Management Controls in Sino-American Joint Ventures: A Comparative Case Study

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Abstract

Research on the relationship between management controls and joint venture performance offers conflicting results. Through detailed case analyses of four Sino-American joint ventures, we examine three factors posited to affect control system design and performance. These include: (1) the degree of complementarity between the partners' strategic objectives; (2) the transaction costs specific to each venture's mode of governance; and (3) the degree of partner cultural fit. Based upon our case findings, we propose an empirically testable model of joint venture characteristics, control and performance.

Introduction

International joint ventures are a rapidly growing organizational form that has received increasing research interest. Despite this attention, academic understanding of joint ventures remains limited. The factors predictive of joint venture performance remain unclear (Geringer and Hebert 1991; Parkhe 1993). Previous work has reported high failure and instability rates among joint ventures (Levine and Byrne 1986; Harrigan 1986; Kogut 1989). Research findings on the relationship between management controls and performance also offer conflicting results (see Geringer and Hebert 1989 for a review).

Recent research in joint ventures (Beamish 1993; Child 1991; Pearson 1991) has focused on the Peoples' Republic of China, one of the world's fastest growing economies. China, whose G.N.P. growth has averaged 12.5% annually since 1992, is projected to be the world's largest economy by 2020. Growth in foreign investment in China has been equally dramatic. During the 1990-1995 period, several hundred thousand foreign companies started up joint ventures in China, the preferred governance mechanism of the Chinese government. A recently published report on Chinese joint venture performance (Andersen Consulting 1995) is consistent with the academic literature findings of mixed joint venture success. The majority of these investments, ranging from $1-40 million, anticipated an average payback period of five to seven years. Yet among the surveyed companies, only 44% reported meeting the targeted profits.

Given the generally unimpressive performance of joint ventures in general and Chinese joint ventures in particular, the question naturally asises as to why so many ventures under perform management expectations. This study directly addresses this issue through comparative case analyses of several Chinese joint ventures. In particular, we posit that: (1) the degree of complementarity between the partners' strategic objectives; (2) the transaction costs specific to each venture's mode of governance; and (3) the degree of partner cultural fit together are jointly mediated by the

management control system of the venture in determining performance. The study proceeds as follows. We first develop the theoretical underpinnings of our case analyses by reviewing empirical and theoretical work related to multinational joint venture management. We then describe, through repeated observations across a sample of Sino -American joint ventures, how firm behavior does and does not fit the theoretical expectations of our conceptual model. Finally, implications for future empirical work are discussed.

Theoretical Development

Strategic Objectives

A fundamental question involving joint venture performance is whether a lack of symmetry between the objectives of the foreign partner and the local partner exists and if so, whether it can be mitigated by the management control system. Exploratory theoretical research on Chinese joint venture partners (Shenkar 1990;Yan and Gray 1994), suggests differences in each partner's strategic objectives. As a developing country, China is particularly interested in obtaining the most current technology in order to further its economic development. This may conflict with the foreign partner's desire to control the proprietary nature of its recent patents, processes and technology, which the Chinese partner might appropriate for its own purposes, outside of the joint venture relationship.

Another strategic objective of the Chinese partner is to export the product or service of the joint venture in order to obtain needed foreign exchange. This objective may conflict with the foreign partner's own export strategy or the desire to focus on the domestic market. The foreign partner might also consider the quality of the local product inferior to international standards. The Chinese partner may also seek to reduce importation of property, plant and equipment or raw materials for the venture, in an effort to increase local value added content. Conversely, the U.S. partner may view these imports as essential to improving productivity and quality. Frequently, as part of the venture agreement, the state controlled Chinese partner has a vested interest in ensuring the employment of its pre-joint venture labor force. This may conflict with the efficiency and profitability objectives of the enterprise. The Chinese partner is usually also very interested in learning new production and management practices from its partner and in minimizing high local expatriate expenses. The foreign investor who does not fully trust the managerial capabilities of his partner may he reluctant to relinquish this control.

Financing of the venture is another potential source of conflict. Relative to the foreign partner, the Chinese partner often has limited access to additional equity funds. As the majority of joint ventures are not publicly listed, this means that funds for expansion must come from retained earnings. While the foreign partner is often prepared to re-invest earnings for future growth, the local partner may be more interested in obtaining dividend payments, limiting future growth opportunities.

The foreign partner's strategic objectives may conflict with the local partner's objectives as well. Usually, the foreign partner is primarily interested in increasing market share, if necessary, at the expense of short term profitability. This may conflict

with the financial objectives of the Chinese partner. The foreign partner is also interested in obtaining inexpensive and productive local labor. The joint venture may inherit less skilled workers from the Chinese side than those available in the labor market. This may result in engaging an excessive amount of labor relative to that required for the production process. The foreign partner may not be interested in sharing its latest technology, fearing appropriation of its technology. Instead, it may transfer outmoded technology to the local market, rationalizing that the market is unprepared, both technically and financially, for adoption of leading edge technology.

