy, public bureaucracies and state agencies remain very important. Thus, businesspeople find it useful to cultivate clientelistic relationships with public officials who can serve as patrons of a kind. According to Wank (1996:825–26), Chinese entrepreneurs think very explicitly about how to "invest" in *guanxi* capital—that is, in their relationships with officialdom. *Guanxi* capital varies in three ways: (1) according to the durability of a relationship (and thus how unconditional

the patron's support is), (2) by its connectivity (whether the link to the patron leads to other connections), and (3) by the extent of the obligation. Family ties, education, membership in organizations, and plain old experience help to build up *guanxi* capital. The cultivation of *guanxi* isn't motivated solely by the existence of an influential state apparatus. Jar-Der Luo (1997) argues that Taiwanese businesses are also built around *guanxi.* People often raise capital from among their own family members, and even when they look to outside lenders or capital markets, personal connections and reputations are very important.

All these examples suggest that interpersonal social networks heavily influence business activity in many respects. Whether it be employment, lending, or sales, preexisting relationships structure market transactions. Of course, networks exist at several levels aside from the personal one, but there, too, they have an effect.

Interorganizational Networks

If people can have relationships, so can firms. And if people have different kinds of relationships of varying intensity, so again do firms. Firms and other types of organizations can have several types of relationships with each other. The most important can be categorized roughly into three groups: exchange relations, personnel relations, and property relations. Corporations can be linked together because they exchange or transact with each other, because persons go between them, or because of formal ownership.

Perhaps the most thoroughly studied intercorporate network is the one created through boards of directors (Mizruchi 1996). Suppose two firms have a common director—that is, a person sits on the boards of both Corporation A and Corporation B. The two corporations have a link by virtue of their overlapping directorates. Such links are referred to as **board interlocks.** Because some corporate directors sit on many boards simultaneously, many corporations become "interlocked" in this fashion. Interlocks can be more or less strong (depending on the number of shared directors). The interlocks between firms create useful connections because a mutual director can serve as a conduit for information and can facilitate negotiations and coordinate relations between corporations.

Through board interlocks, many corporations can become linked together into larger organizational networks. Beth Mintz and Michael Schwartz (1985) examined the networks of U.S. corporations during the 1963 to 1974 period. Taking into account all interlocking directorates, they determined which sorts of firms were at the "center" of the corporate network and which were at the periphery. Arguing that more centralized firms possessed greater importance

in intercorporate affairs, they found that financial firms (banks and insurance companies) occupied the most central positions in the network (p. 157). Mintz and Schwartz observed that the structure of the interlock network both reflected and reinforced the key role that financial institutions play in the allocation of capital to American business.[1] A paradigmatic example would be a situation in which a corporation puts on its board of directors the president of the bank it borrows from. But networks aren't static, and so Davis and Mizruchi (1999) show that in the 1980s U.S. banks came to occupy a less central position in corporate interlock networks. And such networks vary from one country to the next: Windolf (2009) compared the United States with Germany and found that in the first part of the 20th century German corporate networks tended to be much denser than U.S. corporate networks.

In extending these arguments, Donald Palmer and his colleagues (1995) assert that whether or not a U.S. firm was acquired by another firm during the 1960s depended significantly on the kinds of networks into which the firm was embedded: Corporations with many interlocks to other firms were more likely to be acquired (p. 492). Their explanation for this finding was that overlapping directors served as information channels through which a firm's managers could communicate to prospective acquirers their willingness and suitability to be taken over. Corporate networks, like individual networks, can facilitate the flow of information.

Board interlocks influence who gets acquired, but they also affect how much the acquiring firm pays. Haunschild (1994) analyzed 453 acquisitions occurring between 1986 and 1993 and measured the sizes of the acquisition premiums paid by the buyers. (Simply put, the acquisition premium is the difference between the market price of the target company's stock before the announcement of the acquisition and the price paid per share by the acquiring company.) How much to pay for a target firm is a question that involves a lot of uncertainty, so acquiring firms try to obtain additional information on what is a reasonable price. Potential information sources include the other firms with which the acquirer is connected through board interlocks. And indeed, Haunschild found a positive statistical relationship between the acquisition premium paid by the firm and the premiums paid by the other firms to which it was connected for their own prior acquisitions (p. 403). Apparently, in estimating what constitutes a reasonable premium, acquiring firms are influenced by those in their corporate networks.

