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**CONTROL OF INTERNATIONAL  
JOINT VENTURES**

**CEO PUBLICATION  
G 97-17**

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## CONTROL OF INTERNATIONAL JOINT VENTURES

As markets have become more globalized and competitive, it has become increasingly difficult for any single company to excel, and thus be competitive, in all aspects of a given business. Few companies have all the requisite expertise and specialized knowledge in-house. To compete, many companies have solicited the assistance of other firms. Many firms have "outsourced" some non-core activities, such as computer operations, training, employee benefits, or internal audit. And many firms have chosen to enter into shared, cooperative agreements with "partner" firms.

Joint ventures, which are sometimes called "equity joint ventures,"<sup>1</sup> are one prominent form of cooperative agreement. Joint ventures (JVs) are separate entities owned by two or more partners. A JV is considered international either when at least one parent is headquartered outside of the venture's country of operation or when the JV has a significant level of operations in more than one country.

International joint ventures (IJVs) have become more prevalent and more important as the business world has become more globalized and competitive (e.g., Christelow, 1987; Croese, 1989; D'Aveni, 1994). Anderson (1990) observed that more JVs and cooperative arrangements have been announced since 1981 than in all previous years combined. And Sherman (1992) calculated that JVs between U.S. companies and international partners, specifically, have been growing by 27% per year since 1985. Even competitors which formerly did not talk to one another are entering into JVs (Templin, 1995). And empirical evidence has shown that

announcement of and involvement in IJVs has, in general, a positive impact on firm value (Hu, et al., 1992; Morck and Yeung, 1991; Lee and Wyatt, 1990).

Not all JVs succeed, however. Many encounter performance problems and fail. Gordon Redding, director of the University of Hong Kong Business School estimated that "About 50% of joint ventures fail" (Young, 1994, p. 35). Kogut (1988) showed that 32% of one sample of JVs failed within their first 10 years. In a sample of over 5000 subsidiaries of 180 large U.S. multinationals, Gomes-Casseres (1987) found that while 16% of wholly owned subsidiaries were "unstable," this percentage was higher--31%--for JVs. Instability meant that the entity had been liquidated, sold, or taken over by one or more of the original owners.

Good data about *international* JV failure rates, specifically, do not exist. Estimates of unsatisfactory IJV performance have ranged from 37% to over 70% (Geringer and Hebert, 1991). IJV failure rates are probably higher than are those for domestic JVs because IJVs generally face greater challenges. For example, many IJV partners must monitor operations in settings with which they have little familiarity (e.g., markets, distribution systems, legal systems), and they must bridge cultural boundaries (e.g., Brandt, 1990; Brown et al., 1989).

Much is yet to be learned about IJV, however. As Geringer and Hebert (1989, p. 250) observed, "Our understanding of international joint venture management lags behind the demands of practice." And Young (1994, p. 35) concluded that "Since little published material exists on how to succeed at joint ventures, there is no tried and trusted formula." It seems clear, however, that many IJVs suffer from poor control practices. Many IJV partners have trouble coping with a partner's conflicting interests, an inevitable loss of operating autonomy, differing cultures and/or

management styles. And a lack of trust between partners sometimes leads to more complex and, hence, destructively slow decision making processes.

This study was focused on IJV control practices which, Geringer and Hebert (1989) concluded, is one of the prime determinants of IJV success or failure. For purposes of this study, having good control over an IJV means that it is highly likely that each of the partners' objectives for the IJV will be met (definition adapted from Merchant, 1997). If any partner perceives that an IJV is out-of-control from its perspective, then it is likely to terminate its involvement in the IJV and bring about the IJV's failure.

Little research has been directed at the questions related to what controls are and should be used in IJVs and what causes them to fail. For example, Geringer and Hebert (1989) wrote that, "The issue of control has received only fragmented and unsystematic attention in the JV literature" (p. 237), and "managers have received minimal guidance about when and how to use [the various control options], as well as about the potential trade-offs between alternative control options" (p. 250). This study was addressed at this void. The central research question was: How do partners exercise effective control over their IJVs? Follow-on questions were: How are IJV control systems similar? How are they different? What causes the differences?

Since IJVs have attracted no attention from accounting researchers, two more specific, accounting-related questions were also chosen to guide the research: (1) How important are accounting performance measures in controlling an IJV? (2) What accounting measurement issues do IJV partners face, and how are they handled? On the issue of JV performance measurement, Anderson (1990, p. 20) observed that, "There is startlingly little information on how (and even if) firms monitor and weigh their joint ventures' performances."

To be guided as much as possible by prior theory and evidence, we started our explorations of the research questions by reviewing the published JV literature. We then explored these questions with a field study of three relatively large, arguably successful IJVs. We found many similarities among the control systems used in the three IJVs, but we also found some significant differences. We were able to suggest tentative explanations of the causes of some of the control system differences.

#### DIMENSIONS OF IJV CONTROL

Geringer and Hebert (1989) concluded that control of IJVs is complex and multidimensional. As compared with controlling a single business venture, controlling an IJV involves an obvious, extra dimension of complexity because the behaviors of the IJV's *and* the partners' employees must be considered in choosing the set of controls to use. Building on Geringer and Hebert's work, it can be suggested that three primary control dimensions must be considered in order to obtain a thorough understanding of IJV control: control mechanisms, control focus, and control tightness.

##### Control Mechanisms

Partners can use any of a broad range of mechanisms to protect their interests in an IJV. One useful, and all-inclusive, way to classify control mechanisms is according to the object of control; that is, whether the control is exercised over actions, results, or personnel/culture (Merchant, 1997). Partners can take steps to ensure, through legal or administrative means, that certain desirable *actions* are taken (or undesirable actions not taken). For example, they can guarantee themselves the right to make or approve certain key decisions, or they can require IJV personnel to follow certain pre-approved policies or contract terms. Alternatively (or in addition),



the partners can focus on *results*. They can monitor results and intervene when necessary. They can also ensure that IJV employees are promised rewards for producing the desired results (or punishments for results the partner wishes to avoid), thereby inducing the IJV employees to take the desired actions. Finally, the partners can take steps to ensure either that the IJV *personnel* are willing and able to perform well or that the IJV's *culture* leads them to perform well, such as through socialization and peer control. *Figure 1* shows examples of each of these basic type of controls.

### Control Focus

The second IJV control dimension relates to the control focus. Partners can choose to exercise control over a relatively broad or narrow scope of the IJV's activities. That is, they can have a broad control focus and attempt to control the entire range of the IJV's activities, or they can have a narrow focus and confine their control activities to the few activities or performance dimensions they consider most critical.

### Control Tightness

The third dimension of IJV control is the tightness (or extent) of the control which is exercised. Geringer and Hebert noted that the few researchers who have considered this control dimension have operationalized it in terms of the autonomy of the IJV's personnel. This operationalization is imperfect, however. The actions of some powerful, highly autonomous IJV personnel can sometimes be shown to be highly likely to be in a given partner's best interest, for example, because of the sets of incentive under which they are operating. Tight control can be effected through any mechanism that provides a partner with a high degree of certainty that personnel in the IJV will act as the given partner wishes.

Both action and results controls can be used to effect tighter or looser control (Merchant, 1997). Action controls are tight from a partner's perspective if that partner (not IJV personnel or another partner) has the right (or approve) to make the key decisions, if approval reviews are frequent, detailed, and performed by a knowledgeable person (or persons) the partner trusts, or if IJV personnel are held strictly accountable for adhering to a near complete set of prescribed actions known to be desirable (e.g., policies and procedures).

