Methods Articles

Examining the Scope of Multibusiness Health Care Firms: Implications for Strategy and Financial Performance

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Objective. Use theory and data to examine the scope of corporate strategies for multibusiness health care firms, also known as organized or integrated health care delivery systems.

Data Sources. Data are from the 2000 HIMSS Analytics Annual Survey of integrated health care delivery systems (IHDS), which provides complete information on businesses owned by IHDS.

Study Design. *Scope defined as the breadth and type of businesses in which a firm chooses to compete* is measured across seven separate business areas: (1) health plans, (2) ambulatory, (3) acute, (4) subacute, (5) home health, (6) other related nonpatient care businesses, and (7) external collaborations. Theories on strategy and organizational configurations along with measures of scope and a novel dataset were used to classify 796 firms into five mutually exclusive groups. The bases for classification were two competitive dimensions of scope: (1) breadth of businesses and (2) mix of existing core businesses versus new noncore businesses.

Data Extraction Methods. Unit of analysis is the multibusiness health care firm. Sample consists of 796 firms, defined as nonprofit organizations that own two or more direct patient care businesses in two or more separate areas across the health care value chain. Firms were clustered into five mutually exclusive organizational configurations with unique scope characteristics revealing a new taxonomy of corporate strategies.

Principal Findings. Analysis of the scope variables revealed five strategic types (along with the number of firms and distinguishing features of each strategy) defined as follows: (1) Core Service Provider (340 firms with the smallest scope providing core set of patient care services), (2) Mission Based (52 firms with the next smallest scope offering core set of services to underserved populations), (3) Contractor (266 firms with medium scope and contracting with physician groups), (4) Health Plan Focus (83 firms with large scope and providing health plans), and (5) Entrepreneur (55 firms with the largest scope offering both a core set of services and investing in a variety of new noncore business opportunities including many for-profit ventures). Significant differences in financial performance among the strategies were found when controlling for payer reimbursement conditions. Specifically, in an unfavorable condition with high Medicaid and low commercial insurance, the Mission Based strategy performs significantly worse while the Entrepreneur strategy performs surprisingly well, in comparison with the other strategies.

Conclusions. Findings suggest: (a) scope can be used to classify a large number of multibusiness health care firms into a taxonomy representing a small group of distinct corporate strategies, which are recognizable by senior management in the health care industry, (b) no single strategy dominates in performance across different payer profiles, instead there appears to be complementarities or fit between strategy and payer profiles that determines which firms perform well and which do not under different conditions, and (c) senior management of nonprofit health care firms are cross-subsidizing unprofitable patient care through ownership of nonpatient care businesses including for-profit ventures.

Key Words. Corporate strategy, scope, organizational configurations, mobility barriers, multibusiness health care firms

Over the past several decades, large, complex multibusiness health care firms, more commonly known as organized or integrated delivery systems, have formed primarily through related horizontal and vertical scope expansions across the health care value chain (Robinson 1996; Gaynor and Haas-Wilson 1999; Bazzoli et al. 2001; Friedman and Goes 2001; Burns and Pauly 2002; Luke, Walston, and Plummer 2004). The health care value chain consists of patient care and nonpatient care businesses. Patient care businesses include ambulatory, acute, subacute, and home health care offered in different settings such as physician offices, hospitals, skilled nursing facilities, nursing homes, and patient homes. Nonpatient care businesses contain a myriad of ventures such as pharmacies, laboratories, and medical devices. Such firms, therefore, exhibit considerable product/market diversity in their scope of business activities.

Prior research by Bazzoli et al. (1999) and Dubbs et al. (2004) empirically derived a taxonomy to define and quantify what previously appeared to be a chaotic evolution of new health care organizational forms. They classified 575 multibusiness hospital systems and networks into nine distinct clusters based on three strategic/structural dimensions: differentiation, representing the number of products/services along the continuum of care; integration, mechanisms to align and coordinate care across different businesses; and centralization, extent to which activities take place at centralized locations. They found organizations in each cluster had similar strategic and structural orientation and concluded that important and meaningful similarities exist across many evolving organizations (Bazzoli et al. 1999).

This article contributes to prior research in two important ways. First, scope akin to the differentiation dimension in Bazzoli et al. (1999) is used to empirically derive a taxonomy representing corporate strategies of multibusiness health care firms. Corporate strategy evolves over an extended period of time as a complex pattern of choices, which makes direct observation and measurement of corporate strategy difficult. However, prior research has shown that *scope, defined as the breadth and type of distinct businesses in which a firm chooses to compete*, is central to a firm's corporate strategy (Andrews 1971; Rumelt 1974; Chandler 1990; Collis and Montgomery 1998; Ghemawat 2003; Harrigan 2003). Scope is a strong, measurable indicator of a firm's corporate strategy because it encompasses choices with regard to horizontal integration, vertical integration, and geographic location. Therefore, this study utilizes scope to measure corporate strategy in order to answer two research questions: (1) Can we identify a small number of distinct and mutually exclusive corporate strategies characterizing a large number of multibusiness health care firms? (2) Do significant differences in financial performance exist among these corporate strategies?

The second extension is the use of a new dataset obtained from HIMSS Analytics Database (derived from the Dorenfest IHDS+Database™) that enabled the measurement of scope of 796 multibusiness health care firms nationwide for the year 2000. This novel dataset provides more complete information on the types, breadth, and size of businesses owned by each firm across the health care value chain when compared with the American Hospital Association (AHA) data used in the Bazzoli et al. (1999) and Dubbs et al. (2004) studies. The data also contain information on ownership of nonpatient care businesses and on collaborations with other firms not available in the AHA data. HIMSS Analytics collects the scope and financial data at the corporate level, thereby allowing the unit of analysis to be the entire multibusiness firm, not the subunit hospital level as in prior studies. This higher level of analysis and more complete data on firm scope makes it possible, for the first time, to empirically derive a taxonomy of corporate strategies and relate them to financial performance.

Bazzoli et al. (1999) noted, "the need to undertake research that categorizes and classifies newly emerging health care organizations is immense." At this preliminary stage, the development of a taxonomy of corporate strategies based on scope is a way by which research into and theory relating to multibusiness health care firms can be advanced. Research is advanced by examining, for the first time, the types of businesses comprising these evolving organizational forms. Theories of organizational configurations and strategic

management are applied to determine whether competitive dimensions of scope might enable clear distinctions to be drawn across groups of firms with implications for strategy and financial performance.