Diffusion of Innovations

One instance of information flow through networks concerns the diffusion of innovations through organizational populations. Fads and fashions

occur in business (and elsewhere), and at given moments, one can find large numbers of firms trying out the same strategy, pursuing the same idea, or applying similar innovations. Why do some firms adopt innovations before others? Why do some lead in making change while others only follow as part of the pack? Networks provide an important part of the answer.

Gerald Davis (1991) studied the adoption of the "poison pill" defense by corporations. During the 1980s, as a wave of hostile takeovers engulfed Wall Street, corporations sought ways to protect themselves from unfriendly acquirers. The poison pill was one such defensive measure. While the details vary, a typical poison pill allowed its holder to purchase additional shares in a firm at heavily discounted rates should a takeover attempt occur without the approval of the board of directors.

Among *Fortune* 500 firms, Crown Zellerbach was the first to adopt the device (in 1984). Very few other firms adopted poison pills until the legality of such a defense was upheld by the Delaware Supreme Court in a 1985 ruling (*Moran v. Household International*). But thereafter, so many firms instituted poison pills that by 1989 more than 60% of the *Fortune* 500 possessed them. In other words, poison pills spread like wildfire after the 1985 ruling. In explaining who adopted and when, Davis (1991) found that firms that had an interlocking director with another firm that had already adopted the poison pill were themselves more likely to adopt. Having one tie to another adopter increased the rate of adoption by about 61%, and having two ties to adopters almost doubled the rate (p. 605). With such network connections, firms were able to learn from the experiences of others and emulate what seemed to be a good strategy. This corporate innovation spread through corporate networks.

Information diffuses through many types of interorganizational networks, not just interlocking directorates. Westphal, Gulati, and Shortell (1997) studied a different diffusion process that occurred through different kinds of networks. Instead of poison pills and board interlocks, they examined **total quality management (TQM)** programs and common membership in strategic alliances and multihospital systems.

Many hospitals introduced TQM in the late 1980s; this new management approach involved a high level of organizational commitment to the customer as well as continuous improvement using empowered employee groups and collective problem solving. It was, in short, something of a business fad. Westphal et al. posit that some kinds of network ties are particularly important for the transfer of knowledge and information between different organizations. They focus on two in particular: (1) common membership in strategic alliances (a contractual agreement between hospitals for the provision of goods and services) and (2) common membership in multihospital systems

(in which one organization owns and controls multiple hospitals). They suggest that these links help to cultivate high levels of formal and informal communication between organizations.

The first adoptions of TQM by general medical surgical hospitals occurred during the mid-1980s, and by 1993, almost 2,000 hospitals had instituted TQM programs. Westphal et al. found that connections to hospitals that had already adopted TQM affected the likelihood that a hospital would itself adopt, but in a more complex way than in the case of poison pills. After TQM became common enough to be a generally accepted management practice, network connections made adoption of TQM *more likely.* But before then, network connections made adoption *less likely.*

Managing Corporate Relationships

Given the importance of network connections for firms, it is not surprising that firms can be quite deliberate in creating or establishing such relationships. After all, strategic alliances between different hospitals, or director interlocks between two firms, do not happen by chance. Such important relationships are carefully considered and negotiated by the two parties before they enter into them. Unlike other kinds of networks (e.g., kinship, in which a person is simply born with certain parents and siblings), interorganizational networks are products of the organizations themselves. Firms are increasingly creating their own networks and establishing many different kinds of cooperative relations. Gulati (1995a) outlines myriad new forms of interfirm cooperation: joint ventures, joint R&D agreements, technology exchanges, direct investments, licensing arrangements, and so on. Powell, Koput, and Smith-Doerr (1996) also mention equity joint ventures, comarketing arrangements, and collaborative manufacturing as other forms of cooperation and point out the huge increase in corporate partnering and external collaborations that took place in the 1990s (p. 116). Most manufacturing firms in the industrial heartland of the United States have changed their business model, embraced outsourcing, and moved strongly toward collaborative relationships with their supplier networks (Whitford 2005).