In a well structured relationship, the objectives of both parties are relatively complementary and are incorporated into the long term planning of the management control system. The partners trade off their strategic objectives in a mutually satisfactory bilateral bargain that maximizes the overall utility of the venture. This will have a positive impact upon the venture's performance. Over time, these priorities must be revised and included in the venture's strategic planning. When the partners' objectives are not complementary, a joint venture is less likely to succeed. The different financial and social utility functions of the partners, non truthful revelation of strategic objectives, and bargaining inefficiencies preclude equilibrium bargaining solutions and optimal economic performance for the venture. In our case analyses, we examine the effect of the complementarity of the partners' strategic objectives upon the control mechanisms of the venture and its performance.

Transaction Costs

A transaction cost explanation of joint venture behavior seeks to explain how a firm delineates its organizational boundaries with other firms. Williamson (1981) proposes that firms seek to minimize the sum of production and transaction costs. Production costs may differ between firms due to economies of scale, skill or scope. Firms agree to joint venture because the production cost of each partner alone is higher than that of the venture. Transaction costs refer to expenses of writing and enforcing contracts. Transaction costs increase as asset specificity increases, that is as the degree of physical asset and knowledge uniqueness of the relationship increases. In the case of joint ventures, asset specificity is high. Two parties claim ownership to the residual value and rights of the joint assets.

Two theoretical studies (Kogut 1988; Anderson and Gatignon 1986) originally proposed specific propositions related to asset specific transaction costs within joint ventures. To date, no empirical studies of joint ventures appear to have examined these propositions. Specifically, Anderson and Gatignon (1986) suggest that highly proprietary production processes originating from the joint venture, such as research and development (i.e. "highly asset specific"), demand greater managerial control. This control could be realized through withholding of sensitive data. Experience in prior joint ventures is also speculated to decrease asset specificity management problems, as learning methods of technological transfer improves over time. The less routinized and structured the process or product development, the more difficult the control issue surrounding the management of the process over time. As product life cycle increases, less formal management controls should be required.

In addition to asset specificity, Williamson (1981) proposed that environmental uncertainty increases transaction costs. Joint ventures are designed to reduce supplier contractual risks such as improper provision of market information and technology and poor production efficiency and quality. Joint ventures address these issues by creating a monitoring mechanism superior to that of a simple relational contract. Through equity ownership, a joint venture theoretically aligns incentives between partners so that information is revealed, technology is shared and performance is improved. Administrative controls and rules are designed to guarantee the rights of both parties. However, when externalities exist, one partner may defect from the agreement, a moral hazard problem. Also, prior to entering into the agreement, one party may misrepresent relational assets such as skills, the value of physical assets or political connections. These are problems of adverse selection.

The management control system of the joint venture must be capable of mitigating these uncertainty costs through audits and control safeguards. Controls should become more formalized as uncertainty increases. Internal behavioral uncertainty associated with partner adverse selection, perquisite consumption and shifting behavior may be mitigated by stronger incentives and control system monitoring. Our case analysis examines the linkage between transaction costs, the design of the management controls and joint venture performance.

Cultural Fit

A growing body of research has been directed at understanding the relationship between national culture and the design of management controls. To date, no studies appear to have examined these issues within the context of management controls in international joint ventures. In the absence of a formal model of cultural differences between joint venture partners, models of management control systems are potentially mis-specified. Hofstede (1980) describes several elements of culture which might affect management practices. Three of these, power distance, uncertainty avoidance and individualism appear to differ between Chinese and American managers.

Hofstede (1980) found that U.S. managers scored low on power distance relative to an international cross-section of managers. Decision making and budgeting is seen as participatory among American managers, with an emphasis on decentralization and lateral managerial reporting systems. Chinese superior-subordinate manager relations emphasize vertical hierarchy, centralization and close supervision. Hierarchy, with its differences in power and status is ingrained in Chinese society. Chalos et al. (1997) found that Chinese managers score very high on power distance (93) relative to U.S. managers (40).

American and Chinese cultures also differ in terms of uncertainty avoidance. Hofstede (1980) found U.S. managers to be low in uncertainty avoidance (46). In contrast, Chinese managers score much higher (73) in uncertainty avoidance (Baird et al 1990). This has implications for the incentive systems used by joint ventures. American budgeting systems are more inclined to reward individual performance that exceeds pre-specified targets. Chinese managers are more accustomed to fixed pay schemes and environmental controllability filters. Hofstede (1980) found that in high uncertainty avoidance countries, incentives are more seniority based, standard oper-

ating procedures are more specifically delineated and loyalty is more highly valued. In low uncertainty countries, there is more emphasis on risk taking, conflict, competition and delegation.