This article is organized into five sections: (1) conceptual framework, (2) research methodology and classification procedure, (3) results, (4) relationship between corporate strategy and financial performance, and (5) discussion of the results.

THEORETICAL FRAMEWORK

An effective corporate strategy is a set of choices, either implicit or explicit, around the dimensions of scope, ownership, and organizational design that are configured with a company's resources to generate sustainable competitive advantage (Anand 2005). This definition highlights key elements comprising the theoretical framework of corporate strategy including ownership form, organizational design, scope, configuration, and competitive advantage. Ownership form is concerned with whether to use the market, hierarchy (full ownership), or alternative arrangements, such as alliances, joint ventures, to set firm boundaries (Coase 1937; Williamson 1985; Hart and Moore 1990; Holmstrom and Roberts 1998). Organizational design involves the processes and systems that serve as integrative mechanisms among the separate business units including information rights (Arrow 1975), allocation of decision rights (Jensen and Meckling 1994), information systems, and management control systems (Kaplan and Norton 1996; Simons 2005). Scope is the breadth and type of businesses in which a firm chooses to compete. Scope includes choices with regard to horizontal integration (product markets), vertical integration (stage of production), and geographic location (local, national, or global). Decisions about scope are central to a firm's corporate strategy, determining the firm's size, the product markets in which it competes, and the relatedness among its business units (Rumelt 1974; Chandler 1990; Ghemawat 2003; Harrigan 2003).

In the past two decades, a significant part of a multibusiness health care firm's corporate strategy involved horizontal and vertical scope expansion and configuration across the health care value chain (Robinson 1996; Gaynor and Haas-Wilson 1999; Coddington et al. 2000; Shortell et al. 2000; Bazzoli et al. 2001; Friedman and Goes 2001). Emphasis was placed on scope because executives believed owning a combination of businesses would confer competitive advantage in the form of increased efficiency, access, referrals, and market power (Burns and Pauly 2002). Therefore, in this study, scope is used

to represent corporate strategy. As shown in Figure 1, seven separate business areas are identified from prior research and industry sources to measure scope (Shortell, Gillies, and Anderson 1994; HIMSS Analytics 2000): (1) health plans, (2) ambulatory care including clinics, physician practices, and physician group affiliations, (3) acute care, (4) subacute care including long-term, skilled nursing, behavioral health, psychiatric, and rehabilitative services, (5) home health care, (6) other related nonpatient care businesses (e.g., laboratories, pharmacies, and fitness centers), and (7) collaborations with other firms (e.g., joint ventures, alliances, and partnerships).

Scope is used to measure corporate strategy by applying existing theory on organizational configurations. Organizational configurations are defined as groups of firms sharing a common profile along conceptually distinct characteristics such as strategy, structure, and processes (Miller, Friesen, and Mintzberg 1984; Ketchen, Thomas, and Snow 1993; Ferguson and Ketchen 1999). There are four premises underlying the theory on organizational configurations. First, organizations are complex entities whose elements of strategy, structure, and processes have a natural tendency to coalesce into similar groups or configurations composed of interdependent and mutually supportive relationships. Second, a relatively small number of these configurations encompass a large fraction of organizations. Third, the small number of

Figure 1: Scope of Businesses and Measures

Scope of Businesses						
Non-Core	Core Businesses			Non-Core Businesses		
Health Plan	Ambulatory Care	Acute Care	Subacute Care	Home Health Care	Other Businesses	Collaborations
Managed care health plans	Preventive, diagnostic, therapeutic and rehabilitative services not classified as inpatient or residents	Hospital facilities that provide inpatient services	Long-term, skilled nursing, behavioral health, psychiatric facilities and hospice	Physical care and support to patients and their families at home	Businesses that do not provide direct patient care and are owned by the firm (i.e., laboratories, pharmacies, fitness centers, etc.)	External relationships the firm has formed to support or deliver health care services including joint ventures, alliances and partnerships
Own health plan (Y=1, N=0)	Number of facilities	Number of facilities	Number of facilities	Number of facilities	Number of other businesses	Number of collaborations
Number of covered lives	Number of outpatient visits Physician affiliation (Y=1, N=0) Number of physician affiliations	Number of staffed beds Number of operating rooms	Number of staffed beds			

configurations will exhibit distinct internal complementarities or “fit” among strategic, structural, and process variables from which can be developed conceptual typologies or empirical taxonomies. Fourth, these configurations tend to be stable because the strong interdependencies among the strategy, structure, and process variables are complementary and require simultaneous change of many interrelationships in order to move to another type of configuration. In other words, firms are driven toward a small number of stable configurations in order to achieve consistency in their internal characteristics, mutual complementarities in their processes, and fit with their environmental situation. In sum, “at the heart of configurational theory is the assumption that increased understanding of organizational phenomena is better achieved by identifying distinct, internally consistent sets of firms than by seeking to uncover relationships that hold across all organizations” (Ketchen, Thomas, and Snow 1993).

Theory on organizational configurations provides the rationale for how a large number of firms can be classified into a small number of mutually exclusive groups using distinct measurable characteristics such as scope to infer other organizational features such as corporate strategy. The use of scope to derive organizational configurations is based on two theoretical perspectives from the strategic management literature—strategic choice and organizational ecology—which assert that a firm’s strategy varies along two competitive dimensions: (1) breadth of operations (narrow versus broad scope) and (2) the extent to which firms pursue new noncore business opportunities versus efficient exploitation of existing core businesses (Ketchen, Thomas, and Snow 1993). Both dimensions represent important mobility barriers because once these fundamental scope choices are made, the ability of a firm to make large changes along either dimension is constrained by the difficulty of acquiring/divesting resources and imitating capabilities required to be competitive in a new position (Porter 1980; Luke, Walston, and Plummer 2004).

