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International Strategic Alliances: Identifying Objective Performance Measures

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ABSTRACT

With the acceleration of globalization, International Strategic Alliances (ISA) are increasingly playing a critical role in a firm's strategic arsenal. Despite its importance, measuring an ISA's success is difficult due to the reticence of failing partnerships to announce these issues. This paper presents an analysis of 29 alliances from 18 countries and 5 industries. The success or failure of these alliances was analyzed utilizing ROA, ROE, ROI, and operating margin as the variables of performance measurement. Discriminant Analysis demonstrates that operating margin correctly classifies the success of an alliance 70% of the time.

Keywords: International strategic alliances, performance measures, globalization.

INTRODUCTION

With the acceleration of the globalization phenomena, the critical role of international strategic alliances (ISA) is paramount to a firm's strategic arsenal. The evaluation of an ISA's success is necessary, yet difficult. For example, companies involved in failing relationships are not likely to announce the issues or circumstances regarding their failure. Also, there is a tendency among current studies to measure the success of the alliances subjectively through key informant surveys (Geringer & Hebert, 1989; Cravens, Shipp, & Cravens, 1993; Morgan & Hunt, 1994; Aulakh, Kotabe, & Sahay, 1996). The use of key informant surveys has the limitation of lacking objectivity (Phillips, 1981; Johnson, Sakano, Cote, & Onzo, 1993; Miller, 1993; Makino & Delios, 1996), since most informants tend to focus on the alliance's positive attributes and results; therefore, they are less likely to reveal any negative aspect or result. Accordingly, most explanations for low response rates in these studies are due to companies' reticence to respond when involved in a failing relationship. Given the pervasiveness of strategic alliances (SA) in the competitive environment (Day, 1995), it is important to determine what objective indicators may be used to measure ISA performance.

It may seem reasonable to consider the evaluation of a firm's stock price as valuable measure. Unfortunately, a firm's stock price may be limited and affected by a preponderance of external factors, especially market sentiment and economic cycle. Stock price was not operationalized as a performance measure, because accounting measures better reflect firm performance. Also, it is felt "to measure investors' expectations about future profits" (Grant, Jammine, & Thomas, 1988, p. 781) emphasizing a short-term perspective (Crosby & Johnson, 2003). Stock price is affected by factors beyond the company's control; therefore, it may not be an efficient measure (Sandoval, 2001). Also, currency fluctuations can be an issue, due to the environment that international partnerships operate within. The authors propose that studying internal metrics such as Return on Assets (ROA), Return on Equity (ROE), Return on Investment (ROI), and operating margin will better indicate positive or negative aspects of a relationship based on the improved internal efficiency of the organizations.

To measure firm performance this paper will compare the effect of SAs on the four above-mentioned variables before and after the alliance announcement. The alliances will be international in nature to control for

economic cycles and represent several industries to control for industry effect. The analysis will address the implications of the resulting "best" objective measure of alliance success.

LITERATURE REVIEW

Previous studies have employed varying financial data to measure SA performance. For example, Lewis and Minchev (2001) utilized performance measures to measure diversification. Aulakh et al. (1996) used sales growth and market share to measure relationship performance, but their results were supported irregardless of the quality of the relationship indicating a possible influence from external factors. Cravens et al. (1993) found that ROA was not significantly related to performance, but found it indirectly related to improved profitability through R&D investment. Bleeke and Ernst (1991) found a positive relationship between ISA performance and profitability of the companies that were financially strong prior to the alliance. Booz, Allen, and Hamilton (2001) show that companies in alliances have a 17% increase in ROI. Allen and Philips (2000) report increased stock performance and investment and operating profitability in high tech alliances.

Given that the purpose of companies engaging in ISA's is to find synergies between the partners (Terpstra & Simonin, 1993; Johansson, 1995), evaluating ROA, ROE, ROI, and operating margin would indicate the realization of these synergies. Although other studies have demonstrated the value of these measures, this paper will contribute to the body of knowledge by studying a broader cross-section of industries and organizations.

Strategic Alliances

Organizations create alliances to enhance their business position (Varadarajan & Cunningham, 1995). Cravens et al. (1993) define a SA as "a means for organizations to gain competitive advantage in a product/market when environmental turbulence and diversity are high and the organization's skill and resource gaps are high" (p.55). This paper considers the classification of SAs operationalized to differentiate from joint ventures (JV), since JVs are a creation of a separate, third legal entity. SAs are viewed as long-term collaborations that are considered strategically important to the involved organizations. Alliances may be formed to acquire necessary skills, knowledge, technical capabilities, access to new markets, and to combat the risk of unknown political and social settings (Cravens et al., 1993; Johansson, 1995). Johansson (1995) proposes that alliances are formed, because few organizations hold all the necessary resources to compete in a global economy. Furthermore, firms should not shun collaboration with the, competition, because of the synergy that results from such relationships (Terpstra & Simonin, 1993; Johansson, 1995). Cravens et al. (1993) present the void in literature of a definitive disagreement as to what an effective alliance is and call for "additional work …to define relevant constructs, variables, and structural relationships" in order to clarify what constitutes an effective alliance (p.67). Measures of the alliance will consider the alliance as a separate unit, therefore, allowing an evaluation of the relationship itself.