Results controls are tight if the measured results dimensions are both congruent with the partner's wishes for the IJV and substantially complete, and if the measurements are precise and objective. If incentive systems are used, they should involve significant rewards (or punishments) that are directly and definitely linked to the accomplishment (or non-accomplishment) of the desired results on a short-term basis. A direct link means that results translate automatically into rewards or punishments, with no buffers and no ambiguity. A definite link between results and rewards means that no excuses are tolerated.<sup>2</sup>

#### FACTORS POTENTIALLY AFFECTING CONTROL SYSTEM CHOICES

From the perspective of each partner, the critical control system design issue is how to choose a set of control mechanisms, control focus, and control tightness that produces good control. In addition, the control benefits must exceed the costs. The costs of controls include not only out-of-pocket costs (e.g., the value of the rewards given, coordination and governance costs) but also indirect costs (e.g., burdens placed on the IJV which may limit the IJV's flexibility and responsiveness).

While previous research has not provided evidence directly explaining how IJV partners make control design choices, it has identified some variables describing important IJV differences

which might have significant explanatory value. These variables include (1) the partner's objective(s) for the IJV, (2) the IJV's fit with the partner's business unit(s), (3) the extent to which the partner trusts the other IJV partner(s), and (4) the IJV's recent performance.

#### Partners' Objective(s) for the IJV

Partners' objectives for the IJVs in which they become engaged differ significantly. Hung (1992, p. 352) studied 110 strategic business alliances between Canadian and Pacific Asia companies and identified 22 "motives and fundamental objectives." In a highly aggregated sense, all of the items on this list, which is shown in Figure 2, can be identified as being designed to increase profits and/or reduce risk. More specifically, however, the list can be shown to include four main categories of objectives: (1) reducing costs (e.g., attaining economies of scale, gaining access to relatively inexpensive foreign labor), (2) obtaining market access (e.g., overcoming trade barriers, deepening cultural familiarity), (3) obtaining access to technological developments or expertise, or (4) reducing risks (e.g., sharing business risks, minimizing political risks).

No existing research evidence shows links between partners' objectives or strategies and IJV control system choices, but it seems logical that the objectives which are important to a given partner should affect choices regarding control mechanisms, control focus and/or control tightness. The notion that when at least one partner's objectives are phrased in terms of financial returns (e.g., profits, reduced costs), an IJV will place relatively high reliance on financially-oriented results controls seems plausible and worthy of test. So too does the notion that when a partner has a broad set of objectives for an IJV, its control scope will be broader.

### IJV's Fit with the Partner's Business Unit(s)

Franko (1971) found that when parents used JVs to diversify their product offerings, they tended to use relatively loose controls over the JVs, but those loose controls led to relatively stable JVs (i.e., those with a relatively long, successful lives). Franko operationalized control looseness as the lack of importance placed on standardization and relative decentralization of decision making. Conversely, when the parents used the JVs to expand existing products geographically, they tended to use relatively tight controls, and the IJVs tended to be unstable. Harrigan's (1988) findings partly contradict Franko's, however. She found that ventures are more successful<sup>3</sup> when the partners' business units' products and/or markets are related to those of their JVs than when they are unrelated or only process related.

### Trust in Other JV Partner(s)

Many researchers have suggested that trust in the other partner(s) is an important JV variable with control system implications (e.g., Block and Matsumoto, 1972; Peterson and Shimada, 1978; Sullivan and Peterson, 1982). Lack of trust in the other JV partner(s) adversely affects JV performance. Harrigan (1988) found that JVs last longer when their partners have similar cultures, asset sizes, and levels of experience with JVs. JV partners' degree of trust in each other seems to have two main elements. The first is related to competence. Can the partner and the personnel it contributes to the JV be trusted to make good business decisions? Do the personnel have the requisite skills and knowledge? The second element of trust relates to the potential that the other JV partner(s) will engage in self-centered behaviors which are not in the best interest of the JV.

Both needed elements of trust—competence and lack of self-centered behaviors—are probably smaller, on average, in IJVs than in domestic JVs. IJV trust is difficult to build and to sustain because international partners' cultural differences can lead to unpredictable behavioral reactions, and the skill levels of some partners can be suspect. Further, trust is more difficult to build in IJVs, as compared with JVs, because greater geographic separation makes partner and partner/IJV interactions more difficult and more expensive.

Partners' trust (or lack thereof) in their partners probably has some important control implications. Lack of trust probably leads to a broader control focus and greater control tightness.

#### Recent IJV Performance

IJVs' recent levels of performance have been found to be directly related to partners' attitudes toward control. Tomlinson (1970) studied seventy-one IJVs in India and Pakistan with a U.K. partner. He found that a higher level of IJV profitability tended to give the U.K. partners a more relaxed attitude towards control. These results are consistent with the findings of Franko's (1971) study of 169 US multinational companies' involvement in over 1100 JV's. Although the concepts are worded slightly differently, a relaxed attitude toward control seems to indicate a relatively narrow control focus and a demand for looser (rather than tighter) sets of controls.

#### **RESEARCH METHOD**

To explore the research questions discussed above and, more generally, the whole area of control system choice in IJVs, we solicited the cooperation of the partners and managers of three IJVs. The first is Netherlands Car B.V. an IJV equally owned by Volvo Car Company, Mitsubishi Motor Company, and the Dutch federal government. The second is Holland Sweetener Company, an IJV equally owned by DSM (a Dutch chemical firm) and Tosoh (a Japanese chemical firm).

The third is Omega Ltd., a Western Europe-based IJV 51% owned by Alpha Inc. and 49% owned by Beta, Inc.<sup>4</sup> Both Alpha and Beta are large U.S.-based corporations.

Data were collected by interviewing representatives of the partners, managers and controllers of the JVs, and by examining relevant company documentation and records. The following sections provide descriptions of each of these IJVs and their controls and control challenges. The paper then concludes with an analysis of the similarities and differences in the IJVs' control systems and some tentative theoretical conclusions.

NETHERLANDS CAR B.V.

#### Brief History

The Netherlands Car B.V. (hereafter NedCar) JV owns a car-producing factory located in Born (province of Limburg) and an engineering operation located in Helmond (province of Brabant), both located in the southern part of the Netherlands. NedCar's predecessor company was Van Doorne, a Dutch company founded in 1927 to build trailers. Later, from the 1950s onwards, Van Doorne also built trucks and cars. In the early 1970s, Van Doorne got into serious financial trouble. To address their problem, Van Doorne's management interested International Harvester in participating in a JV with its truck division and Volvo Car Company (VCC) in participating in a JV with its car division. The car JV was called DAF Car BV. DAF built the Born plant in 1973. But in 1974 DAF encountered financial trouble. VCC then took a majority share of 75% in the car JV and renamed it Volvo Car BV.

After the problematic introduction of a new car (the Volvo 300 series) in 1976, VCC attempted to sell its majority share of the Volvo Car JV to the Dutch government. The government declined the offer but provided some financial aid to preserve the 8,000 jobs in the

relatively impoverished Limburg region of the country. Volvo Car BV continued to generate losses during the 1970s, so in 1981 the Dutch government provided more financial aid in 1981. This time, however, the Dutch government took over VCC's majority share, leading to 70% Dutch state and 30% VCC ownership.