In sum, use of the two competitive scope dimensions—breadth and extent of new versus existing business activities—are a relevant basis upon which corporate strategies of health care firms should be classified for the following reasons: (1) choice of scope is a critical aspect of corporate strategy, which involves irreversible investment decisions, (2) theoretical perspectives on strategic choice and organizational ecology identify the two dimensions as important means for firms to create competitive advantage, (3) underlying premises of organizational configurations and mobility barriers suggest the classification based on scope will coalesce firms into similar groups composed of interdependent and mutually supportive relationships among strategy,

structure, and process variables, (4) the mutually supportive relationships or complementarities/fit among these variables result in a stable number of organizational configurations from which can be inferred corporate strategy, and (5) scope expansion has been the primary means health care firms have pursued competitive advantage. The operationalization of the two dimensions of scope used to classify corporate strategies is discussed in the next section on methodology.

METHODOLOGY

Definition of Multibusiness Health Care Firms and Data

Multibusiness health care firms are nonprofit organizations that own two or more direct patient care businesses in two or more separate areas across the health care value chain, one of which is in acute care. In this study, a customized dataset was developed from the HIMSS Analytics database, which includes demographic profiles on 1,430 health care firms. These firms represent almost all health care organizations in the United States that own at least one short term, acute care, nonfederal hospital with at least 100 beds. Six hundred and thirty-four firms were excluded from the study data for the following reasons: missing payer data (414 firms), missing financial data (98 firms), firms with only one direct patient care business (24 firms), data entry errors (48 firms), for-profit organizations (13 firms), and firms with large margin outliers (15 firms).

Table 1 provides descriptive statistics on the differences between nonstudy firms with missing data and firms used in the study. Table 1 statistics suggest strong selection effects. Excluded firms are significantly younger with an average inception date of 1954 versus 1946, significantly larger with an average number of licensed acute care beds of 1,065 versus 369 and average number of staffed physicians of 799 versus 343, and serving a much larger population of 1,875,799 versus 665,472. Interestingly, many of the excluded

Table 1: Comparison between Study and Nonstudy Firms

<i>Variable</i>	<i>Nonstudy Firms with Missing Data</i>	<i>Firms Used in the Study</i>	<i>Nonstudy Firms with Outlier Margin Data</i>
Inception date	1954	1946	1945
Total number of beds (acute care)	1,065	360	614
Total number of physicians	799	343	551
Percentage of firms with health plans	25	15	33
Average service population	1,875,799	665,472	678,276

firms have wide geographic dispersion with health care businesses located throughout the United States including national Catholic systems, large for-profit companies and organizations supported by foundations. The aforementioned studies by Bazzoli et al. (1999) and Dubbs et al. (2004) also excluded large, geographically spread organizations that did not meet the requirements of their conceptual model, which reflected a “local context in relation to the arranging of hospital services, physicians arrangements and insurance activity.” Similarly, in this study the selection effects due to missing data resulted in sample of organizations that appear to compete more locally or regionally.

Another concern is the statistical procedure used to group firms with similar strategic orientation would instead cluster firms according to for-profit versus nonprofit status. Therefore, the remaining 13 for-profit firms were excluded from the study because these firms differ on nonstrategic dimensions such as tax status and regulatory constraints that can confound the statistical analysis. Another issue with the data is large financial performance outliers (margin percent of revenue). Fifteen firms with margins above 20 percent or below – 20 percent were removed from the study due to special circumstances with their financial reporting for the year 2000.

A final concern with the data is the potential confounding of scale (firm size and primary market size) and scope when clustering firms into groups. Therefore, the following steps were taken to minimize this problem. First, logit and square-root transformations were made to the data. Second, the *z*-scores of these transformations were taken. Both these steps reduced large-scale differences among firms. More importantly, third, in order to hold size constant, measures that were especially susceptible to this problem were normalized as discussed in the next section.

Measures

The study employs three types of measures: business, external, and performance. Figure 1 provides the business measures for the seven health care areas: (1) health plans, (2) ambulatory care, (3) acute care, (4) subacute care, (5) home health care, (6) other businesses, and (7) collaborations. In order to minimize the potential confounding of scale and scope, the following business measures were normalized to measure scope: (1) for ambulatory care, the number of outpatient visits was divided by the number of outpatient facilities; (2) for acute care, the number of staffed acute care bed was divided by the number of total acute care facilities; (3) again, for acute care, the number of operating rooms

was divided by the number of acute care facilities; and (4) for subacute care, the number of subacute care beds was divided by the number of subacute care facilities. The following external measures are utilized to test criterion-related validity: inception date, reimbursement sources, and size of service population. Performance measures—annual net revenue, operating expenses, margin (percent of revenue), and total number of full-time equivalents (FTEs)—are also employed to test criterion-related validity and to relate the taxonomy of corporate strategies with financial performance.

Statistical Clustering Procedure

Cluster analysis was applied to classify 796 firms into a small number of mutually exclusive homogenous groups with respect to scope. That is, organizations within each group will have similar scope characteristics with regard to the breadth and type of businesses, while organizations between groups will be significantly different in scope. The following are five cluster analysis steps included in this study (Ketchen and Shook 1996; Sharma 1996). First, the deductive approach was applied to select measures of scope used to classify firms by referencing theories on strategy and organizational configurations. Measures were standardized and checked for multicollinearity (variables with very high correlations were removed from the study) and normality (transformations were made when required). Second, a two-stage clustering procedure was used to derive mutually exclusive homogenous groups or cluster solution. In the first stage, the Ward hierarchical algorithm is used to define the number of groups or clusters and cluster centroids. The number of clusters was identified from viewing dendrograms and using cluster-stopping rules (Calinski and Harabasz pseudo- F index and Duda and Hart index, Stata manual, 2003). In the second stage, k -means iterative partitioning was applied to further refine the cluster solution. The squared euclidean distance was used as the measure of similarity in both stages. Third, reliability was assessed by comparing cluster assignment of firms between the Ward and the k -means algorithms. Reliability is also assessed by separating observations into randomized split halves samples and conducting two separate cluster analysis, then comparing the results between the two samples. Fourth, criterion-related validity was evaluated through significance tests (F -statistic) with external performance variables. Fifth, external validity of the cluster solution was evaluated by interviewing senior management of two multibusiness health care firms to better understand business circumstances driving the results of the study. Discussions centered on important strategic issues driving long-term viability and financial

performance. The top officers in the organization were interviewed for over 3 hours including: CEO, CFO, COO, CIO, and strategy. Results were also presented and discussed with health care scholars, business scholars, and industry consultants at the annual conference on corporate strategy (ACCS; in Germany, 2005), at the international conference on competitive intelligence (SCIP; in Chicago, 2005), and at the annual Academy of Management conference (AoM; in Atlanta, 2006).