In establishing such relationships, how do firms choose their partners? One obvious answer is that the nature of the activities that a firm wants to undertake determines partnerships. That is, a bank that wants to develop software for online banking would naturally look to a computer software company with Internet expertise for a partnership. This narrows the field of potential partners but still leaves open the question of whom to collaborate with (there are, for example, many software firms with relevant experience for the bank to choose from).

Gulati (1995a, 1995b) points out that preexisting relationships influence new alliances. That is, two firms with a prior history of collaboration are more likely to develop new projects together (not unlike Hollywood film people). Furthermore, even when two firms have had no prior direct contact, if they have both collaborated with a common partner (i.e., Firms A and B have never had an alliance with each other, but they have both had previous alliances with Firm C), that also increases the likelihood of a new collaboration between them (Gulati 1995b:641–42). Prior direct ties, or indirect ones, provide crucial information about a firm's potential partner. Such rich, informal, and detailed information comes only from experience, either the firm's own or that of someone the firm trusts. In industries where interfirm collaborations are very common, such as the biotech industry, firms learn how to collaborate, and they develop quite distinct reputations as good (or bad) partners (Powell et al. 1996:121).

Firms manage their networks not only by deciding which other firms they do, and do not, want to collaborate with but also by managing their network relationships. Sometimes specific people within firms have the particular job of cultivating and maintaining relationships with customers and clients. In a corporate law firm, for example, such a person would be called a "rainmaker," and some banks have personnel explicitly designated as "relationship managers" to deal with customers. In today's world, many large firms make regular use of the services of investment banks. A firm that wishes to borrow capital, through selling bonds, issuing stock, or some other method, will need the help of an investment bank. Investment banks also provide advice about potential mergers and acquisitions. Because there are many investment banks, a firm requiring such services can treat each instance as a separate transaction and use a different bank on each occasion, or it can treat all deals as moments in a single, ongoing relationship. As Baker (1990) argues, typically a big firm used to rely on a single bank with which it had a long-term relationship. If the firm needed access to capital or required some advice, it would always go to its bank. The firm gave a very high proportion of its banking business to one investment bank, so the relationship was "monogamous." Increasingly, however, firms treat each transaction separately and do not automatically go back to the same bank each time. This means that firms spread their business among a number of investment banks.

To illustrate the difference, Baker (1990:596) contrasts Ford Motor Company with General Motors during the 1981 to 1985 period. Both auto manufacturers made heavy use of investment banks (with 81 and 110 deals, respectively). Ford gave 69% of its business to a single bank, Goldman Sachs. GM, in contrast, gave 27% of its business to First Boston, another

27% to Morgan Stanley, 12% to Salomon Brothers, 9% to Merrill Lynch, and smaller proportions to many other banks. Compared with Ford, GM spread its business around.

Building a relationship with a single bank allows for better service because of continuity, experience, and inside knowledge. Using separate transactions creates price competition and thus lower costs for the firm; it also diversifies the firm's sources of information. Each alternative therefore has both advantages and disadvantages. Baker notes that most firms pursue a hybrid strategy, giving a sizable proportion of their business to one or two investment banks (although not all of their business) but not spreading their business evenly to a maximum number of banks. The choice of strategy, according to Baker, reflects a firm's deliberate attempt to avoid becoming too dependent on any one bank and to exploit whatever power advantages it has.

Corporate Networks Around the World

The existence and importance of interorganizational networks is a global phenomenon. Examples include *chaebol* in Korea and *grupos económicos* in Latin America (see Granovetter 1994). But probably the most widely known example comes from Japan. As mentioned earlier, large Japanese corporations are characteristically grouped together into clusters of interlinked firms called *keiretsu* (Lincoln and Gerlach 2004). About one-half of Japan's 200 largest industrial firms maintain affiliations with one group or another. All five of the largest commercial banks are in their own groups, as are the five leading trust banks, the top five casualty insurance companies, and four of the five largest life insurance companies (Gerlach 1992:85). These business groups are built around well-known names such as Mitsui, Sanwa, Mitsubishi, and Sumitomo. A bank usually lies at the core of each *keiretsu,* and there is little duplication of industrial specialization (i.e., no more than one member firm comes from each industry, so that the members do not compete with each other).