By 1989, however, it became clear that production volumes of 100,000 cars per year were too small for the Volvo Car venture to generate positive profits and cash flows, so the partners sought a third partner. In November 1991, the Japanese Mitsubishi Motor Company (MMC) agreed to join the venture, and NedCar was formed with MMC, VCC and the Dutch State as equal partners. The Dutch State received payment for 33-1/3% from MMC and 3-1/3% from VCC.

For the first few years, the Born facilities were shared by the Volvo Car venture, which was still producing the Volvo 400 series of cars, and the new NedCar venture. It was expected that the Volvo 400 series of cars would be discontinued in 1996 or 1997. Volvo and NedCar design engineers were involved in developing a new model of Volvo car, dubbed the "V-car." MMC engineers in Japan were developing a new Mitsubishi model of car, dubbed the "M-car," to be produced in the NedCar plant. The M-car was introduced in early 1995. The V-car was introduced in early 1996.

Soon after the IJV formation, the NedCar plant was simplified using Japanese "lean production" techniques. The IJV contracted out the production of many parts, and renegotiated contracts with many suppliers. Employment was reduced from over 9,000 to less than 5,000 (with a goal to go much lower), and the number of management positions was reduced from 32 to five.

## Partner Objectives

### A. MMC

One of MMC's important objectives was to establish a presence in Europe. MMC was the only one of the top-five Japanese car manufacturers without a European manufacturing location. Cooperation with VCC and the Dutch State promised to making it relatively easy to establish the European presence. MMC managers hoped they would avoid some EU trading restrictions. As one MMC representative put it, "Artificial (European) regulation prevented us from importing appropriate numbers of cars in Europe." MMC managers hoped the IJV would accelerate MMC's learning about the "culturally diversified and complex Europe." They expected this knowledge to help in both manufacturing areas (e.g., labor relations, government regulations) and marketing and sales areas (e.g. customer preferences, market structure). Both of MMC's partners turned out to be helpful in this respect: The Dutch State helped with political negotiations, relations with the EC, and labor union affairs and minimized the potential for "Japan bashing." VCC brought new perspectives and knowledge regarding safety and environmental issues (e.g., low-pollution painting processes).

A second important MMC objective was for lower production costs, or at least a hedge against further value appreciations in the yen. Costs had been a significant problem for MMC. In 1990, when the NedCar venture was formed, one Dutch guilder was worth 71.43 yen, while in October 1994 the yen had appreciated to 57 to the guilder.

MMC managers knew the Born plant was not very efficient—it had strong unions and a "bad culture"—and that they would have to make major efforts to make it "world class". But MMC opted for a JV instead of building a "greenfield" (i.e., brand new) facility mainly because



the JV offered the opportunity to gain economies of scale and to share the risks of the heavy investments in production facilities.

#### B. VCC

VCC's primary objective was the realization of production cost savings that would be created by sharing investments and producing in greater volume. Since the 1972 oil crisis, VCC management had been committed to production of small cars which could be sold in large enough volumes to sustain a dealer network in Europe. They recognized that the production of small cars had to take place near the largest part of the market, on the mainland of Europe, but they recognized that the Born facility needed additional volume to be economically viable. MMC would provide that additional volume. VCC's management was also interested in MMC's offer to supply some highly reliable electrical components to the IJV. And the NedCar venture provided VCC access to MMC's renowned production expertise, including important knowledge related to process engineering, use of "production task teams," production quality, and production control.

#### C. Dutch State

The objectives of the Dutch State have evolved over the years. Originally it became a partner in Volvo Car to ensure the employment of 8,000 people who were working in the Limburg region that had become depressed after the closing of the state coal mines in the late 1970s. But as employment in the Limburg region has improved and become more diversified, this objective lost its importance. Starting in about 1985, the State's primary objective became financial. Government personnel had increasingly been focused on improving the financial results

of the Volvo 400 series. This series showed its first profit in 1994, and further improvements were projected.

When NedCar was formed, the State negotiated for a total exit from the JV. This exit was scheduled for 1998. In the interim, the State was also negotiating to maintain the venture's engineering capability, to maintain some car-making technology within the Netherlands and to preserve the relatively high-paying professional jobs.

### Objectives for NedCar

The commercial partners (MMC and VCC) did not want to share marketing data or operations, so NedCar became primarily a production-oriented IJV. Its main objective is to produce high quality cars as efficiently as possible. Some product development activities remained at a NedCar site in Helmond, but the number of development personnel was reduced from 1,200 to 600, and plans were made to move those personnel to the Born site.

MMC and VCC decide independently what types of products they want NedCar to produce. (The MMC and VCC cars produced at NedCar are similar and share many parts, such as platforms, engines, and brakes.) NedCar personnel decide how to produce these products, and that led them to negotiations with the commercial partners about car designs, costs and optimal production processes. As NedCar's president Sevenstern stated:

We don't meddle with the partners' choice of what type of car they want to build. We work for the management of the Swedish and the Japanese ... and we must unite the different demands they have.

If, for example, Volvo management wanted their cars equipped with disc-brakes and MMC management opted for disc-brakes in front and drum-brakes in back, NedCar management

might try to persuade both parties to adopt a single system. But if these negotiation efforts failed, then NedCar would build the cars according to the specifications of each partner.

After the introduction of both new cars and the discontinuance of the Volvo 400 series, it was expected that the commercial partners would produce equal numbers of cars in the Born plant. The M- and V-cars would share only two elements of the factory: the press shop and the paint shop.

### Governance Structure

The NedCar's partnership agreement, the legal document created at the IJV's inception, mandates a governance structure, including a board of governors, a supervisory board, and an elaborate committee structure. NedCar is managed by a full-time board of governors consisting of four members, three of them representing one of the JV partners and the fourth acting as an independent president. Overseeing the board of governors is a seven-member supervisory board consisting of two representatives from each of the commercial partners, one representative from the Dutch State, the JV president, and one worker's representative. This board meets four times per year.

The partnership agreement also mandates the use of a number of special committees which are charged with translating the sometimes vague JV agreements into operational guidelines. All these committees are comprised of representatives of VCC, MMC, the Dutch State, and NedCar management. Two committee examples are the Financial Steering Committee and the Master Planning Committee. The 21 members of the Financial Steering Committee discuss financial issues, such as cost allocation and transfer pricing problems. The Master Planning Committee, which consists of financial specialists and the management team of NedCar and representatives of

MMC and VCC, plans production quantities of each model of car for the coming 12 months, and specifies daily production quotas to guide short-term management.

NedCar's financial records are subject to multiple audits. NedCar's auditor is Moret Ernst & Young. Price Waterhouse does audit work for MMC. Arthur Andersen does some audit work for the Dutch State, particularly focused on examining the fairness of the cost allocations, and provides a report to the Dutch parliament. VCC does not employ a separate auditor. VCC management is willing to rely on the work performed by Moret Ernst & Young, supplemented by some audit-type investigations performed by VCC employees.

#### Financial Accountability

In terms of financial responsibility, NedCar is a cost center. (The Volvo Car JV had been a profit center.) The completed cars are transferred to VCC and MMC at a transfer price set to allow NedCar to break even. Car sales to dealers and the profits on those sales are recognized only on the commercial partners' books.

Production standards are set at "world class" levels that are very difficult for NedCar personnel to achieve. For instance, NedCar management was given an objective for 1996 to produce a car with 15-20 labor hours, instead of the 30 hours it took in 1994. At the same time, they were asked to double annual production targets, to 200,000 cars, and to reduce employment from 10,000 to 3,800.