Finally, as would be expected, the American managers scored highest on individuality (91) relative to the international mean (50). The Chinese managers scored extremely low on this dimension (9) (Chalos et al. 1997). The implications for the management control system are that U.S. managers prefer individual rewards, relative performance evaluation and decentralized responsibility accounting. Chinese managers favor team incentives and absolute performance standards.

Results of studies of the effect of cultural preferences on management controls are decidedly mixed. Several studies found no significant cultural differences in the preference for management controls (Merchant et al 1995; Chow et al. 1994; Chow et al 1991; Frucot and Shearon 1991). Other studies report significant interactions between cultural dimensions and management controls (O'Connor 1995; Lau et al 1995; Harrison et al. 1994; Harrison et al. 1993). We examine the proposition that significant differences between American and Chinese joint venture partners along cultural dimensions of power distance, uncertainty avoidance and individualism affect the management control system and performance of the venture. Cultural differences between American and Chinese managers suggest two possibilities. The first is that the joint venture may accommodate its management control system to local Chinese culture. Alternatively, the dominant equity partner (typically the U.S.) may simply design the management control system to reflect its own cultural predispositions.

Management Controls

Management control is the process by which an organization influences its members to behave in ways that lead to the attainment of organizational objectives (Flamholtz et al. 1985; Ouchi 1977). Control in joint ventures is more problematic because two partners influence the design of the control system. A review of the literature on controls in international joint ventures reveals a lack of consensus on the definition and measurement of international joint venture control. Schaan (1983) broadly defines parent control as the process by which each parent company ensures that the venture is managed to conform to its own interests. Ownership is frequently advanced as an indicator of management control (Blodgett 1991). Geringer and Hebert (1989) provide a more complete definition of control in joint ventures. Management control is defined as (I) the scope of activities over which the parent exercises control; (2) the degree of control exercised by the parent organization; and (3) the mechanisms used by the parent to exercise control. Unanswered in this definition is precisely which activities to measure, specifically how they should be measured and the extent of the measurement.

In the spirit of organizational approaches to control (Eisenhardt 1985; Ouchi 1977), we distinguish between outcome controls and behavioral controls. Traditional outcome controls are used to measure managerial performance when managerial effort can be measured independently of task and environmental uncertainty. Typical joint venture financial outcome controls include payback period, cash flow return on

investment numbers, budgetary goals, standard costs, non financial performance metrics, inter-firm transfer pricing, and royalty payments.

Behavioral controls are frequently used in conjunction with outcome controls. They are most appropriate when performance outcomes are difficult to measure because of the complex interrelationship between the environment, the task and managerial effort. In this case, the control system seeks to influence behavior through the design of the reporting system, and informal feedback and incentive schemes. Research suggests that formal and informal behavioral controls are used in joint ventures (Ding 1997). These include, but are not limited to, the equity ownership of each partner, the composition of the Board of Directors, the number of expatriate appointments, standard operating procedures, the degree of decentralization, budgetary participation, the frequency of head office visits to the venture, bonus incentives and informal feedback mechanisms.

In our case analyses, we examined a range of outcome and behavioral controls. We anticipated that joint ventures would employ different combinations of these managerial controls as suited to their unique strategic objectives, transaction costs and cultural differences.

Performance

Operationalization of joint venture performance is a controversial topic. Traditional measures of financial success such as profitability, sales growth, and cost control must be interpreted in light of the age of the venture. A new venture, as is typical of many Chinese ventures, may not be profitable for several years. In such cases, budgeted to actual discounted cash flow projections may provide a more realistic measure of performance. Even these measures however must be interpreted with caution. Royalty payments to the parent, inter-firm transfer pricing and profit shifting for tax purposes may cloud the true profitability picture. As a result, joint venture research frequently relies on subjective perceptions of joint venture success by the managing partner (Beamish 1985; Killing 1983).

Studies of the relationship between management controls and joint venture performance typically define percentage of equity ownership as a measure of control. These studies report mixed results. Some found a positive relationship between equity ownership and performance (Lecraw 1984; Killing 1983); others found no relationship (Kogut 1988; Janger 1980). The literature is silent with respect to managerial outcome and behavioral controls and their relationship to joint venture characteristics and performance.