Performance Measures

Previous studies evaluated firm effectiveness by employing various measures as indicators of success (Lei, Capon, Hulbert, & Farley, 1994; Davis & Pett, 2002). Although Cravens et al. (1993) found an indirect relationship between alliance effectiveness and organizational performance, it is logical to consider the effectiveness of alliances on organizational performance. It is essential to measure performance, yet there are conflicting views and modes of performance evaluation (Dubofsky & Varadarajan, 1987; Ramanujam & Varadarajan, 1989). The finance and strategic management disciplines differ in opinion as to which measure to employ when evaluating performance. A stream of strategic management literature discusses utilizing market-based performance criteria for evaluation (Woo, 1984; Galbraith, Samuelson, Stiles, & Merrill, 1986; Dubofsky & Varadarajan, 1987). However, market-based measures reflect market perception of future earnings, and accounting measures report historical financial data. It is expected that "the two measures… move in the same direction" (Dubofsky & Varadarajan, 1987, p. 606). Also, accounting data is a frequently employed to measure of performance (Dubofsky & Varadarajan, 1987; Ramanujam & Varadarajan, 1989; Sandoval, 2001). Ramanujam and Varadarajan (1989) conclude by presenting the argument "that decisions regarding diversification are made by managers using profitability data derived from financial

statements and, hence, it would be more appropriate to use accounting-based measures to assess the efficacy of diversification efforts" (p. 540).

Firm performance will be measured by the following internal metrics: ROA, ROE, ROI, and operating margin. ROA is an established measure of performance (Bettis & Hall, 1982; Grant et al., 1988; Lei et al., 1994; Davis & Pett, 2002). The use of ROA is an important measure of firm performance and is often employed by managers and external analysts to assess firm effectiveness and efficiency (Bettis & Hall, 1982; Grant et al., 1988). Further ROA was found to better mirror a return that is under the control of management (Bettis & Hall, 1982). Davis and Pett (2002) attempted to measure organizational effectiveness and efficiency and incorporated ROA in their measure of firm efficiency. Stock price was not employed, because "firm performance is more directly reflected in accounting profit than in stock price, which measure investors' expectations about future profits" (Grant et al., 1988, p. 781). Crosby and Johnson (2003) argue that overwhelming attention to stock price guides firms to focus on the short-term horizon. Also, stock price can be affected by factors outside of management's control; therefore, it is not an efficient measure of performance (Sandoval, 2001).

Grant et al. (1988) include ROE as a measure of profitability. Law, Tse, and, Zhou (2003) employed ROE as an indicator of firm performance in their study of how to improve Chinese firm performance during transitional economies. Kumar and Petersen (2004) suggest that "optimum levels of ROI and profitability are close in relationship to each other" (p. 34). ROI was employed as a measure of financial performance of 48 United Kingdom companies in relation to their growth and diversification (Grinyer, Yasai-Ardekani, & Al-Bazzaz, 1980). Sandoval (2001) used operating margin as a performance indicator of "operative and administrative efficiencies that management of Chilean power firms" control (p.113). This study also suggested that lower operating margin indicated a relative lack of efficiency. Chen and Wong (2004) include operating margin in their attempt to classify the financial status of insurance companies. The results of their study indicate that insurance companies in three of the four countries included operating margin was an indicator of financial health. Kramer (1996) suggested a positive relationship between financial solidity and operating margin, therefore, negatively related to insolvency.

HYPOTHESES

To answer the research questions; "What objective financial measures exist that can help identify the success or failure of an ISA?", and subsequently, "How accurate are these identifiers?", the following research hypothesis will be tested.

Hypothesis 1: There will be a statistically significant change in the trend line of positive relationship between ISA success and improvement in efficiency (as measured by ROA, ROE, ROI, and operating margins).

Hypothesis 2: There will be a positive relationship between decreasing efficiency and announcement of the ISA dissolution.

METHODOLOGY

The RDS Business and Industry database (Database of Business newspaper, journals, magazines, and other business publications) was searched using the date range of 1999 and the keyword "alliance". Previous studies analyzed alliances formed during one year (Sengupta & Perry, 1997), while other studies evaluating company performance based their results on a period of several years (Bettis & Hall, 1982; Dubofsky & Varadarajan, 1987; Grant et al., 1988; Terpstra & Simonin, 1993; Lei et al., 1994; Johnson & Soenen, 2003). The industries selected were Automotive, Banking, Business Services, Computer, and Pharmacy, because they represent major industries and provided the greatest selection of alliances. The press releases were filtered to include only those between companies headquartered in different countries. Alliances were further filtered to remove simple cross-marketing alliances or licensing agreements as these do not represent alliances of core competencies. The year 1999 was selected because it allows review of the annual reports three years prior to and post of the alliance formation. Also, alliances were filtered to remove JVs as defined by Cravens et al. (1993) definition of SAs, because they require the creation of a third entity. This definition simplifies the information gathering process, since finding the third entities