Classification Procedure

After the cluster analysis, a classification procedure was applied to derive the taxonomy of mutually exclusive corporate strategies (Marlin, Huonker, and Sun 2002). The classification is based on the development of measures for the two competitive dimensions of scope discussed in the previous section: (1) breadth of operations (narrow versus broad scope) and (2) the extent to which firms pursue new business opportunities versus efficient exploitation of existing businesses. The first dimension is measured by standardizing the mean values for each scope measure and then summing each standardized scope measure (z -scores) into a composite breadth of scope measure for each cluster group. To measure the second dimension, senior management interviews were conducted to categorize business units as existing traditional businesses or as relatively new businesses. Existing businesses were identified as those offering traditional core direct patient care services: (1) ambulatory care, (2) acute care, and (3) subacute care. New business opportunities were identified as all other noncore businesses in the firm: (1) health plans, (2) physician affiliations, (3) home health care, (4) other businesses, and (5) external collaborations. The core businesses scope measures were summed into a composite core business measure for each cluster group, while the noncore businesses scope measures were summed into a composite noncore business measure for each cluster group. Then the composite noncore business measure was divided by the core business measure yielding a ratio that measures the second dimension—the extent to which each cluster group pursues noncore business opportunities in relation to core business opportunities. The measures for the two competitive dimensions of scope were placed on a strategy map (Porter 1987) with the breadth of scope on the horizontal axis and the ratio of noncore versus core businesses on the vertical axis. The cluster groups were then positioned on the strategy map. The taxonomy of corporate strategies was derived from each group's strategic position relative to other groups on the map.

RESULTS

Descriptive Analysis

Table 2 provides the descriptive statistics of the business, external, and performance measures. The business measures include dichotomous variables (e.g., "Own a health plan $Y = 1$, $N = 0$ "), which screen for continuous variables (e.g., "Health plan covered lives"). For the dichotomous variables, "Percentage of Firms" is actually the proportion that has a value of 1 or equivalently, the mean value of the measure. For the continuous variables, "Percentage of Firms" and "Number of Firms" indicate the number for which mean, median, and standard deviation are calculated. The "Mean," "Median," and "SD" report data only for those continuous measures meeting the screening criteria—that is, the descriptive data for "Health plan covered lives" is reported only for those firms that own health plans. The measures indicate the number of firms in each business area varies. For example, 118 firms or 15 percent offer health plans, 344 firms or 43 percent affiliate with external physician groups, and 564 firms or 71 percent provide home health care, suggesting there are differences in the strategic choice of scope among firms. The average profitability "Margin % of revenue" of all firms is 1.4 percent while the 10th percentile is 5.4 percent and 90th percentile is 7.7 percent, demonstrating there is significant heterogeneity in financial performance among firms. Both the variation in profitability and in the types of businesses owned suggest firms follow distinct strategies associated with unique performance outcomes.

Cluster Analysis

The cluster solution produced five mutually exclusive groups: group 1 with 304 firms (42.7 percent of total sample), group 2 with 266 firms (33.4 percent), group 3 with 52 firms (6.5 percent), group 4 with 83 firms (10.4 percent), and group 5 with 55 firms (6.9 percent). The mean values of the clustering scope measures among the five groups were significantly different from each other ($\text{Prob} > F, .001$). Test of reliability indicated there was 90 percent agreement in firm assignment into groups between the k -means and the Ward methods. The split halves analysis divided the 796 firms into two samples of 398 firms and conducted two separate cluster analysis. For both samples, five clusters emerged with similar scope characteristics, suggesting the five-cluster solution is reliable for the larger sample. Figure 2 provides web diagrams for each group, showing the different organizational scope configurations. Each spoke on the diagram indicates the number of firms in the group in the specified business area. For example, group 1 has health plans located in the center,

Table 2: Descriptive Statistics

Total Number of Firms (N) = 796					
Measures	Symbol	Percentage of Firms in Business Area	Number of Firms in Business Area	Number of Firms	
				Mean	SD
<i>Business measures</i>					
Own a health plan: Y = 1, N = 0	hlthpln	15	118		
Health plan covered lives	chlpln	15	118	70,586	106,766
Number of ambulatory care facilities	namblcr	93	740	10	144
Number of outpatient visits	optvst	100	796	222,016	318,862
Affiliate with physician group: Y = 1, N = 0	afphys	43	344		
Number of physician group affiliations	nphysaf	43	344	1.4	0.96
Number of acute care facilities	nactr	100	796	1.6	1.7
Number of acute care staffed beds	sactbd	100	796	314	418
Number of operating rooms	oprms	100	796	12	15
Number of subacute facilities	nsbactc	75	595	1.8	1.4
Number of subacute staffed beds	ssbactc	75	595	117	152
Number of home health care agencies	nhmhlc	71	564	1.6	1.6
Number of other business owned	othrbus	76	604	3.6	4.8
Number of collaborations	clbrltn	76	607	3.2	3.2
<i>External measure</i>					
Date firm was formed	ihdsform			1946	38
% Commercial insurance revenue	ffspy	95	755	16%	11%
% Managed care revenue	mgdcrrp	88	697	20%	16%
% Medicare revenue	mrcrrp	99	785	42%	14%
% Medicaid revenue	mcdcrp	98	784	13%	11%
% Other payers revenue	othrpy	92	729	9%	9%
Size of service area population	srvcpop			665,472	1,236,605

Performance measures					
Number of full-time equivalents	ftes	100	796	1,876	1,024
Annual net revenue	revenue			173,000,000	90,600,000
Annual operating expenses	opscost			171,000,000	89,100,000
Margin % of revenue	margin			1.39	1.48
					2,437
					252,000,000
					251,000,000
					5.41

Figure 2: Organizational Scope Configurations of the Five Cluster Groups

Figure 3: Classification of Groups

indicating that almost no firms in this cluster own health plans, while ambulatory care is almost to the edge of the spoke, indicating almost 90 percent of the firms in this group own ambulatory care businesses. All five groups have different scope configurations, which suggest five different types of corporate strategies are being followed by multibusiness health care firms.