Methods

Case Selection and Data Collection

Researchers have called for rigorous case studies of international joint ventures (Parkhe 1993; Parkhe and Shin 1991). In this study, we conducted detailed case analyses of four Sino-American joint ventures, two in Shanghai and two in Beijing. Initially, we visited four joint ventures, Amoco, American Can, Baxter and Caterpil-

lar, administratively based in Hong Kong with manufacturing operations in the mainland. In addition, we visited two accounting firms, Arthur Andersen and Grant Thornton, and the trade office of the State of Illinois. We also spoke at length with a Shanghai based management professor with extensive Sino-American joint venture experience in the management control area. These preliminary visits were deemed essential for pre-testing and broadening our conceptual understanding of Sino-American joint venture management, in anticipation of our actual site visits to Shanghai and Beijing.

Results of our initial interviews confirmed that the complementarity of the partner objectives, joint venture transaction costs and cultural fit of the partners were all extremely important issues in the design of the management control system and ultimate performance of the joint venture. This initial feedback was essential in clarifying our understanding of the specific issues and processes within each of these areas. Table 1 summarizes the major characteristics of the four mainland joint ventures that we studied. We considered several factors in selecting these firms. First, we limited our study to manufacturing ventures in order to control for extraneous variation (Eisenhardt 1989) between service and manufacturing sectors (Chowdhury 1988). Second, the chosen ventures were considered to be very representative of U.S. - Chinese joint ventures operating in a cross-section of industrial sectors. The chosen sectors represented over fifty percent of all U.S. Chinese joint venture manufacturing output. A third factor was that the joint venture had been in operation several years so that performance data was available. A final consideration was access to archival firm data, as well as key personnel within each joint venture.

We collected data from both interviews and archives. We also toured manufacturing plants. To ensure reliability, interviews were conducted with all of the study's co-authors present. Both U.S. and Chinese managers (through an interpreter) were interviewed following a pre-determined interview protocol. Primary personnel interviewed included the managing partners, the production head and the finance manager. Second source interviews were conducted with operational personnel in efforts to either corroborate or refute preliminary interview data. To ensure the accuracy of the data, we conducted numerous checks (Lincoln and Gruba 1985) by which the original interviewees verified our transcribed interview notes. Archival data furnished by the ventures included organizational charts, standard operating procedures, financial statements, internal budgets, production reports and cash flow statements.

Case Analysis

The method adopted in analysing the cases was analytic induction (Glaser and Strauss 1967), a method of refining existing theory by comparing it to instances or typical cases. Data from different sources were coded using content analytic procedures (Strauss 1987; Lincoln and Guba 1985). We first coded all data into categories according to the theoretical component of our proposed model (Yin 1989). These model components were based , as discussed, on extensive reviews of the literature, our initial pilot site visits and discussions with accounting partners and commercial attaches.

Second, within each category, we corroborated initial interview data coding with secondary personnel and archival data where appropriate. If data was inconsistent, it was excluded from the analysis. This data triangulation across different data sources revealed a generally high level of consistency. Third, given that all co-authors were present in all interviews, each co-author independently coded his interview data. Codings were then compared ex post, indicating generally high inter - rater reliability. In cases where raters disagreed, codings were revised subsequent to additional discussion and note comparisons.

Results

Strategic Objectives

Table 2 summarizes the principals' strategic objectives and assesses their degree of complementarity. With the exception of Ford-Shanghai Glass, the transfer of U.S. technology to the local partner was smooth. Generally, it was felt that Chinese patent laws were weak and not rigidly enforced. As a result, in the case of Mundipharma and A.T.&T., pharmaceutical and technological patents respectively were closely safeguarded by withholding key elements of the production process.

For the other firms, Borg-Warner Gear and Ford-Shanghai Glass, the technological transfer was second generation. This was acceptable to the Chinese partner at Borg-Warner Gear, as the partner realized that the local consumer and raw material supplier markets were not prepared, either technologically or financially, for adoption of the latest vehicle transmission technology. In contrast, the local partner at Ford-Shanghai Glass appeared to resent the transferral of outdated technology. Although in all the ventures studied, the U.S. partner controlled the technology, this was not necessarily reflected by a majority equity ownership in the venture (see Table 1). Rather, the management control system incorporated the technological transfer through royalty transfer payments to the U.S. parent. These payments varied from fixed fees to between 1-7 % of sales. These payments were part of the profitability projections of the venture.

