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# Competition in a Multimarket Environment: The Case of Market Exit

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This paper explores how multimarket theory challenges the normal assumptions of competition in individual markets. Using a sample of hospitals, the authors found that the degree to which competitors compete in similar markets has a negative effect on market exit. Organizations that contract for services and consequently face fewer internal barriers to exit are more likely to exit from service markets.

*John W. Slocum, Jr.*

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## Abstract

Studies of competition typically have two underlying assumptions: that competition occurs within the boundaries of industries or markets and that all firms in a market or industry are affected equally by competitive pressures. The concept of multipoint competition challenges both assumptions. Multipoint theory addresses how different levels of contact between firms across multiple markets affect competition in individual markets. Its main argument is that high levels of contact between firms across markets will induce mutual forbearance, causing multipoint competitors to refrain from aggressively attacking each other.

The restraint stems from the fact that high levels of intermarket contact enable a firm to respond to an aggressive action by a multipoint rival in markets other than the one in which the action takes place. That possibility raises the potential costs of aggressive moves and serves as a credible deterrent, especially if a firm can respond in several markets. In addition, multipoint competition helps firms to interpret their rivals' intentions and signal their own, reducing the likelihood of costly misunderstandings.

The authors elaborate on those ideas to examine how a hospital's degree of intermarket contact with its competitors in a particular service market affects the likelihood that it will exit that market. They find that hospitals are less likely to exit markets in which they meet large numbers of their multipoint rivals. As a result of mutual forbearance, competitive rivalry is reduced across the markets that multipoint rivals share, lessening the types of pressures that typically prompt market exit. With lower levels of competitive rivalry, markets shared by multipoint rivals are relatively more hospitable environments in which to operate and are less likely

to be exited. Rather than competing intensely, multipoint rivals appear to adopt a "live and let live" approach toward each other.

The fact that multipoint contact across markets may lessen competitive pressures within individual markets has implications for the contact between firms in several settings. Multimarket contact can occur across different product or service markets and also across different geographic markets, thus affording an intriguing perspective for the investigation of the rivalry between emerging transnational firms. True transnationals, by successfully integrating global operations while still addressing local market concerns, have been seen by some as having the capabilities necessary for successful performance in international competition. Perhaps transnational firms, because they have an integrated decision-making structure, can coordinate their actions to reduce competitive rivalry with each other across the markets they share. If so, markets dominated by transnationals may become more stable than the current state of international competition would predict.

*(Competition; Market Exit; Multipoint Theory; Multimarket Contact; Hospitals)*

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## Introduction

The central question posed by theoretical and empirical research in corporate-level strategy is: In what businesses should the firm compete? One of the most important ways in which firms modify their corporate strategy is by entering new markets and exiting current markets. Although corporate strategic change has been

examined mainly in terms of entry into new markets and businesses (Haveman 1993), the exit of firms from markets in which they currently compete can have an important impact on both the strategy of the firm and the competitive landscape of an industry (Lieberman 1990).

Competition with other organizations is a key factor in the exit decision (D'Aveni 1994, Porter 1980). Most empirical work linking competition to market exit has examined only the interrelationships of firms operating within a single market (Heggstad and Rhoades 1978). The focus on intramarket competition is somewhat surprising given the rise of the multibusiness firm, which competes within single markets and also across markets, often meeting the same rival(s) in several different markets. Both business historians (Chandler 1962) and sociologists (Fligstein 1985) have documented in great detail the rise of such firms in economic organization in the twentieth century. Well-known examples of multiproduct firms are Kraft and Nabisco (both subsidiaries of tobacco-selling companies), which have competed against one another not only in dairy products (e.g., Parkay and Fleischmann's margarine) but also in cold cereals. Similarly, Bic and Gillette are rivals in markets for both pens and razors.

The most important competitive implication of the intermarket relationships of multibusiness firms is that they provide an opportunity for actions taken in one market to be countered across several markets. The issue of whether firms' relationships outside a particular market can affect exit decisions within that market has received little empirical investigation (but see Judd (1985) for a game-theoretic approach). The lack of attention is particularly striking because multibusiness firms contemplating market exit are likely to assess not only their position in the market under consideration, but also their positions (and those of their competitors) in the full range of markets in which they compete. Consideration of markets other than the one from which exit is contemplated seems particularly important because the firm must determine its likely future prospects in arenas in which it will remain as well as in those from which it is contemplating withdrawal if the specific exit decision is to benefit the entire firm.

We examine how the extent of intermarket contact between rival firms influences competitive pressures felt by those firms. We develop hypotheses linking intermarket effects to the likelihood of market exit by individual firms in particular markets. Building on the idea of multipoint competition, specifically on the impact of intermarket contact between firms (Edwards 1955), we argue that higher levels of intermarket con-

tact can benefit firms that maintain such contacts. As a result, those firms may be reluctant to abandon such situations (Karnani and Wernerfelt 1985).

A similar conclusion is suggested in the context of a network analysis of competitive environments. Network theorists have traced the accrual of benefits in various environments to particular positions occupied by actors within a system of relationships connecting them to one another. In a network model, firms benefit from their position to the extent that they are able to obtain information on other actors and influence their actions (Burt 1980). That perspective provides support for the argument that firms attempt to build and maintain connections to their rivals.

The multipoint and network arguments extend traditional views of competition, which typically pertain to intramarket forces only. By incorporating intermarket effects, we more fully describe both competitive influences and their effects on organizational strategies, such as exit decisions.

To elaborate the theoretical arguments that link intermarket competition to market exit, we investigate a focal organization's degree of overlap in products and services with other organizations. Because exit decisions are based, to a great extent, on the level of competition within a specific product or service, we use the exit decision at the product or service level as the unit of analysis. In addition to examining the effects of competition associated with market overlap, we assess the significance of performance and exit barriers facing the firm as antecedents of market exit decisions. Even when competitive forces are particularly strong, market exit may be precluded by economic, strategic, and managerial exit barriers. To examine the dynamics of market exit over time, we analyze changes in the services offered by 283 hospitals during a six-year period, 1980 to 1986.

## Theory

Theorists representing a wide variety of disciplines and perspectives have been interested in the effects of competition on the development of individual organizations and entire industries. However, most empirical work has treated competition as a property of an industry at a particular point in time, the implicit assumption being that industries are in equilibrium (Hannan and Carroll 1992).