Performance reports are provided by NedCar in a "pyramidal structure." At the bottom of the pyramid are team coordinators (often called budgetees) within departments. These people receive detailed operational, mainly quantitative, information on a near-continuous basis. Heads of departments and other members of the management team are in the middle of the pyramid. These

people receive weekly and monthly reports on important performance indicators. The eight key production measures used in NedCar are (1) production hours per car, (2) parts inventories, (3) repairs/total operations, (4) defects/100 cars; (5) delivery time to the home market (weeks); (6) time to develop new model(s); (7) job rotation frequency (0 = frequent; 1 = world standard; 4 = none); and (8) suggested improvements/number of employees. Also monitored are the number of cars produced, number of workflow obstructions, various quality indicators, number of orders and employee absences.

The partners are at the top of the pyramid. NedCar provides the partners quarterly profit and loss statements and balance sheets on the financial results for the V400 and the new car project (V- and M-cars together). The core reporting and accounting structure is based on the old DAF systems and uses Dutch accounting principles.

Both commercial partners focus considerable attention on the production costs and, hence, the transfer price per car since the transfer prices are set to cover all the production costs. The partners' interest in the operating details differs significantly, however. As compared to VCC, MMC focuses more intensively on the more frequent, more detailed information which comes from the bottom of the information pyramid (the workplace level). An important analysis for MMC has been the extent to which NedCar has been able to compensate for successive appreciations in the yen. The evaluation of NedCar's performance is conducted by comparing NedCar's results with an alternative scenario in which MMC produces cars in Japan and exports them to Europe.

Decisions regarding costs and transfer prices are made separately. NedCar's management can make small engineering changes which affect costs, but larger technical adjustments have to

be decided by the partners based on a so-called "change request." Twice a year (around January 1st and around summer) the transfer prices are renegotiated. All the engineering changes are updated and summarized, and the partners decide jointly on the effects the engineering and economic changes will have on the transfer price. Within the six month period between transfer price negotiations, NedCar, which owns the cars and parts inventories, bears the foreign exchange risk and risk of changes in the prices of production factors. However, it is shielded from industry competitive risks because it is compensated for volume shortfalls below a preset "normal" level.

#### Decision Making and Conflict Resolution Processes

All significant NedCar decisions are made by consensus. No partner can be outvoted. If consensus cannot be reached, the partners can submit the issue to arbitration. To date, however, arbitration has never been used because, as one VCC manager put it, "The partners respect each other and are on good working terms." Representatives of all three partners reported that the decision making processes in NedCar are cordial and constructive but that they take a lot of time.

A few important conflicts were anticipated and addressed in NedCar's original JV agreement. One relates specifically to the sharing of volume variances which are important because they can lead to large differences in the allocation of fixed overhead costs among partners. The Born facility was easily able to produce 200,000 cars annually, but until the new cars were introduced and sales reached that volume level, who would pay for the excess capacity? And from what date? A special provision in the JV agreement called "the solidarity principle" provides specific answers to these questions.

The NedCar JV agreement specified that in 1996 the total production capacity installed would be 200,000 cars, equally divided between the two commercial partners. For the longer

term, normal production was planned to be 90,000 M-cars and 90,000 V-cars. The solidarity principle prescribes that volume variances within a boundary of plus or minus 10,000 cars will not lead to differences in the fixed cost charges per car and that a partner who produced above normal capacity should be compensated by the partner whose use of capacity falls short of normal.

Figure 3 provides a numerical illustration of the solidarity principle. In this illustration, partner B contributes to the negative fixed cost coverage of partner A to the amount of the overproduction of partner B. The solidarity principle secures the fixed cost charges for a specific range around normal capacity. If volume variances surpasses these boundaries, fixed cost charges will be adjusted for pre-specified ranges in volume variances. The solidarity principle seems to be frequently used in JVs agreements.<sup>5</sup>

The emphasis on controlling the transfer price per car also leads to great attention being paid to price variances. The price variances are greatly influenced by cost allocation issues at the NedCar plant. In NedCar's early years, cost allocations were needed mainly to distinguish the costs of the existing Volvo 400 series from the cost of the new project (the M- and V-cars). The "memorandum of understanding on allocation systems," which is part of the original JV agreement, only advocates a "fair cost allocation." This fair allocation should be realized "by attributing to a product all costs which can be directly related to it" and allocating all remaining indirect costs by applying "fair" and "reasonable" cost drivers. All three partners know that the product costs which are so important to NedCar contain many arbitrary cost allocations, and the allocations create many discussions among the partners. A NedCar controller explained that:

This system frequently leads to many discussions between partners about cost allocation principles and cost drivers. We would like an agreement based on a flexible transfer price which can absorb fluctuations in cost figures. But the partners don't accept this approach because they want to hold NedCar responsible for budget variances. In my opinion, [the accountability] could be attained better than by just looking at the [transfer price] per car.

The complexity of some of the cost allocation issues can be illustrated by describing "the paint shop cost allocation issue."

#### The Paint Shop Cost Allocation Issue

A major part of the renovation of the Born production site was a f400 million upgrade of the paint shop. The paint shop capacity had to be expanded, and the partners decided also to install a new, water-based, less polluting and lower waste-producing paint technique. This renovation, which started in November 1993, was planned to two years and be carried out while the production of the Volvo 400 series continued. Originally, it was agreed that the Volvo 400 model would bear part of the depreciation of the renovated paint shop, with allocations based on the number of cars painted. For 1995 it was expected that 21,000 M-cars and 95,000 Volvo 400 cars would be made. For 1996, these numbers would be 120,000 M- and V-cars and 30,000 Volvo 400 cars.

The Dutch state was opposed to the new cost allocation method for three main reasons. First, considering the late stage of the life cycle the Volvo 400 car is currently in, the Dutch state and VCC would not have made the decision to renovate the paint shop at this moment. Second, the production numbers lead to a sharp cost increase per Volvo 400 car in 1995. And third, during the renovation period, construction activities obstructed the production flow of the Volvo



400, and the dust created caused a deterioration in paint quality. A decrease to 75% "green-OK" caused extra repair and rework.

This problem was discussed in several meetings of the "Financial Steering Committee." Multiple solutions were proposed, including charging only the project (M- and V-cars) for the additional investments while giving some compensation for production delays to the Volvo 400 series; and making a projection of the final "steady-state" situation in 1997 and apply the final cost allocation to the production numbers in 1995 and 1996.

But the financial steering committee did not choose either of these solutions. Instead, all the advantages and disadvantages of the renovation of the paint shop for the V400 series were listed and rough financial estimates were attached to them. The advantages included improved coating, higher speed paint process (less time in process) and decreased labor costs. The disadvantages included the rework during renovation (quantifiable in number of cars and hours spent on repair) and higher depreciation than would have been necessary if the investment had been done only for the V400 model. Balancing advantages with disadvantages gave a modest advantage for the V400. At the same time, it appeared that part of the existing machinery for the V400 series (which was labeled 'V400 General') was also partly used by the project, and allocations based on projected number of cars turned out to be more or less the same amount as the paint shop advantages of V400. It was decided that only the same historic cost per car of the paint shop, as it existed before the renovation, would be allocated to the V400 while at the same time all 'V400 general' costs would be entirely allocated to the V400 model. For the coming years, some additional costs for the M- and V-cars will be deducted from total costs of the paint

shop (depreciation and direct costs). The rest are the “common costs” which will be allocated based on number of cars between the V400 model and the project (M- and V-cars together).