Frequently, the state controlled Chinese partner was interested in the joint venture as a means of decreasing imports and increasing exports of the product in question, while the U.S. partner was primarily interested in developing the local market. While these objectives were potentially complementary, they implied that Chinese production of the product be equal or superior in quality and cost to foreign competition. For example, the Chinese partner at A.T.&T. was interested in decreasing the importation of fiber optic cable needed for the domestic telephone industry. The performance standards and standard costs of the venture tightly controlled these desired outcomes. Likewise, at Mundipharma, high quality controls existed to ensure the international standards of the product. Although two joint ventures, Mundipharma and A.T. & T., were partially successful in decreasing foreign importation of the locally made product, none had achieved the export objective of the Chinese partner. Ford-Shanghai Glass was attempting to be a supplier of glass to Ford Australia, but its productivity reports of scrap, quality and downtime indicated that this was not yet realizable. Similarly, Borg-Warner Gear restricted its sales to the local market because of quality considerations.

Labor productivity was a sore point for several of the ventures. In three of the four ventures, Borg-Warner Gear, Mundipharma and Ford-Shanghai Glass, the joint venture "inherited" the Chinese partner's labor force from its pre-existing state enterprise. These employees could not be summarily dismissed. For example, 90 % of Borg-Warner Gear's employees were inherited from Beijing Gear. Management estimated that 600 U.S. workers could do the work of its existing 1500 direct labor workforce. Recently, the union had agreed to layoff 20 % of its workers, decreasing its workforce to 1200. The firm had yet to report any profit. In contrast, A.T. & T. inherited no state workers. Its management control system used tight behavioral controls, including training, head office visits and standard operating procedures to socialize its younger, more receptive workers. It reported high satisfaction with its labor productivity.

The transferral of management and production skills was a priority for both partners. The Chinese partner was anxious to learn Western management practices, while the foreign partner was motivated to decrease expensive expatriate management of the venture. Behavioral controls reflected these objectives. For example, in all cases, the composition of the Board of Directors reflected the percentage of equity ownership of the partners in the venture. Also, in all firms, the acting general manager of the venture reporting to the Board was American and the "silent" deputy manager was Chinese. The latter was typically viewed as more of a monitoring mechanism for the Chinese partner. With one exception, Mundipharma, production and financial accounting managers were American and the remainder of the personnel were Chinese. Several of the ventures complained that the demand for skilled managers in all areas and levels of management exceeded the supply. Although the foreign partners at all ventures initiated local training programs for staff, and head office visits for select personnel, both sides were frequently dissatisfied with the slow transferral of skills and organizational learning.

Raw material sourcing was uniformly a point of misunderstanding between the partners. The Chinese partner preferred local sourcing in order to decrease raw material imports and preserve foreign exchange. The Chinese government, at its discretion, could impose duties on raw material and property, plant and equipment imports in order to discourage imports. The foreign partner often preferred external sourcing because of quality considerations and because of the ability to repatriate profit to the home office through inter-firm purchases. Borg-Warner Gear, for example, found local raw material quality to be weak and preferred purchasing its components abroad, but given its loss position, it found foreign funds difficult to obtain.

Likewise, Mundipharma International was the preferred provider of raw material to the joint venture, as long as its prices were competitive in the market. Lucent, Atlanta, an A.T.&T. spin-off, supplied raw material to A.T.&T. China. While contractual controls existed to mitigate sourcing differences between the partners, unpredictable government policy made such planning difficult.

Financing of the venture was generally not a problem. The Chinese partner invariably contributed the property, plant and equipment and land, while the U.S. partner contributed technology and capital. When operations were profitable, divi-

dends were remitted to the U.S. parent, and on the Chinese side, to the state. In one instance, a firm complained that because of governmental bureaucracy, the Chinese side "held up" the need for additional financing required to expand the venture.

For the firms studied, joint venture performance appeared to be related to the complementarity of the partners' strategic objectives, mediated by the management control system. The most successful joint venture in our sample, A.T.&T., had very strong complementarity between the objectives of the two partners. As indicated in Table 2, the other less successful firms, had numerous adversarial strategic objectives between the partners. As shown in Table 3, our analysis indicated certain differences in formal outcome controls. With the exception of A.T.&T., the joint ventures generally had weak standard cost and control measures and few productivity benchmark metrics. Controls did exist for inter-firm transfer pricing, royalty payments and estimated payback periods but many of the projected discounted cash expectations were below budget. Subtle differences appeared also to exist in their behavioral controls. At A.T.&T., equity ownership was higher, skill transferral to employees more effective, standard operating procedures more rigidly enforced, more formal benchmarking against the U.S. plant, real time financial links with the head office, greater decentralization; and more assumption of responsibility by employees. At the other firms, to varying degrees behavioral controls seemed to be less effective in reconciling the conflicting strategic objectives of the partners. There was less trust between partners and less responsibility and performance accountability, in short more of a view of the venture as a zero sum game between the partners.