Research in network theory (Burt 1980) and strategy (Barnett 1993) has examined the extent to which a more differentiated depiction of the relationship between firms helps to capture more accurately the com-

petitive nature of individual industries. Barnett's (1993) study illustrated that competitive influences were not limited to single markets, but extended to other markets in which rivals faced each other. Network theorists have demonstrated that actors are better able to achieve their goals when they operate from within a coordinated group of fellow actors (Burt 1982). A critical requirement for organizational coordination is that firms maintain relationships with each other and monitor each other's activities through participation in similar sets of markets. Firms that maintain a presence in several markets in which their competitors also participate can draw on cross-market information flows to enhance their knowledge about the type and likelihood of competitive behaviors by their rivals. Such knowledge facilitates greater coordination among the firms.

### **Multipoint Competition**

Theoretical predictions and empirical findings in the economics and ecological literatures have linked greater numbers of competitors with higher levels of competition (Hannan and Freeman 1989, Scherer and Ross 1990). Scholars in both areas have persuasively argued and repeatedly demonstrated that increased competition within a single market results in higher rates of market exit. By the economic and ecological logic, a market with more players would be viewed as more competitive than one with fewer players.

However, the link between the number of competitors and market competition can understate the complexity of the actual relationships between firms. Firms with elaborate relationships across markets, which can encourage them to coordinate their behaviors, may be able to reduce the levels of competition they face by containing competitive forces. Empirical research on competition has documented numerous interfirm structures that are designed to limit competitive pressures legally (Pfeffer 1992). Recent empirical evidence demonstrates that cross-market effects can lead to reduced levels of competition in individual markets (Barnett 1993, Scott 1982).

Edwards (1955) was one of the first to note that rivalries extending across *multiple* markets may lead to lessened competition in individual markets, a condition he labeled as "mutual forbearance." Specifically, Edwards hypothesized that a firm competing in several markets will compete less aggressively with a rival if that rival also competes with it in several other markets. Because the rivals compete in more than one market, they are attentive to how competition in one market will affect competition in other markets. Such "multipoint rivals" become more concerned with main-

taining equilibrium across the several markets in which they compete than with competing vigorously in any single market (Gimeno 1994).

For a focal firm, maintaining a presence in markets where one's competitors are operating can also be understood as a deliberate strategy to establish more points of contact between the firm and its rivals. Such contacts provide a variety of avenues for influencing the actions of the firm's competitors and reducing the overall level of competition. Karnani and Wernerfelt (1985) present a compelling argument for the maintenance of so-called "mutual footholds" by multipoint rivals who meet each other in several different geographic arenas. The footholds, or token presences in each other's markets, enable the rivals to deter competitive attacks without relying on other mechanisms such as inherently uncertain trust-based agreements. Specifically, Karnani and Wernerfelt argue that multipoint contact allows for "limited war" equilibriums that restrict aggressive competition to very circumscribed areas. A more extreme possibility is a mutual-foothold equilibrium whereby each firm with a foothold in another's territory completely refrains from attacking the other because of the increased likelihood of aggressive response. Once such footholds are established, a multipoint competitor is unlikely to abandon them. Doing so would reduce the number of avenues for influencing its rivals' behavior and reduce its deterrent capability because the number of markets in which it could respond would decline.

Using a different vocabulary, network theorists have also been interested in the influence of specific types of relationships between actors on various outcomes. Burt (1980) documented the benefits of information flows within competitive environments and the relative advantages of high degrees of interconnectedness among network actors. The more points of contact an organization has with its competitors, the more easily it can obtain information about its competitors' behavior. With more points of contact, acquired information can be verified more accurately, which reduces uncertainty about competitors' potential actions. Contact with similarly positioned organizations also facilitates the coordination of actions as information can serve as a signalling device to indicate intentions.

Empirical results have demonstrated that higher levels of multipoint contact result in less competitive environments across markets along a number of dimensions, making firms reluctant to abandon those environments. For example, Heggstad and Rhoades (1978) found that market shares were more stable when banking firms met their rivals in a greater number of

geographic markets. They suggested that the organizations in their sample were likely to want to remain in the less competitive arenas characterized by mutual forbearance. The benefits derived from the establishment of mutual footholds, mutual forbearance and information flows accompanying higher levels of multipoint contact suggest a low likelihood of severing such relationships once they have been established. The effect of multipoint rivalry on exit can be simply stated: A given organization will be less likely to exit a specific market if other organizations with which it competes in that market *also compete with it in other markets*.

Barnett (1993) provides the only direct empirical test of the effect of multipoint competition on market exit. He found that markets for private branch exchange (PBX) equipment within the U.S. telephone industry that contained higher numbers of multipoint competitors (on a geographic basis) had lower exit rates than markets that contained higher numbers of competitors whose operators were confined to a single geographic location. Those results offer some support for the notion that, *ceteris paribus*, higher levels of multipoint contact will lower the likelihood of exit by individual firms that have such contacts.

Firms with higher levels of multipoint competition should find it advantageous to maintain a presence in the array of markets in which their competitors are present. Consequently, at higher levels of multipoint contact, mutual forbearance is likely to occur which will reduce competitive pressures. Firms will be less likely to exit such markets in which they currently compete.

H1. *Organizations with higher levels of multipoint contact with competitors in a particular market are less likely to exit that market than organizations with lower levels of multipoint contact.*

#### **Exit Barriers**

In addition to the competitive environment, the severity of exit barriers will influence market exit. Exit barriers are factors that limit the ability of organizations to scale back or divest business operations. Researchers have identified several important structural, strategic, and managerial factors that are likely to affect market exit (Porter 1976, 1980; Tirole 1988). For example, firms typically exit when their revenues fail to cover the marginal cost of providing a product or service. However, high sunk costs associated with durable and specialized assets may impede exit. Porter (1976) notes that if an organization has invested in costly equipment to manufacture a product or provide

a service and cannot dispose of such equipment easily and profitably, incremental costs are likely to be well below average costs. In that case, the organization will persist in providing the product or service despite overall losses. Exit does not become feasible until the equipment wears out or becomes obsolete. We include several such factors as controls, but pay particular attention to two variables that have been linked to the likelihood of strategic change in general and, more specifically, to market exit.

#### **Mode of Product or Service Offering**

Transaction cost theorists have pointed out that organizations have two basic choices for how they will provide the products and services they offer. Organizations can operate in markets either by providing products and services developed with their own assets or through market-based transactions such as contractual agreements with other organizations (Williamson 1985).

Much of the work on hierarchical versus market-based structuring has examined the stages within a vertical manufacturing process (e.g., Harrigan 1985; Mahoney 1992). Activities at each stage can be contracted or performed in-house. A logical extension of the former approach is the contracting for the provision of an entire product or service. For example, many appliance manufacturing firms contract their service and maintenance to independent authorized service centers. Large retailers often contract with smaller specialty dealers to supply and staff various departments within their stores.