Classification of Groups into Corporate Strategies

The classification procedure discussed in the methodology section was applied to position the five cluster groups on a strategy map. Figure 3 provides a strategic mapping of each group along the two competitive dimensions of scope. The horizontal axis represents breadth of scope and the vertical axis represents the extent to which firms pursue noncore versus core business opportunities. The position of each group along these competitive scope dimensions reveals the taxonomy of corporate strategies. Group 1 named Core Service Provider, on the lower left-hand side, has the smallest scope and pursues few noncore opportunities. Group 2 labeled Contractor has a medium scope and pursues above-average noncore opportunities, primarily in contracting with physician groups. Group 3 called Mission Based has a small scope and the fewest noncore business opportunities, many of the firms in this group provide core set of services to underserved populations. Group 4 named

Health Plan Focus has a large scope and a large number of noncore businesses, especially in the area of health plans. Group 5 labeled Entrepreneur located on the far upper right-hand side has the broadest scope and pursues the highest number of noncore business opportunities.

The labels for the groups were identified by conducting a detailed analysis of each group to determine which areas of scope distinguished each group from the others and would also confer competitive advantage. For example, 94 percent of the firms in the group labeled "Contractors" contract with physician groups, while this statistic for Core Service Providers is 0 percent, for Mission Based it is 38 percent, for Health Plan Focus it is 39 percent, and for Entrepreneur it is 76 percent. Similarly, 90 percent of the firms in the group labeled "Health Plan Focus" provide insurance products such as PPOs and HMOs, while this statistic for Core Service Providers is 2 percent, for Contractors it is 3 percent, for Mission Based it is 8 percent, and for Entrepreneur it is 40 percent. Each group's distinct scope characteristics are discussed in more detail in the strategy and performance section.

Establishing Validity

Establishing criterion-related validity (i.e., cluster's ability to predict important outcomes) of the cluster groups is accomplished through conducting significance tests with external variables theoretically related to the groups, but not used to define them (Ketchen and Shook 1996). Table 3 provides the results. The mean inception date measuring the year firms were founded varies across strategies. Firms in the Entrepreneur strategy with a mean inception date of 1974 are significantly younger than firms in the other groups. Large entrepreneurial-oriented health systems started forming only in the past few decades as a response to managed care and to the increasing competitive environment (Friedman and Goes 2001).

Again as validation, Table 3 shows that mean revenues (\$M), service area population, and managed care reimbursement (percent of revenue) increase with group scope dimensions on Figure 3, with the exception of the Mission Based group. Core Service Provider has the smallest scope and the lowest revenues (\$70M), service area population (270,000), and managed care reimbursement (16 percent). In contrast, Entrepreneur, with the largest scope, also has the highest revenues (\$785 M), service area population (2,119,000), and managed care reimbursement (28 percent). Reimbursement from managed care increases with scope because the larger service area population and number of providers comprising the firm allow firms to diversify the risk of

Table 3: Establish Criterion-Related Validity Using External Variables

External Variables	Core Service Provider	Contractor	Mission Based	Health Plan Focus	Entrepreneur	Between Group Difference (F-Test)	Significant Pairwise Contrasts ($p < .05$)*
Inception date	1945	1942	1933	1950	1974	10.69**	5 > 1, 2, 3, 4
Revenues (\$M)	70	140	166	300	785	207.18**	5 > 1, 2, 3, 4; 4 > 1, 2, 3; 3 > 1; and 2 > 1
Service area population (K)	270	658	780	1,274	2,119	39.10**	5 > 1, 2, 3, 4; 4 > 1, 2; 3 > 1; and 2 > 1
Managed care (%)	16	22	23	23	28	13.15**	5 > 1, 2; 4 > 1; 3 > 1; and 2 > 1
Medicare (%)	46	41	39	34	40	14.87**	1 > 2, 3, 4, 5; and 2 > 4

*Pairwise contrasts are Bonferroni tests.

** $p < .001$.

contracting with highly ill patients (Gaynor and Haas-Wilson 1999). Also prior research has found “hospital involvement in integration (increase in scope) is strongly correlated with higher percentage of managed care revenue” (Gold 1999). On the other hand, Medicare reimbursements decrease with scope up to the Health Plan Focus strategy after which it increases with the Entrepreneur strategy. For the Core Service Provider, Medicare revenues are significantly higher (46 percent) than the other groups. This is to be expected because firms in this group provide a core set of services (i.e., ambulatory care, acute care, and subacute) primarily through community hospitals serving the senior population.

To establish external validity (i.e., how representative the clusters are of the population of interest) of the corporate strategy taxonomy, results were discussed with senior executives and managers of multibusiness firms, industry consultants, and academic scholars. Senior management took a special interest in assisting with naming the corporate strategies to better represent distinct competitive characteristics of their own firms and of their competitors. Specifically, the labels “Core Service Provider” and “Mission Based” came directly from senior management of two firms interviewed for the study who followed these strategies. Strategy scholars also carefully reviewed scope characteristics and suggested the names of Contractors and Entrepreneurs. More importantly, executives with considerable health care experience felt the taxonomy characterized the corporate strategies of actual multibusiness health care firms; they also offered valuable insights on the relationship between strategy and performance discussed in the next section.

STRATEGY AND PERFORMANCE

In relating strategy and financial performance, it is important to control for revenue from different payer sources (i.e., commercial insurance, managed care, Medicare, Medicaid, and all other sources) because these reimbursements directly influence profitability. In the health care industry, commercial insurance is viewed as the most profitable. Medicaid is considered the least profitable and often does not cover its own costs. Managed care and Medicare, although important sources of revenue, break-even, or provide a modest level of profitability. The different payer sources are controlled for by grouping firms into four cells in a 2×2 classification scheme. This grouping simulated four different payer profiles. The four payer profiles and the number of firms in each are the following:

- *Favorable profile* with high commercial insurance (greater than the 50th percentile) and low Medicaid (less than the 50th percentile) reimbursement. Two hundred and nine firms are in this profile.
- *Unfavorable profile* with low commercial insurance (lower than the 50th percentile) and high Medicaid (greater than the 50th percentile) reimbursement. One hundred and eight-seven firms are in this profile.
- Profile with high commercial insurance and high Medicaid reimbursements with 182 firms.
- Profile with low commercial insurance and low Medicaid reimbursements with 218 firms.