## HOLLAND SWEETENER COMPANY

### Brief History

Holland Sweetener Company (HSC) is a 50-50 JV of DSM BV, a large Dutch chemical manufacturer, and Tosoh Nederland BV, the Dutch subsidiary of a large Japanese chemical manufacturer. DSM and Tosoh had had some research and development cooperation. When they decided also to cooperate in production and marketing, HSC was created. The JV agreement was signed in March 1985.

HSC’s only product is aspartame, a sweetener 200 times as sweet as sugar but with almost no calories. Aspartame is used to sweeten a broad range of “light” or “diet” food items, including drinks, dairy products (yogurt, ice cream, and other frozen food products) and confectioneries (candy and chewing gum). HSC began producing aspartame in 1988.

### Partner Objectives

The HSC JV was formed because both DSM and Tosoh realized they needed each other to compete with the Nutrasweet brand of aspartame, manufactured by the Nutrasweet division of the U.S.-based Monsanto Corporation, which dominates the market. Aspartame production is complex and difficult, and the partners decided that both companies’ expertise was necessary to survive in the marketplace. Large investments were required to start the business, and the partners decided to share the investment burdens and risk.

From the DSM perspective, the prime benefit of involvement in HSC was access to Tosoh’s patented, breakthrough aspartame production technology. HSC licensed Tosoh’s

production technology starting in 1985, and then purchased it in 1991. From being part of HSC, DSM has learned much about the enzymatic aspartame production process, a foundation of modern biotechnology, and has benefited through its application of this knowledge to some of its other businesses as well.

DSM also expected other benefits. It was able to share the investment costs of starting a new plant with Tosoh. HSC also promised DSM some sales and profit growth, although at its current size HSC is but a small fraction of DSM's total business portfolio.

Virtually no HSC-related synergies accrue to DSM on the end-market side of the business. DSM has only isolated positions in food ingredient markets, and it has no food ingredient market strategy.

Tosoh derived several important benefits from its involvement in HSC. One was access to a key raw material—phenylalanine. There are only two major sources of phenylalanine in the world—Nutrasweet and DSM—and it would have been prohibitively expensive for Tosoh to make the investments to develop the technology to produce phenylalanine on its own. Tosoh also gained access to European product and labor markets with which it had little familiarity. And it learned how to manage a fine chemical process, and in particular how to organize and focus the required troubleshooting efforts, processes at which DSM excels.

In HSC's early years, the aspartame market proved to be less profitable than the partners had expected. This was because Nutrasweet, which had a cost advantage, started pricing its product as a commodity even before its patent expired (1988 in Europe) in order to limit the development of new competitors. Nutrasweet's strategy worked, because in the early 1990s, six aspartame manufacturers were operating in Europe alone. Only HSC survived.

## Governance Structure

The overall direction and monitoring of HSC's operation is provided by a Board of directors comprised of six members, three representing Tosoh and three representing DSM. The chair of the board is appointed by Tosoh. The board meets twice a year. The board work is furthered through the efforts of an *Executive Committee*, comprised of one board representative from each partner, which meets four times per year. All decisions made by the executive committee must be unanimous. Otherwise the issue must be taken up by the full board. The primary functions of the executive committee and board are to review and approve the strategic plan and annual budget, to approve all appointments of personnel to management levels, and to approve all investment proposals that, collectively, exceed HSC's cash flow.

The management team, which reports to the executive committee, consists of a general manager, technical manager, marketing manager, and controller. Appointments to these positions must be approved by the Board of directors. For the first five years of the venture, appointments of the general, technical and marketing managers were made by DSM, and the senior vice-president/controller's appointment was made by Tosoh. It was anticipated that the appointment responsibilities would reverse at the end of the term. However, since both partners were happy with the personnel in place, no changes have been made.

Legally, HSC actually has only four employees, all secretaries. All the other HSC personnel are employed by either DSM or Tosoh. They are billed to HSC at cost plus a small premium.

Only five representatives of Tosoh work for HSC in the Netherlands, the controller and four plant personnel (including the second in charge at the plant). In addition, the head of HSC's

U.S. office, which is located in Atlanta, is an American employed by Tosoh. Nonetheless, Tosoh is comfortable with this unequal employee representation because its representatives have access to any kind of information they desire.

#### Provisions of the IJV Contract

The JV contract includes a number of provisions which guide HSC's operation, including:

- A financing plan which states that the partners will contribute 30-40% of the JV equity on an equally shared basis. HSC will have to raise the remainder of its needed capital through bank loans, government loans, and loans from parents. If the Board of directors has approved the loans, the partners will guarantee the loans on an equally shared basis. Additional equity contributions are possible.
- A dividend policy stating that dividends will be equally distributed to the partners unless the board decides otherwise.
- A business plan which sets JV goals and a plan of action for the coming years.
- An agreement that HSC's operations will be physically located at a DSM site in Geleen.
- Various contracts between HSC and DSM, including a land lease agreement, site-related service contracts (e.g., fire brigade support), personnel agreements for training of HSC employees, and a maintenance agreement.
- A secrecy agreement related to partner obligations regarding technical and market knowledge.

The JV contract is valid for 25 years and can be renewed. The participation of third parties is prohibited without the agreement of the other partner.

#### Financial Accountability

The Board of directors supervises HSC on behalf of the partners. The JV agreement set HSC up as a profit center, and HSC's general manager prepares an annual profit and loss statement, balance sheet, and liquidity plan. Dutch accounting rules are followed. These financial

reports are audited by an audit firm (Coopers & Lybrand) which is independent from DSM or Tosoh (i.e., C&L does not audit either of those firms). Monthly the general manager prepares a report for the board with both financial and non-financial performance indicators. Based on these results, the board makes decisions regarding additional funding, division of profits or losses among the partners, and dividend payments.

The monthly reports presented to the HSC board are more detailed than any used in DSM. Tosoh representatives, in particular, study these reports carefully and ask many questions. DSM representative focus on key numbers, in particular profits, sales, penetration of the U.S. market, and operating statistics indicating the performance of the new manufacturing facility. Over all, Tosoh representatives seem to place slightly more emphasis on short term performance than DSM representatives do.

During the first six years of HSC, the main emphasis was put on getting the new factory to work. Reports on plant downtime, trouble shooting activities, and other operational details were of prime importance. Later, other performance indicators, such as budgets, operational plans, and a variety of financial and non-financial performance measures, gained attention. At the same time, the original contracts with DSM are being reexamined to see if HSC can be treated just like any other DSM business unit.

Some of HSC's managers consider the definitions of the performance measures "too unclear and vague," mainly due to the absence of specified agreements regarding allowable costs and cost allocation mechanisms.

## Decision Making and Conflict Resolution Processes

The HSC JV agreement said nothing about conflict resolution procedures. Had impasses arisen, the legal system would have been the only recourse for either of the partners. In HSC's history, however, no issues had proven to be insoluble.

Conflicts have arisen, however. One major point of contention rose in the early years of the IJV. The actual costs related to many of the services DSM was providing for HSC were higher than were specified in the JV contract. DSM managers wanted to renegotiate the contracts and to treat HSC for cost allocation purposes like any "normal DSM business unit." Tosoh representatives did not agree with this change, and to date this conflict has not been totally resolved. Allowable allocations are being negotiated on a situation-by-situation basis.