An organization's use of contracting to provide a product or service may influence whether the organization exits that market. Two prominent factors make market exit more likely when participation is characterized by contractual agreements. First, market-based contractual arrangements have been considered much easier for organizations to terminate than those arrangements requiring an organization to invest in assets itself (Monteverde and Teece 1982). By avoiding large investments that raise exit barriers, organizations that contract for various functions maintain flexibility and can adapt easily as environments change (Harrigan 1985). The high barriers that often accompany vertical integration have been seen as an impediment to such flexibility. For example, D'Aveni and Ilinitch (1992) found that vertically integrated firms have higher risks of bankruptcy than others because the greater complexity of the vertically integrated organization slows reaction to environmental changes.

In addition, contractual arrangements are likely to minimize intraorganizational resistance that would al-

most certainly accompany the proposed abandonment of specific markets. Managers with their own organizational assets at risk are likely to resist attempts to eliminate specific activities under their control, either because they would be left with less power in the organization (if they remained as managers at all) or because threat-rigidity responses are more likely to prevent timely adaptation when one has personally allocated resources to particular projects (Staw et al. 1981, Brockner 1992). Moreover, Porter (1976) notes that managers may be reluctant to exit a market because such actions may be interpreted negatively by outside parties, and thus reduce the manager's mobility should he or she subsequently leave the firm. Hence, organizations that participate in a market through contractual relationships would be more likely to exit than ones that utilize their own assets.

H2. *Organizations that participate in a market through contracting are more likely to exit the market than firms that participate through in-house investments.*

#### **Chief Executive Change**

Managerial and, more specifically, CEO attachment to specific products or businesses is a significant barrier to market exit (Duhaime and Grant 1984, Porter 1980). Therefore, changes in top management may be necessary to overcome organizationally-based constraints on market exit. Considerable research has shown the importance of organizational leaders as motivators of the strategic change process (Bantel and Jackson 1989, Hambrick and Fukutomi 1991, Wiersema and Bantel 1992). Theorists have argued that executive change, in particular a chief executive change, is an important mechanism for overcoming inertia and political resistance (Boeker and Goodstein 1993). Stressing the influence of executive succession in overcoming inertia, several empirical studies have provided support for the idea that strategic change becomes more likely following a change in an organization's leadership (Helmich and Brown 1972, Wagner et al. 1984).

Besides acting as a catalyst for organizational change, succession introduces new perspectives on the way the organization should be operated. The longer the tenure of the chief executive, the less innovative, receptive to new information, and flexible he or she is likely to be (Miller 1991). The longer an individual works in an organization, the greater the likelihood that "habitual ways of doing things, customary sources of information and ways of information processing" develop which increase managerial attachment to the status quo (Pfeffer 1983, p. 325). A new chief executive with new

skills and perspectives on how the firm should behave in its different markets is likely to make decisions and take actions that produce strategic changes. Hence, a change in chief executive is more conducive to exit from current markets.

H3. *Organizations with a new chief executive are more likely than others to exit markets.*

#### **Performance**

Another critical determinant of market exit, although not an exit barrier in the traditional sense, is organizational performance. Changes in performance have been linked to motivating organizational adaptation. Several models of organizational adaptation have stressed the triggering role of poor performance as a necessary precursor to strategic change (Lant et al. 1992). According to Tushman and Romanelli (1985), only when poor performance signals that current goals are not being met are the prevailing ways to doing things questioned and changes in strategy attempted to better match the new environment.

Poor performance seems likely to exacerbate pressures for market exit, because firms may respond to a performance downturn by reducing services and downsizing the organization. Duhaime and Grant (1984), for example, found that the financial performance of divesting firms was significantly lower than the performance of nondivesting competitors.

H4. *Poorly performing organizations are more likely to exit markets than better performing organizations.*

#### **Methodology**

We tested our hypotheses with data on 286 California hospitals for the period 1980 to 1986. The data were obtained from the California Health Facilities Commission's (CHFC) annual disclosure survey. The CHFC surveys California hospitals on such matters as ownership and management, financial status, and service delivery. Several characteristics of the hospital industry in California make it particularly attractive for an empirical examination of multipoint competition. In contrast to most industries, it provides a fairly fixed set of services. Hence, the range of services that our sample of hospitals could exit was basically constant over the study period. Being able to identify a fixed set of services minimizes having to account for temporal (e.g., life-cycle) changes in the set of possible services in which a firm can operate and potentially exit. We examined a broad spectrum of medical services covering the following areas identified by the CHFC: acute

care (e.g., surgical intensive care), partial day care (e.g., psychiatric day care), home care (e.g., home nursing care), emergency services (e.g., emergency room services), ancillary services (e.g., X-ray services), clinic services (e.g., dermatology), and other services (e.g., dietetic counseling). Detailed longitudinal information was available on exit from that common set of services, as well as information on competitors and organizational variables such as contracting, chief executive changes and performance that were also predicted to influence market exit.

### **Definition of Competitive Environment**

Researchers have used geographic areas such as a county or standard metropolitan statistical area (SMSA) to define hospital environments. We followed that approach by using county boundaries to delineate a hospital's environment. County market definitions have been found to yield market areas close to those based on patient-origin methodology (Alexander et al. 1986). Observations represent one service for each hospital for a given year, and hospitals could offer up to 163 different services. We used the complete dataset of 286 hospitals to compute all competitive measures (e.g., multipoint contact, density and competitors contracting). However, three hospitals were eliminated from the final analysis because of missing data, leaving a final sample size of 283.

### **Dependent Variable**

*Market Exit.* The dependent variable, market exit, was measured as a dichotomous variable representing the event of withdrawal from a market. An observation was included in the dataset if, for a given service, a hospital offered the service in the prior year (and thus was capable of exiting that market in the current year). Market exit was coded as 1 (i.e., a service was offered in the previous period and not offered in the current period) and continued market participation was coded as 0.

### **Independent Variables**

*Multipoint Competition.* Because we were interested in the influence of interorganizational contact across different product-service markets on the actions of a focal hospital, multipoint competition was operationalized for each of a hospital's services as the extent to which that hospital's other services were also offered by its competitors in that particular service market within its county. Specifically, multipoint competition was measured for each service market in which a hospital

currently operated (and thus was capable of exiting) as the average fraction of the services currently offered by the focal hospital that were offered by other hospitals also currently in that service market within a county. Multipoint competition was therefore a *service-level* construct and differed not only across hospitals, but also within a given hospital as a hospital's direct competitors in any one service market could differ from those in another (and thus its degree of overlap with those rivals on other services could differ as well). Our measure of multipoint contact ranged from a high of 100%, when each of the other hospitals offering, for example, dialysis in a county also offered every other service that the focal hospital did (those rivals might have offered additional services not offered by the focal hospital), to a low of zero when all hospitals offering a particular service offered no other services in common.