Transaction Costs

Transaction cost theory speculates that external firm transactions undertaken for economic purposes incur unique costs. The framework of transaction costs provides a useful vantage point for understanding the bargaining and administrative costs specific to joint venture management. First, the specific assets that each partner brings to the venture require a full disclosure valuation audit. The provider of the physical assets, typically the Chinese partner, may inflate the value of the assets, resulting in subsequent asset re-evaluation. Similarly, the technology provider, typically the U.S. parent, may do the same. For our sample of firms, this appeared to be a problem only at Ford-Shanghai Glass, where both partners appeared to be dissatisfied with the specific asset disclosures pertaining to asset values, technology and political connections. Proprietary patents and processes are also subject to appropriation by one of the partners for external gain. For the pharmaceutical firm, Mundipharma, appropriation of its patent was a concern. Strong internal controls were instituted in order to ensure their protection from possible use outside of the joint venture relationship.

Internal and external uncertainty costs are another component of the transaction cost paradigm. In a joint venture, high uncertainty exists with respect to adverse partner selection. Partners may misrepresent their skills, political contacts or knowledge. Generally, the more competitive the partner market, the lower the adverse selection risk. Two firms, Borg -Warner Gear and Ford Shanghai Glass, complained of partner misrepresentation of capabilities. This problem arose largely because both firms "inherited" Chinese production workers, many of whom were unskilled , relied upon seniority rather than merit, and generally exhibited much greater shirking and

risk aversion than younger workers, not products of the state owned enterprise system. This behavior extended to limiting information sharing and responsibility avoidance at the majority of the firms interviewed. These problems were generally least severe at A.T.&T., which had hired all of its labor force. Environmental uncertainty was also unique in some respects to the joint ventures studied, as the ventures operated under political dispensations which could be revoked at any time. For example, two firms, A.T. &T. and Ford Shanghai Glass, expressed concern about changing import duties on raw material.

The complementarity of the partners' strategic objectives (Table 2) clearly affected the transaction costs incurred by each firm (Table 4). The more adversarial the relationship, generally the higher the transaction costs. This was particularly apparent for technological transfer, labor productivity and local skill development. Comparing the transaction costs at each firm (Table 4) with each firm's control system (Table 3) is also instructive. It appears that the behavioral and outcome controls we observed were simply not designed to accommodate the unique transaction costs of most ventures.

For example, weak standard operating procedures and high decentralization are not an appropriate control response when shirking behavior is high. Weak cost controls and productivity metrics encourage low transferral of skills, slow learning, lack of accountability and low productivity. Nor does a fixed pay scheme independent of performance, as existed for Chinese Board members, encourage the aggressive pursuit of profits as do bonuses on the American side. Generally, the facets of the control system that we observed seemed inadequate to the task of monitoring the high transaction costs of the venture. As a result, these transaction costs adversely affected the performance of the venture.

Cultural Fit

We theorized that documented Sino-American cultural differences in the literature with respect to uncertainty avoidance, individualism and power distance would affect the control system design of the joint venture. First, we speculated that the high uncertainty avoidance behavior exhibited by the Chinese managers relative to U.S. managers in cross- cultural studies would affect the incentive design of the control system. Specifically, we expected high fixed pay components relative to variable bonus schemes and an emphasis on seniority rather than merit. Our results showed the opposite. As indicated in Table 5, the ratio of bonus to base pay for production workers ranged from 25-50 %. For sales managers, this ratio was even higher. While two of the four firms, Borg-Warner Gear and Ford-Shanghai Glass, mentioned the pre-existence of seniority pay and fixed incentive schemes, they had changed to productivity incentives within the past year. One reason given was that the base pay was already very low, so that the additional bonus was not significant. In addition, without the bonus component, workers would simply not be very productive. This incentive system, to which workers responded enthusiastically, was much closer to a U.S. incentive system than the traditional Chinese state owned enterprise system.

Second, because Chinese managers score significantly lower on individuality than U.S. managers, we hypothesized that joint venture incentives would be more

collectivist and that relative performance evaluation would be discouraged. These suspicions were confirmed. No firms mentioned overt use of relative performance evaluation, as this was anathema to Chinese culture. Three of the four firms reported using plant wide incentives in conjunction with departmental incentives. Thus, there did appear to be an acknowledgement of Chinese preferences for collectivist rather than individualistic incentives. Finally, because Chinese managers are much more culturally aware of power distance than U.S. managers, we theorized that joint ventures would emphasize vertical hierarchy, low decentralization and tight standard operating procedures. Generally, we found the opposite. In three of the four firms, the reporting system mirrored the trend in U.S. organizations towards less hierarchy, high decentralization and loose standard operating procedures.