One specific "big discussion point" arose in 1993. DSM announced an early retirement program. Employees of age 58 or older were eligible to retire, and many employees accepted the program. The program affected HSC because a vast majority of the HSC workers are DSM employees whose costs are billed to the JV. However, only one HSC worker accepted the early retirement program. Tosoh managers thought HSC should bear only the allocated cost of that one worker, approximately 1.5 million guilders. The standard allocation amount, based on HSC's proportion of total DSM employees, was approximately 2.5 million guilders, a difference of about 1% of HSC's total annual earnings. In the end, a compromise was reached at nearly the middle of the disputed range.

Regarding the partners' involvement in HSC's decision processes and the conflicts that inevitably occur, Dr. Emmo Meijer, HSC's president, made a number of insightful comments:

- There is a fit between the Japanese and the Dutch. We both manage with a consensus style.

- Our early crisis created the right spirit between the two companies. We had to cooperate to survive.
- Loss of face is important to the Japanese. But they see the other side [of the arguments].
- We compromise most of the time. There are more important things to do than argue. We have a kind of balance. Sometimes Tosoh wins. Sometimes DSM wins.

## OMEGA LTD.

### Brief History

Omega Ltd. is a joint venture of Alpha, Inc. and Beta, Inc., two large (*Fortune* 500) U.S.-based corporations. Omega, located in a small city in western Europe, was founded by a local businessman. It subsequently grew to be Europe's largest manufacturer of a family of electrical components which will be referred to here by the fictitious name of "digitizers." Omega's sales, which total the equivalent of several hundred million U.S. dollars annually, account for approximately 15% of the European market for digitizers and 5% of the world market. Its factory employs over 1,400 workers. Alpha and Beta are the two largest manufacturers of digitizers in the world. Omega ranks third.

In 1994, Alpha Inc. bought 100% of Omega's shares. Alpha has over 40 separate operating divisions which manufacture and sell a broad range of electronic, electrical and other products for commercial, consumer and industrial markets. Alpha's chairman was a member of Beta's board of directors at the time, and he decided almost immediately that he wanted Omega to be a JV with Beta, a company with complementary products and skills. He tried to persuade Beta's management, but it took them some time to decide because they had larger issues on which



they were focused. Finally, in 1996 Beta entered the JV by buying 49% of Omega's shares over a 13-month period.

From 1996 onwards, the Omega factory produced the following three product lines:

- *Omega digitizers*: original Omega-brand digitizers.
- *Beta digitizers*: smaller digitizers produced to Beta specifications and sold only to Beta dealers.
- *Digitizer kits*: packed sets of Beta-specification components which are sold to Beta at a fraction of the assembled value. Beta resells the kits to its dealers for assembly and use or sale.

#### Partner Objectives

Alpha bought Omega's shares mainly because of the following reasons:

- *Complementarity of Omega's products*: Alpha owned another company, in a different European country, which sold a complementary product to digitizers. Alpha's plan was to partially integrate the two companies' operations.
- *Cost savings possibilities*: The Omega JV is located in a relatively low cost part of western Europe.
- *Growth potential*: Over the past 10 years, Omega had grown at over 20% per year compounded.

Alpha invited Beta to join it in an Omega JV because of Beta's *unique resources and capabilities*. Beta produced the equipment of which digitizers were a part. Beta had a well-established brand name, a reputation for high-quality products, and a strong world-wide distribution network.

Beta eventually joined Alpha in this venture because of the three following considerations:

- *Product range*: Omega produced some digitizer models which Beta did not produce. Thus this JV demonstrated to Beta's dealers the company's commitment to produce the full range of products.

- The *location in Europe*: Omega provides a good, low cost place to produce.
- A *good business opportunity*: Due to Omega's characteristics and the local country and EC financial arrangements, the JV promises to generate a good return on investment.

### JV Agreement

In giving shape to the JV in the formal agreement, the question of who was actually controlling the JV was a major issue. This issue was raised both by differences in the objectives of each of the JV partners and by U.S. and EC regulations.

When Alpha bought Omega, Alpha had an enviable financial performance record. The corporation had a string of 160 quarters of ever-increasing profits, and an average 20% return on equity. In 1994, many financial analysts were of the opinion that Alpha had reached these levels of profitability at the expense of growth. Alpha management, therefore, made a commitment to growth, and they valued Omega's excellent 20% growth rate on a sizable sales base.

Alpha's desire for growth presented the first JV management challenge. Alpha could show Omega's sales growth as its own only if Omega became a consolidated company, meaning that Alpha had to own more than 50% of the Omega shares. Owning 50% or less of the shares would make Omega only an affiliated company, and financial consolidation would only be done at the profit and equity level. Omega's sales were particularly important to Alpha because they were expected to more than double over time when Beta moved their requirements to Omega's production lines. If Omega was set up as a 50/50 JV, the net loss to Alpha would be approximately 5-6 % of consolidated Alpha sales. Alpha needed both to own at least 51% of Omega and to be able to convince the SEC that it had control of the venture. Alpha's worry then

was that Beta would require that all Omega board decisions be unanimous. This operating arrangement would not satisfy the SEC's requirements for Alpha to control the JV. Further, Alpha managers were concerned that Beta management would not allow Alpha to have operating control of the JV. This concern was real. As one Omega manager put it:

[Beta management] concluded that a 49% venture with the other party having control with 2% more makes no sense, that it's a stupid thing to do. But [Beta's chairman] said to those of us who were negotiating the agreement, "If you can be assured that you have sufficient control I don't care what the ownership percentage is."

The chairman's support allowed the JV to be formed.

In order to show the SEC that Alpha had control of the JV, Beta management had to agree that majority approval was required for the annual plan, which included numbers of people to hire, pricing policies, and all decisions related to next year's operations. This meant that Beta basically agreed to have Alpha manage the Omega's operations.

Beta had some security valves, however. First, some decisions, mostly at the strategic level, were set up to require unanimous JV board agreement. Here are some examples of those decisions:

- additions to the product range that is outside the scope of the JV agreement;
- purchases from affiliated companies of Alpha and Beta;
- appointment of the chief executive of Omega;
- dissolution of any part of the business;
- entering into any JV agreements with other companies;
- capital expenditures above any threshold;
- significant changes in employee benefit plans;
- significant changes in product and production technologies.

Second, if Beta management believed a majority decision would clearly damage either Omega, Beta, or both, Beta had the right to buy all of Omega at a predetermined, fair-market-value price. An Omega manager formerly employed by Beta explained:

[Alpha] has a desire for the growth which is coming out of [Omega]. The last thing they want is [Beta] buying the whole thing. In fact, [Beta] offered to buy the whole company when the joint venture process was proceeding. But they weren't interested.

Third, a Beta employee was appointed as Vice President-Finance and member of the Omega Management Board. He was placed in this position so that he could monitor Omega's operations closely and learn how Alpha exercises its financial controls.

Getting the JV accepted by the EC required addressing anti-trust concerns. Omega is the largest digitizer producer in Europe, and Beta is the second largest digitizer producer in the world. These two facts caused the EC's Mergers and Acquisitions Task Force to feel uncomfortable. Alpha and Beta managers had to convince the Task Force that the venture was a concentrated JV which would promote, not hinder, competition in Europe. At the same time it was important to show that neither Alpha nor Beta controlled Omega, that the JV was under the two companies' joint control. Eventually the EC accepted the JV agreement which dictated shared control on operational matters and mutual agreement on more strategic matters.