We considered using a single hospital-level measure of the extent of service overlap. However, such a measure would obscure market-level differences stemming from the fact that hospitals do not neatly mirror their competitors on all services they offer. Given our focus on exit from specific service markets and the impact that the extent of contact in other markets (outside the focal one) could have on such action, a service-level measure seemed better able to capture the variation in effects across different service market configurations. A detailed description of how our multipoint measure was constructed is provided in the Appendix.

*Mode of Service Offering.* The way in which a service was provided was measured as a dummy variable denoting whether a hospital contracted for the service or undertook its provision itself.

*Chief Executive Change.* Chief executive successions were coded for each year of the study. A change was considered to have taken place when the chief executive for a given year was different from the one for the previous year.

*Performance.* Given that hospital performance is a multidimensional construct, we developed two measures for assessing it. One was the occupancy rate (the average percentage rate of beds occupied in the hospital). Zucker (1987) notes that occupancy rate is the most common measure of performance in hospital research. It was an appropriate performance measure for our study because it indicates how well a hospital's service mix matches demand. The extent to which beds

are filled or empty has a direct link to a hospital's current service offerings (beds would not be filled if most service offerings were not demanded).

Because our sample included for-profit hospitals, we thought it necessary to use a measure that indicated a hospital's financial performance. We calculated financial performance as the ratio of net income to operating revenues for each year.

### Control Variables

*Density.* Organizational ecologists have given considerable attention to the effect of density on populations of organizations (e.g., Hannan and Freeman 1989). Density is also prominent in the I/O literature as a measure of competitive intensity (Scherer and Ross 1990). Empirical results from both perspectives show that higher numbers of competitors (e.g., higher densities) produce higher levels of competition, prompting more organizations to exit the market as their profits decline. To control for those effects, we measured density at the service level as the total number of competitors offering the service within a county, a measure consistent with previous research (e.g., Hannan and Freeman 1989).

*Competitors Contracting.* At an aggregate level, the extent to which competitors use contractual agreements should influence the competitive landscape associated with a particular market and consequently the likelihood of market exit by individual firms. The strategic flexibility provided by contracting (Harrigan 1985) is likely to affect the level of an organization's commitment to maintaining a presence in a service provided through contracting arrangements. With more of their own resources at stake, rival organizations providing services in-house are likely to defend their markets vigorously, increasing competitive pressures with those markets (Chen and MacMillan 1992). To control for effects associated with the level of contracting within a service market, we calculated the number of hospitals providing the service under contract within a county.

*Historic Exit Rate.* We treated all services currently offered by each hospital as equally likely to be exited. Obviously, each service has specific characteristics that might encourage or discourage exit, even within the relatively homogenous group of hospital services we examined. Research on strategic change has underscored the importance of partialling out external, market-related effects to isolate firm-specific forces promoting strategic change (Amburgey and Miner 1992).

We used a measure of the historic exit rate for each service in an attempt to capture and control for its unique characteristics that make it more or less likely to be exited than other services. Services with high exit rates are likely to be easier to exit whereas ones with low exit rates might be more difficult to exit or more desirable to retain.

The historic exit rate for each service was measured by totaling the number of exits from the service in the prior year(s) in the entire sample and dividing the total by the number of hospitals that could have exited the service each year. We used a cumulative average. The exit rate for the first year of our sample (1981) was the percentage of hospitals that exited the service (of those that could) in the prior year (1980). Starting with the second year 1982, the exit rates for the prior two years (1980 and 1981) were averaged. The rates for the prior three years (1980–1982) were averaged to obtain the rate for the third year, and so on.

*Statewide Service Density.* Because we treated all services as equally likely to be exited, we needed to provide some indication of which services constituted a basic set of services that all hospitals offered and where the probability of exit was likely to be low. For example, some hospitals seek accreditation from the Joint Council on Hospital Accreditation (JCHA). The JCHA has designated a fairly well defined set of services that a hospital must provide in order to be accredited. We included a measure of the proportion of hospitals in our entire sample that provided each service in each year as a control.

*MDs per Capita.* Competition for critical resources may also have an important effect on market exit. For example, hospitals may be in an environment of intense competition for physicians, who are needed both to provide services to patients and to refer patients to the hospital. Such hospitals are likely to view attracting physicians as an important activity and this concern could potentially increase the significance of physician influence as a potential barrier to market exit. Physicians may prefer working for and referring their patients to a hospital with a comprehensive set of services, creating pressure on the hospital to maintain the services it currently offers (Fennell 1980). Such pressure is likely to be greatest when physicians are in relatively short supply, and thus have bargaining power with the hospital. To control for that possibility, we included a measure of physician availability, the number of physicians per capita in a county, in our models.



*Ownership.* Ownership type may have an important influence on strategic change. Because for-profit hospitals have a higher level of market orientation than not-for-profit hospitals, they would be more likely to react to market and competitive pressures by exiting services (Shortell et al. 1990). Several studies indicate that for-profit hospitals are more likely to respond to competitive and regulatory changes through the addition, divestiture and reorganization of hospital services (Goodstein and Boeker 1991; Goodstein et al. 1994, Shortell et al. 1990). We represented ownership as a dichotomous variable indicating whether a hospital operated on a for-profit or not-for-profit basis.

*Hospital Size.* To control for the differences in market exit due solely to hospital size, we included two control variables in our models. Our first measure calculated size as the average number of beds available in a hospital in a given year. Number of beds relates more closely to the potential for multimarket coverage (more likely with larger hospitals) than other measures of size. Our second measure of size was a count of the number of services a hospital currently offered. We felt this measure was necessary because hospitals with few services might have high levels of overlap due to the fact that they offer only a basic set of services found in all hospitals and thus would tend to mimic small rivals exactly. A count of the number of services currently offered by a hospital in each year controls for that possibility.

#### Model Specification

We used a lagged structure to model market exit. The dependent variable measured whether an exit had occurred in a given service market from period  $t$  to  $t + 1$ . Each of the explanatory variables was measured in the prior period ( $t$ ).

$$p(\text{market exit})_{t,t+1} = f(\text{Multipoint Contact, Service Mode, CEO Change, Performance, Density, Number of Competitors Contracting, Historic Exit Rate, Statewide Service Density, MDs per Capita, Ownership, Total Beds, Number of Services}).$$

Because the dependent variable takes on only two values (1 = service exited; 0 = service still offered), we tested our models using logistic regression, a procedure

that relates binary dependent variables to one or more continuous independent factors utilizing maximum likelihood estimation. Logistic regression was appropriate also because our focus was on the effects of multipoint competition on the behavior of individual hospitals, rather than its effect on an aggregate market rate. We included dummy variables representing each year and each county in our sample to control for temporal differences and differences in the basic carrying capacity of the counties. Although each model contained these dummy variables, we do not report the associated parameter estimates to improve the readability of the tables. We ran a hierarchical regression, entering our control variables in the first step, our service mode, CEO change and performance measures in the second step and our multipoint variable in the last step.