Financial performance and percentage of total revenue from the different payer sources were calculated for each of the four profiles. The average profit margin is 2.45 percent for the favorable payer profile, for which 25.3 percent of revenue is from commercial insurance and 6.3 percent of revenue is from Medicaid. In contrast, the average profit margin is 0.36 percent for the unfavorable profile, for which 6.8 percent of revenue is from commercial insurance and 23.3 percent of revenue is from Medicaid. The margins across the two profiles are significantly different ($\text{Prob} > F, .001$).

Table 4 relates the five corporate strategies with financial performance for each of the four payer profiles. No significant difference in the profit margin (percent of revenue) was found among the strategies in the first three payer profiles. However, in the unfavorable profile with low commercial insurance and high Medicaid, a significant difference in financial performance among the strategies was found ($\text{Prob} > F, .05$).

Unfavorable Payer Profile Analysis

A detailed analysis of firms in the unfavorable profile was conducted to determine if differences in strategies with regard to scope influenced financial performance. The ratio of annual operating expenses per FTE was computed to compare across strategies. The analysis revealed the following differences among the strategies:

- Core Service Provider strategy has the second highest margin at 0.87 percent, and the lowest firm wide operating cost per FTE of \$76,400, in comparison with the other strategies ($\text{Prob} > F, .001$). This strategy has the smallest scope and focuses primarily on providing core patient care services in the areas of ambulatory, acute, and subacute

Table 4: Financial Performance of Corporate Strategies across Payer Profiles

<i>Payer Profiles</i>	<i>Core Service Provider</i>	<i>Contractor</i>	<i>Mission Based</i>	<i>Health Plan Focus</i>	<i>Entrepreneur</i>
Favorable profile					
High commercial, low Medicaid ($n = 209$)	2.04% (91)	2.57% (81)	3.13% (11)	3.74% (18)	1.99% (8)
High commercial, high Medicaid ($n = 182$)	1.72% (88)	1.85% (48)	0.86% (12)	1.36% (22)	1.20% (12)
Low commercial, low Medicaid ($n = 218$)	0.98% (89)	1.26% (74)	2.20% (16)	0.59% (18)	0.18% (21)
Unfavorable profile					
Low commercial, high Medicaid ($n = 218$)	0.87% (72)	0.40% (63)	- 4.24% (13)	0.49% (25)	1.60% (14)
Group mean	1.43%	1.56%	0.48%	1.45%	1.03%
Total number of firms	340	266	52	83	55
Range	1.17%	2.17%	7.37%	3.26%	1.81%

Significant difference in performance among strategies in the unfavorable profile ($F = 2.71$, Prob $> F$, .0315).

Significant difference in performance across payer profiles for the Mission Based strategy ($F = 5.14$, Prob $> F$, .0037).

Weak significant difference in performance across payer profiles for the Contractor strategy ($F = 2.18$, Prob $> F$, .09).

with minimal investment in other businesses. In effect, narrow scope and low operating expense per FTE suggest this is a low-cost strategy, allowing it to remain profitable under unfavorable payer conditions. Also, as expected from a low-cost strategy, Core Service Provider has the most stable performance across payer profiles with a range of 1.17 percent between high and low margins.

- Contractor strategy margin is 0.40 percent and operating cost per FTE is \$86,715. Firms belonging to this strategy have medium scope providing core services and engaging in significantly more physician affiliations ($\text{Prob} > F, .001$). This strategy also has the highest average margin (1.56 percent) among all the strategies. The CEO of a health care firm interviewed for the study, who has “bet the farm” on a major venture with a physician group, commented these affiliations yield risk-sharing benefits and referrals to the acute care business.
- Mission Based strategy has the lowest margin (-4.24 percent) and the highest operating cost per FTE (\$108,170). Differences in profitability for this strategy across payer profiles are highly significant ($\text{Prob} > F, .01$), exhibiting a wide range in performance. The 13 firms in this profile provide core services to underserved populations in rural areas and county/city locations or they are facing fierce competition from more powerful firms. Also, Mission Based firms have more subacute care beds, a low-margin business, than the other strategies.
- Health Plan Focus strategy margin is 0.49 percent and its operating expense per FTE is \$100,355. Firms following this strategy provide significantly more health plans in the form of PPOs and HMOs than all the other strategies ($\text{Prob} > F, .001$). Because of the fixed nature of managed care payments, these firms appear to be substituting outpatient ambulatory care in place of the more expensive inpatient acute care. For example, Health Plan Focus firms provided 26,231 outpatient visits per ambulatory care facility, while Core Service Providers had 24,502 outpatient visits per facility, Contractors had 23,771 outpatient visits per facility, and Entrepreneurs provided 22,471 outpatient visits per facility. This “fit” between owning health plans and providing more ambulatory care corroborates prior research, which found that firms with health plans substituted acute care with more ambulatory care (Glied 2000).

- Entrepreneur strategy, surprisingly, has the highest margin of 1.60 percent in the unfavorable payer profile with an operating expense per FTE of \$94,600. Entrepreneur firms have the broadest scope, providing a wide range of patient care services while also owning a variety of related businesses and participating in numerous collaborations. Related businesses include both for-profit and non-profit ventures including laboratories, pharmacies, construction and real estate companies, collection agencies, fitness centers, spas, medical equipment, child day care, adult day care, nursing schools, and the list goes on. When discussing this strategy with senior management, it was found that many of these businesses serve three important purposes. First, the more profitable businesses are used to cross-subsidize the cost of unprofitable patient care services. Second, these businesses can serve as a powerful deterrent or even preempt competition. Third, some of these businesses such as ambulatory care, home health, and subacute serve as referral sources for acute care. Strategy statements of the 14 firms in this group revealed they all have businesses that serve one of these purposes, which could explain their significantly higher profitability in the unfavorable payer profile.

In sum, unique scope characteristics and senior management insights suggest how differences in scope among strategies influence financial performance. With the exception of Mission Based, each group of firms focused on different strategies to remain viable under unfavorable payer conditions: (1) low cost for Core Service Providers, (2) shared risk arrangements with physicians for Contractors, (3) “fit” or consistency in scope for the Health Plan Focus, and (3) cross-subsidization with more profitable businesses for both Health Plan Focus and Entrepreneurs. Mission Based firms, on the other hand, appear to be at a competitive disadvantage. It was found that many of these firms operating with limited funds serve as the only health care service providers to underserved populations in less affluent locations, thereby constraining their ability to cross-subsidize or lower costs.