#### Governance Structure

Omega's Management Board consists of a CEO and five vice-presidents. Five of the six Management Board members are local Omega people. The sixth, the VP-finance, is a Beta employee. The VP-finance has frequent contact with Beta management, while Omega's CEO has day-to-day contact with Alpha management.

The JV board, to which the Management Board reports, consists of three Alpha and three Beta representatives, but only one Alpha representative and one Beta representative have the voting power which reflects their company's ownership (51% or 49%). The JV board meets four times a year. In principle, the JV board has decisive power regarding everything. A typical four-hour board meeting might have the following items on the agenda: a one-hour update on financial results (problems, big jobs waiting, project approvals), a short update on capital programs, a half-hour on on-going and proposed engineering and product engineering programs, a half-hour on Beta's dealer concepts and how they might affect distribution of Omega products, a short discussion on exchange rates and hedging plans, and the rest of the meeting on other strategic issues that are topical.

In practice, the most important decisions the JV board makes are about strategic issues related to digitizer production and distribution. Examples of *strategic production decisions* that could involve the board are decisions about which products should be included in Omega's product lines, what dates new production should start or existing models should be redesigned, when new models should phase in, and how major engineering programs should be executed. The board also concerns itself with *distribution*. Alpha's and Beta's distribution strategies are fundamentally different, and these differences have caused friction.

To understand the distribution frictions, one must understand that Alpha is a collection of relatively autonomous electronics divisions. Sometimes the divisions transfer technology, but there is no 'Alpha brand.' Beta, on the other hand, sells Beta-brand products to its dealers. One of the main issues why Beta initially did not join Alpha in the Omega venture was that Beta did not want to sell products in competition with its dealers. Beta's managers view their company's

relationship with its dealers as a “sacred bond” that should not be jeopardized. In order to make the JV deal palatable, Beta proposed that its dealers should have the first right to own the distribution of Omega products in their territories. They proposed that Beta dealers could decide to become the marketing company for the smaller Omega dealers in their territories and thus control the margins they receive on sales of Omega products within their territories. This is a foundation of Beta’s dealer concept.

Thus, the Omega JV agreement specifies that Beta controls the distribution of Omega’s products. If a Beta dealer wants to take over the marketing and distribution of Omega’s products in his region, this dealer has to draw up a proposal (a business plan containing sales targets etc.) for the Board. Beta managers evaluate the dealers’ proposals. They then send the acceptable proposals to Omega managers who work out the details and make recommendations to the JV board. If the JV board decides not to accept a proposal which has been approved by Beta agreeing, it can only delay the deal for six months. At the end of the six month period, even if both partners maintain their position, the distribution of Omega products in the territory in question is turned over to the Beta dealer.

To conclude, the JV board has the right to decide virtually anything, but they tend to give Omega’s management considerable operational freedom. Most JV board meetings are not controversial. The most important reason for this attitude is that Omega’s performance is exceeding expectations, and nobody wants to upset what is going well. As an Omega manager put it:

As long as a company is running well, I think both parents pretty much want to keep their hands off, because if they start meddling with it and whether that causes it or not, if there are problems, then local management can say ‘if you hadn’t forced us to do these things, then...’

### Financial Accountability and Control

For external reporting purposes, Omega uses local country accounting standards. It also reports according to U.S. standards, and the resulting differences are usually not material. The company auditor is unanimously chosen by the JV Board. Omega has continued to use the same auditor as before the acquisition. It would have been costly to change, and nobody saw any reason to change.

The management systems and style at Omega are less formal than at Alpha and Beta. Prior to its acquisition, Omega was family-owned; it had an informal management culture; and it was growing very fast. Thus, for example, Omega does not have formal job categories, job grades, or job scales. Further, Omega does not have the information systems to which Alpha and Beta managers are accustomed. Omega does not have, for example, systems to calculate individual product costs or individual production line productivity. The lack of formalized policies, procedures, and systems causes the parents some concern.

Alpha managers take the lead in controlling Omega from a *financial* standpoint. Alpha, with its string of consecutive quarterly earnings increases to protect, is more short term performance-oriented than is Beta. Alpha managers have a reputation for tight cost control. Alpha managers expect short-to-medium-term performance targets to be achieved. Thus Omega's Management Board interacts frequently with Alpha managers regarding forecasts, overall financial statements, and high-level data which are easy to calculate, such as employment numbers, profit, gross margin, SG&A costs, and inventory turnover. Beta managers, on the other hand, come from a culture in which forecasts are not as much a fixed commitment; upper-level

managers recognize that planning assumptions may have changed along the way. This difference in culture or philosophy sometimes causes some frictions within the Omega's Management Board.

Beta managers exercises much control over *engineering and distribution* matters. Beta managers are greatly concerned Omega produce digitizers according to Beta's technical specifications, so Omega uses Beta's Quality and Materials Requirements Planning programs. Beta managers also watch Omega's costs because Beta pays Omega cost plus a fixed profit percentage for their digitizers. This profit percentage is fixed and equal for all products. Alpha is not heavily involved in operational matters at this moment, although this may change when Omega is given the opportunity to benefit from the technology in Alpha's related European company.

A new SAP system is being implemented to replace Omega's excessively manual systems and to improve Omega's financial and operational information systems. This project is one of the responsibilities of the VP-Finance (a Beta employee).

### Overall Performance

In its first two years of operation, the Omega IJV has been quite successful and, apparently, well-run. When asked about the reasons for the success, Omega's VP-Finance responded as follows:

The biggest weakness of joint ventures is that they rely too much on personal relationships between the people involved. The best fit of companies in a joint venture can fall apart if the people involved don't trust each other and don't constantly work on the relationship. That is the biggest danger: one partner thinks the other partner has some hidden objectives.

But right now I can't name any disadvantages of this joint venture. It is performing very well. It is more profitable than we thought it was going to be, and so far it has delivered more than both parties expected. Because of that, it makes the relationship pretty easy. Plus the people of [Alpha's] and of



[Beta's] side who negotiated the joint venture agreement are currently running the business. They both have therefore a vested interest within their own companies to demonstrate that they made a good decision to do this. The people on the [JV] board are the ones who negotiated the deal. That is a positive point. I myself was a part of the team which negotiated the deal. I was and am supportive.

## DISCUSSION

We have organized our synthesis of our findings from these three case studies by first describing the similarities among the control systems used in the three IJVs studied. Then we describe significant differences between/among the IJVs and tentative causal explanations of those differences.

### Control System Similarities

The control systems used at the NedCar, HSC and Omega IJVs have many similarities:

1. All the IJVs studied were formed when a JV agreement, a formal legal contract, was signed. These JV agreements have a number of common elements. They state the venture's objectives. They describe some obligations of the partners and the IJV personnel (e.g., JV location, corporate governance structures, financing and dividend policies, decision and conflict resolution processes, technical assistance and raw material supplies to be provided). They prohibit some actions (e.g., disclosure of sensitive IJV information). And they contain, or refer to, other contractual agreements, such as related to pricing of services provided by one partner to the IJV.

Almost all of the terms in the JV agreements can be classified as action controls. The terms mandate IJV or partner personnel to make certain decisions, or at least to follow specified decision processes, and they prohibit other actions deemed to be undesirable.

All of the agreements forming the IJVs studied here are quite detailed. Even so, they cannot address all the issues that will be faced. In describing the HSC JV agreement, Dr. Meijer, HSC's president said,

You really can't pre-negotiate every detail. Otherwise you'd never start the joint venture. Maybe you can identify 60% of the issues that will pop up. The other 40% will be a surprise. You must have trust between the partners or you will fail.