A critical issue in estimating models based on data such as ours is whether the assumption of independence of observations is tenable. Because multipoint theory holds that firms attempt to coordinate their actions across markets, some of a firm's moves (such as exiting several markets simultaneously) may be part of a coordinated strategy and thus not statistically independent. Lack of statistical independence would violate a key assumption of maximum likelihood estimation and could bias the results.

Prior multipoint studies have noted this problem and employed various techniques to deal with it. For example, Barnett (1993) chose to treat this issue as a sampling problem. He inversely weighted the exit decisions of the multipoint firms in his sample. However, he acknowledged that such an approach does not deal directly with the independence problem. We handled this problem in a different way, one which deals with the independence question directly. Liang and Zeger (1986) showed that maximum likelihood estimation with samples similar to ours is not prone to bias in the estimates of the parameters. Their analysis demonstrates that it is the estimates of the standard errors of the parameters that are likely to be affected by a lack of statistical independence among the observations. They present a formula for calculating adjusted standard errors that produces unbiased and consistent estimates. Using their approach, we calculated adjusted standard errors, which then served as the basis for all significance tests of our parameter estimates. (The details of the procedure are available from the authors.)

#### Subsample Analyses

We conducted a series of subsample analyses to ascertain whether the effects of two of our independent

variables extended beyond those captured by the estimated parameter alone. Because both mode of service offering and ownership were measured as dummy variables, the interpretation of their estimated coefficients is limited to a difference in intercept between the two cases represented by the binary coding.

As the discussion leading to H2 indicates, providing a service in-house and contracting for it involve different levels of both psychological commitment and investment of firm assets. Exiting a market in which participation is achieved under contract and exiting when a firm's own assets are employed are therefore likely to be substantially different events, with potentially different antecedent influences. Constraining the parameters for the other variables in our model to be equal for those two conditions, which is the implicit assumption when a dummy variable is used, masks such differences. To investigate the possibility that the other variables in our model affect exit from contracted services and in-house services in unique ways, we split our sample into two subsamples, one for observations of services provided under contract and one for observations of services provided in-house. We ran logistic regressions of our full model (including all control and hypothesized variables) on the two subsamples. That procedure enabled us to determine whether the two modes of service offering differ beyond a difference in intercept because the estimated coefficients for all independent variables were allowed to vary across the two subsamples.

We followed the same procedure with the ownership variable, creating two subsamples based on the form of hospital ownership (for-profit and not-for-profit) and testing the full model on each. The influence of for-profit ownership is likely to extend beyond that captured by the parameter for the dummy variable alone. For example, for-profit hospitals, because they typically have higher percentages of physicians on their boards (Goodstein and Boeker 1991), are likely to react to changes in physician availability in the environment more readily than not-for-profit hospitals. In addition the two types of hospitals are likely to differ in their degree of adaptation to competitive conditions. The introduction of the prospective payment system (PPS) in 1983 shifted the burden of cost control to hospitals and created a new incentive to direct resources from less profitable to more profitable services. In addition, throughout the 1980s competitive pressure to control costs and manage hospital services more effectively intensified with the growth of managed care institutions such as HMOs (Meyer et al. 1990). Those changes increased competitive rivalry for all hospitals, but for-

profit hospitals have been more responsive and market oriented in adapting to these environmental changes (Shortell et al. 1990). We discuss the results of the subsample analyses after reporting our results for the full sample.

## Results

Means, standard deviations and zero-order correlations for the variables in our models are reported in Table 1. The results of the analyses based on the entire sample are reported in Table 2. As our primary interest is intermarket competitive influences on exit, we begin by discussing the effects of our control variables. In particular, we partial out intramarket measures of competitive intensity of controlling for density and competitors contracting. We then evaluate how performance and factors contributing to exit barriers, such as the provision of the service in-house or under contract, affect the likelihood of exit. Finally, we add our measure of multipoint contact to assess its contribution to the explanatory power of the expanded model and address the overall effectiveness of the three models. We then discuss the two subsample analyses.

### Effects of Control Variables on Market Exit

Model 1 in Table 2 contains only the dummy variables for year and county. It is included to provide a baseline comparison for the subsequent models. Model 2 represents the effects of our eight control variables on the likelihood of market exit: density, number of competitors contracting, historic exit rate, statewide density rate, MDs per capita, ownership and two measures of hospital size. We discuss density last. At first glance, it appears that markets generally characterized by higher levels of contracting also seem to exhibit a higher likelihood of exit. However, once the variable representing whether or not a given service is contracted by an *individual* hospital enters the model (see Model 3), service markets with a greater incidence of contracting are associated with a reduced likelihood of exit, as expected.

The results for the historic exit rate control variable indicate that, although it was necessary for partialling out interservice differences that our treatment of each service could not capture directly, it did not have a significant effect of its own. The positive sign indicates that services with higher rates of exit had a greater likelihood of exit than those with lower exit rates, but the measure fails to achieve significance in any of our models. Our statewide density measure appears to be necessary to control for basic hospital service plat-

**Table 1 Means, Standard Deviations and Correlations for Market Exit Model<sup>a</sup>**

	Mean	S.D.	Range	1	2	3	4	5	6	7	8	9	10	11	12	13
1 Market exit	0.06	0.24	0-1													
2 Multipoint	0.72	0.13	0-1	-0.017												
3 Service contracted	0.16	0.36	0-1	0.056	-0.037											
4 CEO Change	0.20	0.40	0-1	0.017	0.070	-0.001										
5 Performance (financial)	0.06	0.29	-3.62-8.96	-0.036	-0.043	-0.006	-0.066									
6 Performance (occupancy)	0.66	0.18	0-1.56	-0.044	-0.214	0.066	-0.299	0.192								
7 Density	40.61	43.98	1-137	-0.041	0.007	0.051	0.116	0.002	-0.207							
8 Number of competitors contracting	7.40	14.26	0-79	-0.029	-0.061	0.295	0.064	0.004	-0.122	0.652						
9 Historic exit rate	0.01	0.01	0-0.48	0.082	0.020	-0.015	-0.006	0.004	0.031	-0.148	-0.131					
10 Statewise density rate	0.65	0.26	0.01-0.98	-0.241	0.009	-0.031	0.054	-0.018	-0.133	0.355	0.233	-0.388				
11 MDs per capita	0.28	0.12	0.11-0.78	0.038	0.045	-0.029	-0.074	0.037	-0.013	0.060	0.035	-0.004	-0.083			
12 For-profit ownership	0.39	0.49	0-1	-0.025	0.170	0.119	0.178	-0.054	0.399	0.237	0.151	-0.028	0.150	-0.124		
13 Size: Total beds	198.99	150.83	6-1015	0.037	-0.171	0.154	-0.069	0.041	0.269	-0.006	0.019	0.031	-0.174	0.273	0.395	
14 Size: Number of services	75.42	25.64	10-167	0.061	-0.253	-0.184	-0.081	0.005	0.326	-0.150	-0.117	0.066	-0.242	0.229	-0.483	0.738