Our interpretation of the observed relationship between cultural characteristics and performance measurement at this admittedly small sample of firms is that control systems are organic representations of expatriate and local control systems. The dominant partner's controls are not always culturally adapted in either the most appropriate or timely fashion. For example, U.S. merit incentives, in conjunction with Chinese collectivist pay schemes seem to increase labor productivity. However, lack of hierarchy, loose standard operating procedures and high decentralization run counter to the Chinese workers' deference to authority and reluctance to accept individual responsibility. Until local employees are appropriately socialized to these cultural expectations, such a control system is dysfunctional for the organization. The control system at a relatively young joint venture should be viewed as embryonic and should evolve over the life of the venture.

Future Research Directions

Through case analysis, we attempted to gain a basic understanding of the often conflicting theoretical and empirical literature with respect to management controls and joint venture characteristics (Geringer and Hebert 1989). Sino-American joint ventures were chosen as the unit of analysis, as they represented one of the fastest growing areas of joint venture investment worldwide. Based upon prior research and our pilot visits, we formulated a preliminary contingency framework of joint venture controls and performance for our case investigations. This framework included the strategic objectives of the venture, the transaction costs specific to the venture and the cultural fit of the partners.

Our results yielded several interesting findings. First, as speculated in the joint venture literature, the strategic objectives of both partners are not always complementary (Yan and Gray 1994; Shenkar 1990). - Our case analyses revealed several important and recurring conflicting priorities of both partners. - In the majority of the ventures examined, priorities were as often adversarial as complementary. By and large, the adversarial nature of the partners' strategic objectives were ignored by the management control systems of the ventures. The differences in the partners' objectives had a direct impact on the transaction costs associated with each venture. As speculated in the literature, this also adversely affected performance (Kogut 1988; Anderson and Gatignon 1986). Although the average age of the ventures was five years, only one to date was profitable and only one of the ventures expressed complete satisfaction with the attainment of its monetary and non monetary objectives.

Second, we significantly expanded the traditional definition of equity control in joint ventures (Blodgett 1991) to include diverse aspects of management control. As admitted by many of the managers interviewed, the outcome and behavioral controls in operation at their firms were often less than ideal. The systems were considered to be transitional and incomplete and in need of refinement. Reasons advanced for these undeveloped cost and management reporting practices included the lack of skilled personnel and the general indifference of the mainland partner. Without exception, all U.S. partners wanted a higher equity stake in the venture as a means of improving control, real or imagined. Yet at the same time, most U.S. managers admitted that the Chinese partner was relatively non-interventionist, making one wonder how the desired equity increases would affect management practices.

Third, many of the cultural aspects of the control system design did not square with our cultural expectations. Results corroborated previous studies which have not found significant cultural differences in the preference for management controls (Merchant et al. 1995; Chow et al. 1994; Chow et al. 1991). Absent in these experimental studies was any normative measure of the relationship between managerial control preferences and firm performance. Our results speak to this issue. While certain aspects of transplanted U.S. controls at odds with traditional Chinese culture - such as performance incentives - seemed to be effective, others were not. These included responsibility accounting practices that appeared to be foreign to the cultural mores of the individuals whose performance was being measured. This had a negative impact upon performance.

A simple causal model of the hypothesized interrelationships that we found in our case studies is shown in Figure 1. This model of the joint venture control system includes three fundamental antecedents - the strategic objectives of the partners, transaction costs and cultural factors. In this model we posit that the strategic objectives of the partners, mediated by the control system of the venture, should be reflected in the performance of the venture. Specifically, the more complementary these objectives, the better will be the venture's performance. As these objectives diverge, transaction costs will arise which will adversely affect performance. These transaction costs may be mitigated by the control system. Cultural differences between partners may affect but should not dictate the control system design. Rather, the control system should incorporate whatever hybrid cultural preferences of the partners make the venture most productive.

Caution must be exercised in generalizing the results of our study to other joint ventures. While every effort was made to ensure the objectivity of our interview questions and case selection and to ensure the reliability of our data coding, the sample remains limited to four Sino-American joint ventures. Additional case analyses from a wider spectrum of successful and unsuccessful Sino-American ventures are needed. Causal models of large sample survey studies which formally test the relationships hypothesized in Figure 1 are needed to empirically substantiate or reflect the preliminary findings of our study.