DISCUSSION

Four significant decisions were made in the process of developing a taxonomy of corporate strategies: (1) defining multibusiness health care firms, (2) select-

ing the two competitive dimensions of scope as the bases for classification, (3) labeling the cluster groups, and (4) relating strategies with financial performance in four different payer profiles. This section discusses the limitations, implications, and future opportunities of these decisions.

First, in order for the taxonomy to capture the essence of multibusiness activity, it is necessary to include firms that have distinct business units with product/market diversity. This was addressed by selecting firms with two or more patient care businesses in the following two or more separate areas: ambulatory care, acute care, and subacute care. That is, a firm could not have just two hospitals and be in the study; it would need a hospital and an ambulatory care or subacute care business. Once this criterion was met, the data included a variety of nonpatient care businesses and external collaboration which allowed for a more comprehensive view of the firm's multibusiness activities. In comparison, the Bazzoli et al. (1999) study selected firms with multibusiness activities in the following areas: hospital services, physician arrangements, and insurance products. The limitation of both studies is that geographic location/dispersion was not included as a criterion for firm selection and large, geographically dispersed firms were excluded. As a result, both taxonomies do not differentiate among firms that compete either locally or regionally. Furthermore, the results of the studies do not generalize to large, nationally based firms which face more strategic and operational complexities with regard to competitive and regulatory environments.

Second, the classification is based on the two competitive dimensions of scope—breadth of businesses and extent to which firms pursue new business opportunities versus efficient exploitation of existing businesses. These dimensions were selected for three reasons: (1) scope expansion has been the primary means health care firms have pursued competitive advantage, (2) the dimensions are theoretically grounded in the strategic management literature, and (3) they have been applied to generate cluster groups at the business strategy level in past studies (Ketchen, Thomas, and Snow 1993). This study applied these dimension at the corporate strategy level and validated the resulting taxonomy. Although steps were taken to minimize the effects of scale, a limitation is the potential confounding of scale and scope. In particular, the concern is the groups can differ due to the firm size or by the sizes of their primary markets. Another limitation noted by health care executives is the five strategies do not represent the full spectrum of competition they face in the industry. In addition to large national multibusiness firms, the taxonomy does not capture competition from niche players such as nursing home chains and outpatient surgery centers.

Third, labeling of clusters groups—Core Service Providers, Contractors, Mission Based, Health Plan Focus, and Entrepreneurs—is based on careful interpretation of the distinctive scope characteristics of the statistical groupings. As discussed in the previous sections, these distinct scope characteristics are theoretically based on the strategic management literature with regard to conferring competitive advantage, and thus are an important aspect of the cluster group's corporate strategy. In comparison, the Bazzoli et al. (1999) study selected the extent of centralization (measured by the percentage of services in a particular service dimension provided at the corporate level rather than by the individual hospitals) as the key distinguishing feature to label the cluster groups of hospital-based systems. Although Bazzoli et al. (1999) found differentiation, akin to scope, important in distinguishing cluster groups this feature was not used in naming the groups. Both studies demonstrate that when labeling cluster groups, not all information about the group can be conveyed.

Fourth, the analysis relating corporate strategies with financial performance reveals that no one strategy dominates in performance across payer profiles. Instead, what is observed is the notion of "fit" where certain strategies are better suited for some payer conditions, and produce good performance, while others do not (Roberts 2004). For example, the Entrepreneur strategy, which cross-subsidizes the cost of care for Medicaid patients through ownership of profitable businesses, exhibits remarkable performance in the toughest payer conditions. Whereas the Mission Based strategy with limited number of other nonpatient care businesses, the highest operating cost per FTE, has the lowest performance of all strategies. In comparison, Bazzoli et al. (2000) also found significant difference in financial performance among their cluster groups. However, in contrast to this study, the Bazzoli et al. analysis found that decentralized networks and systems, with the largest scope (differentiation), had lower performance than the other groups. The difference in findings might be attributed to this study using financial measures at the corporate level of the firm, including nonpatient care businesses and examining the fit of the strategies in different payer profiles. Whereas the Bazzoli et al. (2000) study used financial measures at the hospital level, it did not include other businesses owned by the firm and did not consider the issue of fit between the groups and different payment conditions.

At this preliminary stage, there are significant opportunities for future studies to improve upon the classification of firms. First, the geographic location/dispersion limitation can be addressed either by stratifying the firms as competing locally, regionally, or nationally and applying the cluster analysis

separately to each geographic type or by including it as another dimension among the clustering variables. Second, to support effective management and regulation of these complex organizations, a deeper examination of “fit” among strategy, structure, processes, and environment is essential from future studies. Third, it would be of particular interest to examine and classify the strategic use of for-profit businesses and collaborations by non-profit firms to gain competitive advantage. The contribution of this study to future work is that it extends the competitive dimension of scope from classifying business level strategies and taxonomies of hospital systems to classifying corporate level strategies of multibusiness health care firms; where “the purpose of the classification is to examine how firms compete as a system and not a loose collection of organizations” (Shortell, Morrison, and Friedman 1992).

ACKNOWLEDGMENTS

I would like to thank Robert S. Kaplan, Ph.D., of Harvard Business School and two anonymous reviewers for many useful comments and recommendations. Joseph Newhouse, Ph.D., of Harvard Medical School, Stephen Shortell, Ph.D., of University of California Berkeley, Amy Edmondson of Harvard Business School, Thomas Wan, Ph.D., of University of Central Florida, and Gary Pisano of Harvard Business School also provided helpful comments on an earlier draft of the article. Deborah Strumsky of Harvard Business School provided valuable research support in conducting the statistical analysis. The Harvard Business School doctoral office provided funding for the research including the purchase of the data from HIMSS Analytics™ (HIMSS Analytics Database—derived from the Dorenfest IHDS+ Database™). Also, I gratefully acknowledge the participation of Covenant Health System, Inc. of Lexington, MA and Sisters of Providence Health System in Springfield, MA whose senior management I interviewed for this article.

REFERENCES

- Anand, B. 2005. “Corporate Strategy: Course Note for Instructors.” Harvard Business School Course Overview, 5-704-461.
- Andrews, K. R. 1971. *The Concept of Corporate Strategy*. Homewood: Dow Jones-Irwin.
- Arrow, K. J. 1975. “Vertical Integration and Communication.” *Bell Journal of Economics* 6 (1): 173–83.