<sup>a</sup>All correlation coefficients greater than 0.007 are significant at the 0.001 level.

**Table 2** Maximum Likelihood Estimates of Logistic Regressions<sup>a</sup> Dependent Variable = Market Exit ( $t, t + 1$ )

Independent Variables ( $t$ )	Model 1 <sup>b</sup>	Model 2	Model 3	Model 4
Density		-0.784***	-0.097***	-0.119***
No. competitors contracting		0.122**	-0.062***	-0.065***
Historic exit rate		0.116	0.074	0.072
Statewide density rate		-0.432***	-0.424***	-0.412***
MDs per capita		-0.410	-0.450	0.440
For-profit ownership		0.191***	0.135***	0.138***
Size: Total beds		-0.107***	-0.051***	-0.051***
Size: Number of services		0.043***	0.039***	0.014***
Service contracted			0.186***	0.184***
CEO change			0.023**	0.024**
Performance (financial)			0.048**	0.048**
Performance (occupancy)			-0.139**	-0.149**
Multipoint				-0.073**
$\chi^2$ for covariates	728.222***	4143.969***	4861.329***	4912.014***
df	32	40	44	45
Number of hospitals	283	283	283	283

<sup>a</sup>Standardized parameter estimates are reported. Adjusted standard errors were used to determine significance levels.

<sup>b</sup>Model 1 contains year and county dummies only (for five years and 29 counties). All models contained these year and county dummies, but their coefficients are not reported to improve the readability of the tables.

\*\* =  $p < 0.01$

\*\*\* =  $p < 0.001$

forms. Hospitals were less likely to exit services with higher statewide densities. Our measure of resource availability, MDs per capita, did not significantly influence the likelihood of market exit. The probability of market exit is associated with ownership type. For-profit hospitals were more likely to exit service markets than not-for-profit hospitals. Results for hospital size produce an interesting picture, suggesting that different measures of size capture different aspects of a hospital's operations. Whereas offering a greater number of services is associated with an increased likelihood of market exit (as expected), large hospitals, as measured by number of beds, were less likely than smaller ones to exit service markets. Perhaps large hospitals were better matched to their patients' needs, or additional services were deemed necessary to fill available beds.

Contrary to our expectations and both ecological and economic arguments, density has an inverse relationship with exit, with higher density levels associated with a decreased likelihood of market exit. Apparently, market exit is less likely in markets with a greater number of hospitals and presumably more intense competition. That finding may be related to the particular context of the hospital industry. Hospitals have been characterized as being very status- and prestige-oriented institutions (Fennel 1980, Lee 1971). To attract top physi-

cians and consequently increase their own prestige, hospitals in our sample may have been unwilling to abandon service offerings for fear of reducing their appeal to that critical constituency. Such prestige pressure may have been much greater for hospitals in service markets with large numbers of competitors.

### Results of Hypotheses

H2 pertains to the effect of market participation mode (in-house or through contract) on market exit. Building on research on strategic flexibility, we posited that exit would be more likely with contracted services because their exit barriers are lower and organizations typically have less invested in contractual arrangements, so less organizational resistance is generated when such arrangements are severed. The results shown in Model 3 of Table 2 support H2.

H3 posited that a change in chief executive would foster exit from markets. The results for Model 2 support a positive relationship between chief executive change and market exit.

H4 states that poorly performing organizations are more likely to exit from markets than better performing ones. The results for Model 3 provide mixed support for that hypothesis. When performance is measured by occupancy, poorer performance (i.e., lower occupancy rates) increases the likelihood of market

exit. Poor performance along that dimension appears to force organizations to modify their strategic posture, supporting the argument that poor performance motivates organizational adaptation, including the exiting of markets. However, when performance is measured in financial terms, better performance increases the likelihood of market exit, contrary of H4.

#### Effects of Multimarket Competition on Market Exit

The central focus of the paper was on the effects of competition, especially multimarket competition. We expected that organizations facing the same competitors in several other markets would be less likely to exit a given market, because such exit would reduce their ability to acquire information about and influence competitors in other markets in which they compete. Model 4 of Table 2 indicates support for that notion. As posited in H4, organizations with higher levels of multipoint contact in particular markets were found to be less likely to exit from those markets. Apparently, to perpetuate mutual forbearance and present a credible deterrent to aggressive action through the use of mutual footholds, a firm should maintain a multiplicity of market contacts with its rivals.

The three models also include an overall assessment of the combined effects of the explanatory variables. As Table 2 reports, the chi-square statistics for all three models are highly significant ( $p < 0.001$ ). Examining the changes in the chi-square statistic from Model 1 to Model 4, we see that Model 2 represents a significant improvement over Model 1 (a change in  $\chi^2$  from 728 to 4144 with eight additional degrees of freedom,  $p < 0.01$ ). Adding our explanatory variables increased the chi-square statistic to 4861, again a significant increase ( $p < 0.01$ ) with the addition of only four degrees of freedom. Model 4, with our multipoint measure added, significantly improves upon Model 3 (an increase in  $\chi^2$  to 4912 with one additional degree of freedom,  $p < 0.01$ ). That increase clearly supports our position that the competitive landscape, captured by multipoint measures, is an important consideration for firms contemplating strategic change.

Table 2 reports standardized parameters, enabling us to directly compare the relative effects of the variables in our models on the likelihood of market exit despite the differences in their units of measure. The statewide density rate appears to have the greatest effect on the likelihood of exit. Apparently, when a given service is considered essential for hospital operations (i.e., it has a high statewide density), exit from that service is unlikely. Our multipoint measure is at about the middle among our measures in its relative

influence on market exit. Although it does not have the strongest influence (statewide density, density and occupancy, for example, have larger standardized parameter estimates), it has a substantial effect on the likelihood that a firm will exit a service market, an effect that is greater than that of two of our hypothesized variables (CEO change and financial performance).