Three kinds of interorganizational ties join the member firms together (Gerlach 1992; Lincoln, Gerlach, and Takahashi 1992). Japanese companies own each other's shares, and they exchange company directors (and other lower-ranked personnel). They are also linked through loans from the core *keiretsu* bank. These multiple links constitute stable, cooperative, reciprocal, long-term relationships that encourage economic exchange with members over nonmembers. For example, if a *keiretsu* firm needs to raise capital, it will go to its *keiretsu* bank rather than to an outside bank.

The structuring of the Japanese economy around *keiretsu* networks helps to explain why foreign firms, including American ones, have had such a hard

time breaking into the Japanese domestic market. Because *keiretsu* members prefer to transact with other group members, American firms always face the additional liability of being nonmembers as well as foreigners. *Keiretsu* groups have also helped to create high rates of corporate investment (profits don't have to be all paid out as dividends to shareholders) and have given Japanese firms great resilience in managing the strains associated with rapid expansion (Gerlach 1992:246). However, Japan's highly "networked" economy isn't static, and in the face of economic stagnation the structure of the *keiretsu* is changing (Lincoln and Gerlach 2004: 2–7).

The Importance of Networks in Markets

Why do some people get jobs and others don't? Many factors affect this outcome, but an individual's social network is one of the more important ones. Why do some firms adopt innovations before other firms? Again, the kinds of networks into which a firm is embedded make a big difference. Markets feed off information, and networks are one of the most important channels through which information travels. Markets are awash in information; people and firms hear all kinds of news, rumors, and reports whose veracity may be doubtful. What they want is accurate, timely, detailed, and trustworthy information. Having a relationship with someone, or having a connection with an organization, helps to create access to reliable and *credible* information. Being told the truth is no good unless you can be sure that the message is true, and for this it helps to be dealing with a source you can trust.

Relationships and networks structure the flow of information, but they also structure the flow of favors and obligations. Relationships entail reciprocal expectations and mutual obligations. To get a job, it sometimes isn't sufficient simply to learn about it; you need some clout on the inside. It helps to have someone who "owes" you something, either because of some relational obligation (friends are expected to look out for each other) or because that person needs to return a previous favor (along the lines of "you scratch my back, I'll scratch yours"). Such relational histories of reciprocal favors can develop between organizations as well as between individuals (witness the discussion of the New York garment industry provided by Uzzi, 1996).

Relationships can be used to mobilize resources needed as inputs by a company: raw materials, supplies, capital, and labor. Baker's (1990) analysis of corporate-investment bank relations shows how important it is for firms to manage their relationships well. Relationships serve as the basis for many types of interfirm collaborations (joint research, marketing, manufacturing,

or whatever). They are also useful for selling a company's product. Salespeople try to cultivate good relationships with their clients or customers, and some firms (e.g., DSOs) rely almost exclusively on the preexisting social relationships of their sales force for marketing their goods. In general, strong relationships and extensive networks help to give a firm the flexibility and adaptability needed to survive in a dynamic environment. Networks allow firms to share risks with each other, pool their competencies, and exploit new opportunities (Powell and Smith-Doerr 1994:370).

Relationships vary in the extent to which they are simply given or must be created. An individual person is born into a family and thereby acquires a preexisting network of kin. Persons are also born into particular ethnic groups and so gain access to ethnically based resources. People aren't born with friends, however, and so usually these relationships are created. Likewise, corporations seldom are "born" with extensive preexisting networks. (One exception is when a new corporation is formed as a joint venture of two parent companies; even at birth, such a new firm has strong ties to its owners.) American corporations establish relationships with their investment banks, and Japanese firms affiliate themselves with one *keiretsu* or another. But regardless of whether individual or organizational relationships are "inherited" or created, they must all be managed in some way if they are to be maintained. Neither firms nor individuals can afford to take their friends and allies for granted. Relationships that lie dormant for long periods of time eventually wither away and disappear.