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FIGURE 1

RELATIONSHIP OF THE CONTROL SYSTEM
TO JOINT VENURE CHARACTERISTICS AND PERFORMANCE

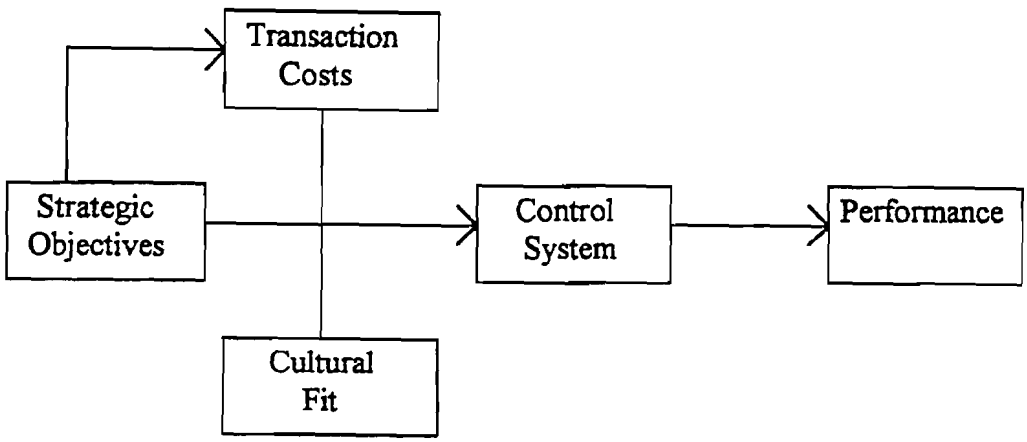

Table 1
Descriptive Characteristics of the Joint Ventures

Characteristics	Beijing-Warner- Gear	Mundipharma	AT&T	Ford-Shanghai-Glass
Product	Auto Transmission	Morphine	Fiber Optic Cable	Glass
Date of Formation	1991	1993	1990	1994
Investment ($US)	$15 Mill.	$6 Mill.	$20 Mill.	$15 Mill.
US-Chinese Equity	40/60%	50/50%	56/44%	51/49%
Number of Employees	1500	120	220	450

Table 3: Outcome and Behavior Controls of Joint Ventures				
Outcome Controls	Beijing-Warner Gear	Mundipharma	AT&T	Ford-Shanghai Glass
Predetermined Inter-Firm Transfer Pricing	Yes	Market	Yes	-
Royalty Payments	2-7% sales	5% sales	6% sales	$.5 mil (year)
Estimated Payback	6 years	6 years	4 years	5 years
Cash Flow Statements	Quarterly	Monthly	Real Time	Monthly
Operating Budgets	Quarterly	Monthly	Real Time	Monthly
Standard Costs	Yes	No	Yes	No
Cost Controls	Weak	Weak	Strong	Weak
Productivity Metrics	Some	Some	Many	Some
Behavioral Controls				
US/Chinese Equity %	40/60	50/50	56/44	51/49
US/Chinese Board Members	3/4	3/3	4/3	4/3
Number of U.S.Managers	4	1	3	3
Standard Operating Procedures	Weak	Strong	Strong	Weak
Decentralization	High	Low	High	High
Annual Head Office Visits	4	2	4	2
Budgetary Participation	Weak	Weak	High	Weak
Individual Responsibility	Low	Low	High	Low

Table 4: Joint Venture Transaction Costs				
Transaction Costs	Beijing-Warner Gear	Mundipharma	AT&T	Ford-Shanghai Glass
ASSET SPECIFICITY				
Asset Overvaluation				✓
Technological Misrepresentation				✓
Patent Law Violation		✓		
Asset Appropriation (externality)				✓
INTERNAL UNCERTAINTY				
Skill Misrepresentation	✓			✓
Effort and Risk Aversion	✓	✓		✓
Weak Production Incentives		✓		
Low Information Sharing		✓	✓	✓
ENVIRONMENTAL UNCERTAINTY				
Changing Import Duties			✓	✓
Weak External Benchmarking	✓	✓		✓

Table 5: Performance Measurement and Cultural Characteristics				
Cultural Characteristics	Beijing-Warner Gear	Mundipharma	AT&T	Ford-Shanghai Glass
UNCERTAINTY AVOIDANCE				
China > US				
Bonus: Base Pay	50:50	25:75	33:67	50:50
Seniority Pay	No	No	No	No
Predominant System	U.S.	U.S	U.S	U.S
INDIVIDUALITY				
US > China				
Team Incentives-Dept.: Plant	50:50	100:00	60:40	75:25
Relative Performance Evaluation	No	No	No	No
Predominant System	U.S	Chinese	Chinese	Chinese
POWER DISTANCE				
China > US				
Vertical Hierarchy	Low	High	Low	Low
Decentralization	High	Low	High	High
Standard Operating Procedures	Loose	Tight	Tight	Loose
Predominant System	U.S.	Chinese	U.S.	U.S.