#### Analysis of Subsamples

We divided our sample into two subsamples to investigate whether the mode of service provision and profit orientation would effect other variables in our model when the equality constraint on the estimated parameters for those variables was relaxed. The results of the subsample analyses are reported in Table 3.

To determine whether the coefficients of the respective pairs of subsamples differ significantly (e.g., whether the coefficients for multipoint contact differ significantly between for-profit and not-for-profit hospitals), we conducted an additional series of analyses. We individually added the interaction of each independent variable with the appropriate dummy variable representing each subsample split to the complete model (Model 4, Table 2). The difference between the coefficients for each pair of subsamples is significant if the interaction term is significant. The significant differences are indicated in boldface in Table 3.

On the issue of whether a hospital's mode of service provision affects how competitive pressures and exit barriers influence the likelihood of market exit, our results indicate that there is, in fact, a larger impact than that captured solely by a difference in intercept (see columns 1 and 2 of Table 3). Multipoint contact appears to have a direct influence on market exit only when a firm's assets have been invested and a service is provided in-house. Although the sign of the multipoint measure for the contracting subsample is negative, it is non-significant. Similarly, none of our hypothesized relationships materialize in the contracting subsample. Those results suggest that organizations react to competitive pressures by restructuring only the products or services that entail the use of their own assets. In addition, the inertial effects of exit barriers such as a long-tenured CEO apparently are not related to contractual agreements to provide services. The results do not mean that contracted services are never exited. In fact, in our model using the full sample, contracted services were more likely to be exited than services provided in-house. What the results show is that the factors influencing exit from service markets are likely

**Table 3** Maximum Likelihood Estimates of Logistic Regressions for In-House / Contract and For-Profit / Not-for-Profit Subsamples<sup>a</sup> Dependent Variable = Market Exit ( $t, t + 1$ )

Independent Variables ( $t$ )	In-House	Contract	For-Profit	Not-for-Profit
Density	-0.173***	0.126***	-0.215***	-0.095***
No. competitors contracting	<b>0.046***</b>	-0.270***	-0.060***	0.013***
Historic exit rate	<b>0.089</b>	<b>0.038</b>	<b>0.043</b>	<b>0.100</b>
Statewide density rate	-0.409***	-0.496***	-0.359***	-0.460
MDs per capita	-1.158	<b>0.430</b>	-0.249	-0.734
For-profit ownership	<b>0.135***</b>	<b>0.115***</b>		
Size: Total beds	-0.013***	-0.060***	-0.236***	<b>0.059***</b>
Size: Number of services	-0.023***	<b>0.028***</b>	<b>0.066***</b>	-0.025***
Service contracted			<b>0.159***</b>	<b>0.168</b>
CEO change	<b>0.034***</b>	-0.007	0.004	0.035*
Performance (financial)	0.057***	0.049	-0.083***	<b>0.077</b>
Performance (occupancy)	-0.149***	-0.104	-0.098***	-0.115**
Multipoint	-0.089***	-0.031	-0.123***	-0.037**
$\chi^2$ for covariates	3013.082***	1243.337***	2425.812***	1243.337***
df <sup>b</sup>	44	44	37	42
Number of hospitals	283	278	135	148

<sup>a</sup>Standardized parameter estimates are reported. Adjusted standard errors were used to determine significance levels. All regressions included dummy variables for county and year whose parameter estimates are not reported. Within each subsample pair (in-house/contracted; for-profit/not-for-profit), boldface coefficients for each independent variable differ significantly (at the  $p < 0.05$  level or better).

<sup>b</sup>Different degrees of freedom are due to the elimination of county dummies for counties with only for-profit or not-for-profit hospitals.

\* =  $p < 0.05$

\*\* =  $p < 0.01$

\*\*\* =  $p < 0.001$

to have a different effect when a service is offered under contract than when it is provided in-house.

For-profit and not-for-profit hospitals were also modelled separately (see columns 3 and 4 of Table 3). The differences between the two types of hospital ownership are not as pronounced as those between contracting and in-house service provision, but several of the differences are interesting. Both types of hospitals were less likely to exit services that were also offered by their multipoint rivals, which suggests that they both benefit from multipoint arrangements. As expected, financial performance affected the likelihood of market exit only for for-profit hospitals. That finding might explain the opposite effects found for financial performance and occupancy when the whole sample was used. For-profit hospitals were less likely to exit services when performance was good on both of our performance measures, supporting H4. For not-for-profit hospitals, however, only the occupancy measure of performance had a significant relationship with the likelihood of market exit.

Surprisingly, a change in chief executive appeared to prompt strategic change only in the not-for-profit sub-

sample. Perhaps CEOs in that subsample were longer tenured, making a change much more of a break with the past than in the for-profit group. Although we do not have specific data on CEO tenure, we found some support for that contention, as there were relatively more changes of CEO in for-profit than in not-for-profit hospitals (an average of 0.30 and 0.14, respectively). CEOs in for-profit hospitals may also be more attuned to market developments and pre-disposed to respond quickly to changes in their environments.

Exit decisions have complex dynamics. Our results suggest that a combination of factors are capable of influencing exit and that these factors affect hospitals differentially, depending on their mode of service provision and form of ownership. Clearly, students of competition are well advised to expand models that begin with traditional competitive measures such as density by taking into account both internal organizational factors and a firm's external relationships.

## Discussion

The primary purpose of our study was to examine the effect of multipoint competition at the service level on

market exit. We extended the mutual forbearance arguments of Edwards (1955), Barnett (1993) and others and the rationale for establishing mutual footholds (Karnani and Wernerfelt 1985) to explore how competition in one market is interdependent with the position of competitors in other markets. Our underlying hypothesis was that a firm would be less likely to exit a market if its competitors there were firms with which it competes in other markets. The study results suggest that firms are indeed reluctant to exit markets in which they encounter competitors that are its rivals in other markets as well.

Our results also provide a thought-provoking extension to current network theories about competition. Burt (1992) analyzes how actors in a competitive environment are able to out-perform their rivals. He examines how the relationships those actors have with others in their networks yield preferential positions and provide information that enable them to exploit opportunities and earn higher profits than their rivals. His argument details the relationships competitors have with others, but he excludes relationships between direct competitors from his analysis. He recommends that network actors seek only a minimum number of contacts with other actors for efficiency, arguing that additional contacts yield redundant information at a high maintenance cost. However, if one considers the intermarket relationships between competitive actors themselves, our multipoint results underscore the advantage of additional points of contacts for securing market-related information on one's competitors. In direct competitor relationships, trust is a scarce commodity and additional points of contact with individual competitors are essential for verifying the reliability of information acquired through those channels. The value of our research derives from our demonstration that network analyses of competitive relationships must incorporate an appreciation for the context of a relationship. As competitors often deliberately distort information they provide, the reduction in uncertainty derived from an additional tie to a rival organization may outweigh the costs of being overinformed by redundant network ties.