Relationships insert economic actors into larger networks and more distant connections that extend well beyond their spheres of direct control. One can choose one's own friends, but it is much harder to manage or influence your friends' choices of friends. Likewise, Firm A can decide to form a strategic alliance with Firm B, but it cannot decide which firms B forms its other alliances with. The importance of these indirect ties is most obvious in the case of information flows. Suppose Person A cultivates a particular friend because she serves as a credible source of information. By choosing that friend, rather than another, Person A clearly exerts control. Yet where the friend gets her information depends on her own relationships, which are beyond A's control. The variety and usefulness of A's information sources depend not only on how she manages her networks but also on how the people she is linked to manage theirs.

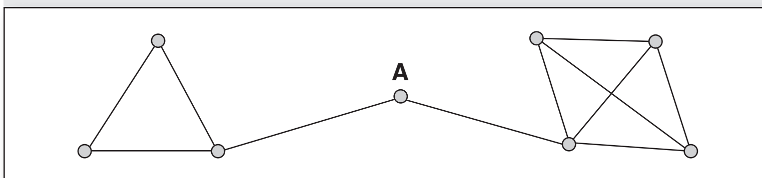
In a highly influential article, Mark Granovetter (1985) uses the term *embeddedness* to denote how economic action in general is shaped by ongoing social relationships. Trust is an enormously important problem in the economy: Many kinds of economic action can be undertaken only if one can trust the other person(s). According to Granovetter, trust derives not

from institutional arrangements (e.g., airtight contracts with all the *i*s dotted and *t*s crossed) or generalized morality (e.g., a social norm that people should always keep the promises they make) but rather from the interpersonal relationships and networks in which an economic actor is embedded. The coherence and order of economic life depend less on formal contractual or bureaucratic arrangements and more on the expectations and obligations that form around social relationships. Granovetter's original argument focused especially on interpersonal relationships, but it can be, and has been, extended to encompass interorganizational and other types of relationships. Following Granovetter's more general formulation, those who wish to understand economic behavior will also have to apprehend its social context.

Ron Burt (1992) has offered a general recipe for how best to manage networks. He argues that firms do better, and individuals enjoy more success, if they position themselves into the "**structural holes**" of existing networks. These "holes" are where relations are absent, where links do not exist. By putting themselves into structural holes, firms or persons can broker between different groups (playing them off against each other) and link simultaneously into multiple networks. Exhibit 4.4 identifies a structural hole in a network and shows someone (Person A) who is occupying it. Person A has positioned herself between two groups who otherwise have no contact with each other. By Burt's logic, it is better to know people who don't know each other than to know those who do.

Burt offers a general strategy that significantly recasts the meaning of competitive success in markets. Doing well is not just a matter of improving one's product or lowering prices; it also depends on the active management of networks. And to exploit all the advantages that networks and relationships offer, the network entrepreneur must comprehend the global features of networks (i.e., the existence and location of structural holes), not just the proximate features of his or her own direct network ties. For individual networks, in other words, it is not enough to maximize one's own network ties. Finding a structural hole means cultivating direct ties to others in light of the pattern of ties they have with everyone else.

Exhibit 4.4 Structural Holes



Whether or not one follows Burt's advice, networks are not an infinitely pliable resource. They are built around relationships *between* people and therefore are not the property of any single individual (a husband is *in* a marriage, but he doesn't *own* the marriage). No matter how advantageous it would be to manipulate networks and relationships in a particular way, individuals and organizations cannot act unilaterally. Their networks depend not only on what they do but also on what the other party does. Networks are resources, to be sure, but they are not under any single individual's control.

Conclusion

However constructed, networks shape the economy. People and firms devote substantial amounts of time, money, and other resources to the cultivation and maintenance of relationships because they matter. Networks shape information, influence opportunities, structure claims on others and obligations to them, and grant access. Consequently, networks influence a firm's performance, a person's career mobility, trading patterns, and a host of other outcomes.

Note

1. Roy (1983) shows how this network of interlocking directorates evolved in the period between 1886 and 1905 and documents the emerging centrality of banks.