financial data would be difficult and would confound the results of the parent companies. The limitation of this definition is that it excludes China from the analysis, because the formation of JVs was required during this time period. The financial statements regarding the efficiency measures three years prior to and three years subsequent of the alliance agreement were analyzed. This timeframe allows enough time for the implementation of the ISA agreement to be reflected in the financial statements. The analysis of multiple companies in multiple industries will assist in controlling for external market factors that would impact the changes in operational efficiency. The final results were controlled against industry and headquarter country. The net difference will then offer an objective view of the success of the ISA. To determine ISA failure the same database was searched during the years 2000 through 2002 to determine if alliances were terminated.

The data for a seven year period 1996-2002 was downloaded from Mergent Online into an Excel database for a total of 58 cases. With this data a slope of the line before and after the merger was created by finding the average of the data's change over the time period. This was then coded as either an improved slope after the announcement (2) or a declining slope (1) indicating decreasing performance after the alliance formation. To determine the nature of the relationship after the initial announcement the RDS database was once again searched by each company for any announcements regarding the relationship. In the cases where increased commitment by the parties towards the alliance was announced the company's success was coded as Success 2. When dissolution or a decrease in commitment or other negative statements were mentioned this was coded as a failure (Success 0). If neither failure nor success were reported this was recorded as 1 (Success 1).

RESULTS

Discriminant Analysis was performed using SPSS (Information regarding statistical analysis available upon request). When the initial three codes were used between 49 -51% of the performance measures were correctly classified. Although better than chance, this classification did not make a convincing argument for discriminate purposes. The success was then recoded to show that either the alliance was successful (recode 2) or it was reasoned that though an alliance may not be dissolved it may not be a success due to the fact that it was not expanded; therefore, failure and neither were recoded together. Recoding under this premise markedly changed the results. This led to operating margin being correctly identified 69.2% of the time with a p.004. It is noted that under the previous code system, operating margin was the variable with best discrimant ability and the greatest significance. The Discriminant Analysis was run with all items entered and operating margin was the only item determined to have discriminant ability. Box's M was significant, signifying that the variables are different (Huberty, 1994).

Canonical Analysis was performed with all variables in a hierarchical fashion. This method correctly identified 73% of the cases with operating margin having the highest canonical discriminant function of .438.

Press Q statistic for validation = 8.3448 compared to chi square with 1 df at 99.5%. Confidence Interval (Hair, Anderson, Tatham, & Black, 1998) p. is less than .005 signifying discriminant validity and that the results are greater than what would be achieved by chance.

To account for industry effects, ANOVA was run on each variable with industry as the fixed factor and success as the dependent variable. Again operating margin emerged as the most valid determinant with an adjusted R^2 of .440.

Factor Analysis was run with success as the selection variable and all of the performance measures were entered. This combination of measures was able to explain 71% of the variance on success and 67% of the failures. This result signifies that using operating margin alone is a more parsimonious measure with little loss in explanatory power.

DISCUSSION

Both hypotheses are supported as successful announcements correlate to improving ratios after the alliance formation and the lack of announcements of continued alliance success correlates to worsening ratios. All of the

measures did have a positive relationship with announced success; however, operating margin had the greatest impact and statistical significance. This supports the primary theories behind why companies enter into alliances, namely creating synergies by matching core competencies leads to greater internal efficiencies. By studying only international alliances (from 18 different countries) assisted in controlling for country effects and after controlling for industry effects, operating margin once again emerged as the appropriate measure confirming its robustness as a performance measure. Granted, a 69% hit ratio is not perfect, and this is not the ultimate measure of success, but this does add value to the debate of which is the best measure of success. This knowledge should aid research that involves subjective surveys from key informants to allow an objective measure to inform their results. Interestingly, the pharmaceutical and business services alliances were generally positive whereas the automotive and banking and computer alliances industries were negative (see Table 1).

Table 1
Company Success Classification

Industry	Failure	Success	Total
Auto	8	4	12
Pharmaceuticals	2	8	10
Banking	14		14
Computer	10	6	16
Business services		6	6
Total	34	24	58

LIMITATIONS

This analysis was limited by the number of meaningful alliances with complete data. Of the original 100 companies selected, only 58 had complete data on at least two of the variables. Future research may expand the number of years studied or broader the types of industries selected. This study is not exhaustive and is limited by the availability of information due to the secondary nature of the source information.

FUTURE RESEARCH

Future studies may combine sales and financial information as well as accounting data to create a model of multiple factors that may have improved predictive validity. In this paper we did not include financial or sales information due to the environmental influences on these data; we chose the internal factors that are most closely attributable to the alliance.

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NOTES