#### **Exit Barriers**

In addition to the effects of competition on market exit, we examined several variables representing exit barriers. Of particular interest was the influence of organizational contracting on market exit. Our findings indicate that although multipoint contact did not influence exit from contracted services, contracting firms in general were able to exit markets more easily.

The study of the effects of contracting on market exit has important implications for the expanding literature on outsourcing. To the extent that organizations are able to outsource many of their services, they may be able to reduce costs and enhance their strategic flexibility (Harrigan 1985). More recently, many observers have argued that such a "hollowing out" of the organization can lead to a decline in the set of core competencies needed to compete in newly emerging and rapidly transforming markets in the future (Bettis et al. 1992, Prahalad and Hamel 1990).

Recent work in organization ecology suggests that organizations *are* capable of finer-grained adaptations to environmental factors (Haveman 1993). Market exit is one potential approach to incremental adaptation to the environment. However, if such adaptation results in a reduction in the scope of core competencies typical to "hollow" organizations, outsourcing may have an important influence on the long-term viability of the firm. If core areas become besieged by competitive pressures, a reduced range of competencies might cause populations of such organizations to have more instances of organizational death than of adaptation, a consequence is keeping with traditional ecological arguments.

#### **Future Research**

The most critical future research need is the examination of exit at the product or service level in other industries. We selected hospitals for our study of market exit because of the availability of detailed market data for identical sets of services among competitors. The depth and detail of the longitudinal data available seemed to compensate for the limitations of a single-industry study. Expansion of our research to competitors in other industries and to emerging and declining markets is necessary for a fuller understanding of the phenomenon of exit in competitive environments.

Several other extensions of our research would be worthwhile. To understand better the mechanism of strategic change, more detailed measures of multipoint competition might be incorporated. Often, a firm will derive a major proportion of its revenue or profits from a relatively small number of its markets. An operationalization of multipoint competition that includes some measure of the importance of individual markets to the firm (possibly by weighting each in terms of its contribution to revenue or profits) would advance the current state of knowledge on the effects of multipoint competition.

Additionally, it would be useful to include information about the level of participation in particular mar-

kets. In our study, market exit was defined as complete withdrawal from a market, operationalized as a dichotomous dependent variable. Rather than complete withdrawal, organizations may decide on major down-scaling of participation (e.g., reducing the provision of a particular service by 50% or scaling back the number of different product models that are offered) while still remaining in the market. By examining changes in the contribution of each service to revenue or profit, researchers could gain a greater understanding of the differences between total exit from a market and major changes in the level of participation in that market.

Our study was a first attempt to test multipoint arguments within a multiproduct environment, extending prior research that has focused primarily on the competitive effects of multipoint contact across geographic markets in the United States. Subsequent studies should extend and integrate the two approaches. With the rapid rise of globalization, the dynamics of multimarket relationships across national boundaries is an important area for investigation. As national firms increasingly face foreign competition that prompts their own entry into foreign markets, multimarket contact across nations will increase and shape these firms' competitive behavior. Industry analysts have used this logic to explain Scott Paper's recent acquisition by Kimberly-Clark (Thomas 1995). By acquiring Scott Paper, Kimberly-Clark increased its multipoint contact with a key rival, Procter & Gamble, on both a product-market and an international geographic basis by obtaining Scott Paper's established market positions in Europe.

Bartlett and Ghoshal (1989) point out that the likely winners in global competition will be transnational firms that are able to achieve both the global integration of their operations and local responsiveness to individual market conditions. Perhaps as more firms attain transnational status, the integration of their international operations will increase the salience of multimarket contacts with their rivals on a firmwide basis. By having an integrated decision-making structure, such rivals would be better able to establish multimarket equilibriums of the type described by multipoint theories. It would be of both significant theoretical and practical interest to determine whether it is only the transnationals that are able to exploit an international multipoint environment effectively.

## Conclusions

Investigations of the role of competition in market exit have centered primarily on competition at the industry

level rather than differences in competitive relationships among organizations within industries (Carroll 1993). Based on theories of multipoint competition and network analysis, our research is an important step toward exploring the effects of contact across several markets on competition and market exit.

Our results also extend the findings of organizational ecologists, who have tended to define market exit in terms of organizational failure. Following up on some recent work (Haveman 1993), we demonstrate that organizations are capable of finer-grained adaptations to competitive environments, as they can strategically exit particular service markets in lieu of a total shut-down. The multipoint perspective offers suggestive evidence that firms are able to structure their environments to reduce the competitive pressures they face, perhaps increasing their survival chances. By taking into consideration multiple sources of competitive intensity, we can better understand the strategies of organizations over time as they change the mix of businesses in which they compete.

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### Appendix

#### Measurement of Multipoint Competition

Measures of multipoint competition must capture the extent to which a firm's product-market scope outside a focal market is similar to that of other firms also participating in the focal market. We used the following procedure for determining the degree of multimarket overlap among hospitals in a given geographic region. Assume a county has four hospitals that are capable of offering any combination of three services. Their current service configurations are as follows:

	Services Offered		
Hospital A	1	2	
Hospital B		2	3
Hospital C	1	2	3
Hospital D	1		

Hospitals A, B and C can exit service 2 (i.e., they all currently offer the service). For those three hospitals, the degree of service overlap they have with the other hospitals also offering service 2 is shown below, with the rows representing the focal hospital and columns their overlap with other hospitals currently offering service 2. Note that the overlap of each hospital with hospital D is not calculated because hospital D does not currently offer service 2.



Overlap for Hospitals Able to Exit from Service 2					
	A	B	C	D	AVG
A	—	50%	100%	NA	75%
B	50%	—	100%	NA	75%
C	67%	67%	—	NA	67%
D				—	

The average overlap for each of the three hospitals (A, B and C) is calculated by dividing the sum of the individual overlap percentages by the total number of other hospitals offering service 2 in their county. A similar process is carried out for each service from which a particular hospital can possibly exit. When the process is completed, we obtain data similar to the following, which characterizes a hospital's overlap with its rivals for each service it can exit.

	Service		
	1	2	3
Hospital A	75%	75%	—
Hospital B	—	75%	100%
Hospital C	50%	67%	67%
Hospital D	100%	—	—

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