- Bazzoli, G. J., B. Chan, S. M. Shortell, and T. D'Aunno. 2000. "The Financial Performance of Hospitals Belonging to Health Networks and Systems." *Inquiry* 37: 234-52.
- Bazzoli, G. J., S. M. Shortell, F. Ciliberto, P. D. Kralovec, and N. L. Dubbs. 2001. "Tracking the Changing Provider Landscape: Implications for Health Policy and Practice." *Health Affairs* 20 (6): 188-96.
- Bazzoli, G. J., S. M. Shortell, N. L. Dubbs, C. Chan, and P. D. Kralovec. 1999. "A Taxonomy of Health Networks and Systems: Bringing Order out of Chaos." *Health Services Research* 33 (6): 1683-717.
- Burns, L. R., and M. V. Pauly. 2002. "Integrated Delivery Networks: A Detour on the Road to Integrated Health Care?" *Health Affairs* 21 (4): 128-39.
- Chandler, A. D. 1990. *Scale and Scope*. Cambridge, MA: Harvard University Press.
- Coase, R. H. 1937. "The Nature of the Firm." *Economica* 4: 386-405.
- Coddington, D. C., F. K. Ackerman, E. A. Fischer, and K. D. Moore. 2000. *The Changing Dynamics of Integrated Health Care*. Englewood, NJ: Medical Group Management Association.
- Collis, D. J., and C. A. Montgomery. 1998. *Corporate Strategy: A Resource-Based Approach*. Boston: Irwin McGraw-Hill.
- Dubbs, N. L., G. J. Bazzoli, S. M. Shortell, and P. D. Kralovec. 2004. "Reexamining Organizational Configurations: An Update, Validation, and Expansion of the Taxonomy of Health Networks and Systems." *Health Services Research* 39 (1): 207-20.
- Ferguson, T. D., and D. H. Ketchen. 1999. "Organizational Configurations and Performance: The Role of Statistical Power in Extant Research." *Strategic Management Journal* 20 (4): 385-95.
- Friedman, L., and J. Goes. 2001. "Why Integrated Health Networks Have Failed, Commentaries and Reply." *Frontiers of Health Services Management* 17 (4): 3-54.
- Gaynor, H., and D. Haas-Wilson. 1999. "Change, Consolidation, and Competition in Health Care Markets." *Journal of Economic Perspectives* 13 (1): 141-64.
- Ghemawat, P. 2003. "Strategy and Scope." Working Paper. Harvard Business School.
- Glied, S. 2000. "Managed Care." In *The Handbook of Health Economics*, edited by A. J. Culyer and J. P. Newhouse, pp. 707-753. Amsterdam: Elsevier.
- Gold, M. 1999. "The Changing US Health Care System: Challenges for Responsible Public Policy." *Milbank Quarterly* 77 (1): 3-37.
- Harrigan, K. R. 2003. *Vertical Integration, Outsourcing, and Corporate Strategy*. Washington, DC: Beard Books.
- Hart, O., and J. Moore. 1990. "Property Rights and the Nature of the Firm." *Journal of Political Economy* 98 (6): 1119-58.
- HIMSS Analytics™. 2006. *HIMSS Analytics Database Derived from the Dorenfest IHDS+ Database™*. Chicago: HIMSS Analytics.
- Holmstrom, B., and J. Roberts. 1998. "The Boundaries of the Firm Revisited." *Journal of Economic Perspectives* 12 (4): 74-94.
- Jensen, M. C., and W. Meckling. 1994. "The Nature of Man." *Journal of Applied Corporate Finance* 7: 4-19.

- Kaplan, R. S., and D. P. Norton. 1996. *The Balanced Scorecard*. Boston: Harvard Business School Press.
- Ketchen, D. J., and C. L. Shook. 1996. "The Application of Cluster Analysis in Strategic Management Research an Analysis and Critique." *Strategic Management Journal* 17: 441-58.
- Ketchen, D. J., J. B. Thomas, and C. C. Snow. 1993. "Organizational Configurations and Performance: A Comparison of Theoretical Approaches." *Academy of Management Journal* 36 (6): 1278-313.
- Luke, R. D., S. L. Walston, and P. M. Plummer. 2004. *HealthCare Strategy in Pursuit of Competitive Advantage*. Chicago: Health Administration Press.
- Marlin, D., J. W. Huonker, and M. Sun. "An Examination of the Relationship between Strategic Group Membership and Hospital Performance." *Health Care Management Review* 27 (4): 18-29.
- Miller, D., P. H. Friesen, and H. Mintzberg. 1984. *Organizations A Quantum View*. Englewood Cliffs, NJ: Prentice Hall Inc.
- Porter, M. 1980. *Competitive Strategy*. New York: The Free Press.
- Roberts, J. 2004. *The Modern Firm*. Oxford: Oxford University Press.
- Robinson, J. 1996. "The Dynamics and Limits of Corporate Growth in Health Care." *Health Affairs* 15 (2): 155-69.
- Rumelt, R. 1974. *Strategy, Structure, and Economic Performance*. Cambridge, MA: Harvard University Press.
- Sharma, S. 1996. *Applied Multivariate Techniques*. New York: John Wiley & Sons Inc.
- Shortell, S. M., R. R. Gillies, and D. A. Anderson. 1994. "The New World of Managed Care: Creating Organized Delivery Systems." *Health Affairs* 13 (5): 46-64.
- Shortell, S. M., R. R. Gillies, D. A. Anderson, K. M. Erickson, and J. B. Mitchell. 2000. *Remaking Health Care in America: The Evolution of Organized Delivery Systems*. San Francisco: Jossey-Bass.
- Shortell, S. M., E. M. Morrison, and B. Friedman. 1992. *Strategic Choices for America's Hospitals*. San Francisco: Jossey-Bass.
- Simons, R. 2005. *Levers of Organization Design*. Boston: Harvard Business School Press.
- StataCorp. 2003. *Stata Cluster Analysis Reference Manual Release 8*. College Station, TX: Stata Corporation Press Publication.
- Williamson, O. E. 1985. *The Economic Institutions of Capitalism*. New York: The Free Press.