A VCC manager was even critical about some details that were included in the NedCar agreement. He said, "Legal guys write the contracts. But they are not operating guys who understand the operations. Sometimes what they write is 'mission impossible.'"

At Omega, the partners overcame this JV agreement problem by including operating personnel on the negotiation team and then by having the same personnel take part in managing the IJV. These people are highly motivated to demonstrate that this venture can be successful under the contractual terms they played a part in negotiating.

2. The IJVs are governed by a board of directors comprised of partner representatives the numbers or voting rights of whom are proportional to the partners' ownership shares. In terms of the IJV contracts, the boards play significant action- and results-control roles. Their action-control role involves either making or approving all major financing, investment, and personnel decisions. They employ results controls by monitoring their IJV's performance results on a regular basis.

Because of time limitations, the boards focus their monitoring attention on relatively few performance indicators. Some of most important of these indicators are financial, particularly the cost-based transfer price at NedCar, sales and profits at HSC, and profits and gross margins at

Omega. Thus it can be said that accounting data, which provide key, summary monitoring indicators, play important roles in controlling an IJV.

As in most organizations, however, financial measures do not offer a complete solution. Partners and managers at all the IJVs find it necessary also to monitor sets of non-financial performance indicators. For example the NedCar board frequently monitors production defects, delivery times, and employee suggestions. The Omega board monitors the number and kind of production problems, engineering project performance, and distribution complaints.

3. The partners exercise the right to appoint key employees to the IJV. This is an important form of personnel/cultural control. Everyone expects the appointed employees to have allegiances to the appointing partner, as well as to the IJV entity.

The HSC and Omega examples show that partners do not need to appoint large numbers of their loyalists to have a significant positive control effect. Tosoh has appointed only six of its employees to the HSC JV. Tosoh managers are comfortable with their company's minority representation because they recognize that some of their six appointees are in positions that allow them to be well informed about all of HSC's significant activities. At Omega, all but one member of the Board are local IJV employees who do not represent either of the two partners. Beta has one representative--the VP-Finance, and one of his admitted roles is to assure Beta management that, "... on balance, no funny business is going on." Alpha has no on-site representatives at Omega, but Omega's CEO takes day-to-day input from Alpha's management so that Alpha can be assured that operations are proceeding according to its wishes.

4. All partners monitor their IJV's overall financial performance. This monitoring occurs regardless of the partner's primary objective(s) for the IJV. Some IJV partners (e.g., the Dutch

State at NedCar) have only a financial objective, so it is natural that they monitor financial performance. Other partners have other primary incentives. For example, Tosoh's primary incentives (at HSC) were for access to an important raw material and knowledge about a new manufacturing process and new product and labor markets. Nonetheless, Tosoh managers monitor financial performance carefully. All partners pay attention to financial objectives both because these objectives have some importance, even if they are not among the most important, and because the financial information is readily available and easy to monitor.

5. Cost accounting is important. Cost allocations are a prominent cause of disputes and discussions in two of the IJVs--NedCar and HSC. Cost allocations may be a common focal point for disagreements in IJVs. Dr. Emmo Meijer, HSC's president believes so. He said:

Most joint ventures fail because of disagreements about cost allocations. The partners spend too much of their time discussing costs and lose sight of the important business issues.

Conversely, financial accounting rules seem not to create significant disputes. Which country's rules to use seems not to be an issue. All IJVs apply local financial accounting rules. The partners seem to be able to adapt reasonably easily to the foreign accounting rules.

#### Control System Differences and, Tentatively, Their Causes

Despite the significant similarities, the NedCar, HSC and Omega control systems are far from identical. Below we describe three significant control system differences related to control foci, control tightness, and mechanisms for the resolution of conflicts among partners. We also provide tentative explanations of the causes of each of these differences.

1. One important control-related difference among these three IJVs, which is an element of their use of control mechanisms, is their method of settling disputes between partners. At HSC,

no special arrangements were made for conflict resolution. The partners' only recourse is to the legal system, but this costly option has never had to be used. At NedCar, conflicts are discussed by a large number of committees. If consensus cannot be reached, the committees may decide to submit the issue to arbitration, although the arbitration has never been used. At Omega, Alpha, (the 51% owner) would seem to be able to dominate the decision making. (Indeed, accounting rules for consolidation necessitated the appearance of this level of control.) However, Beta, the 49% owner, has two important legal protections. It has the option to buy the IJV at a predetermined price when it believes its interests and/or the IJV's interests are clearly damaged by Alpha's decision making. And if Alpha makes decisions that in Beta managers' minds harm dealer contracts, Beta has the right to delay the decisions for six months delay and, subsequently, to reverse it.

These differences in conflict resolution processes seem to be caused by partner expectations as to the number of conflicts they will face and, particularly, the extent to which the partners trust each other. HSC's lack of conflict resolution provisions in the IJV contract suggests that the partners do not expect significant conflicts. NedCar's partners clearly expected a number of conflicts to occur, and they established relatively elaborate internal resolution processes to try to get the conflicts resolved before outside intervention is necessary. Omega's partners defined just a few potential areas of important conflict for which Beta will not accept any risk of getting a disadvantageous solution. They have dealt with them by giving Beta specific contractual protection.

2. The partners' control foci differ significantly. As was mentioned earlier, all partners monitor their IJV's overall performance, but partners are particularly active in monitoring IJV

activities in areas where they believe they have superior knowledge and capabilities. This knowledge and expertise seems to be much more important than the partners' objectives for the IJV.

This insight can be illustrated easily with examples from the IJVs studied. For example, at NedCar, MMC personnel are intensively involved in the improvement of operational control of production processes, which generally involves instructing IJV production personnel on how to handle newly designed automated production equipment. The Dutch State, on the other hand, is not actively involved in the management. It has no automaking operational expertise. At HSC, Tosoh has the lead in monitoring the use of its enzymatic aspartame technology, while DSM is in charge of controlling the fine chemical production processes. At Omega, Beta exercises direct control of the production processes, while Alpha is primarily engaged with and responsible for financial control of the IJV.

These control foci may change over time once the transfer of knowledge from the partners to the IJVs is completed. After Tosoh sells its enzymatic aspartame technology to HSC, other arrangements about controlling the use of this technology will be made. When NedCar assimilates MMC's car-making technology and knowledge, other local workers can take over MMC's control activities. This will allow MMC the opportunity to use a more arm's length mode of control focused on the monitoring of results measures. Similarly, when Beta learns enough about Alpha's financial control systems, it will no longer be necessary to have only Alpha controlling the day-to-day businesses of the IJV.

3. The degree of control tightness the partners exercise over the IJVs also varies significantly. Of the three IJVs studied here, NedCar operates under the tightest control system. One important

element of the tight control is the IJV's financial responsibility structure. HSC and Omega are profit centers, while NedCar is a cost center. This financial-responsibility-center choice translates directly into control tightness. The HSC and Omega managers are given considerable autonomy and are held accountable for everything which affects the profitability of the IJV. The NedCar managers' authority and accountability is for production-oriented factors--product costs, product quality, and delivery schedules—only. They are not given authority in the areas of, for example, product design and marketing. NedCar managers are also controlled more tightly than are managers at the other IJVs because their performance is closely monitored with an extensive array of performance indicators, and NedCar's decision processes are more complex and elaborate.

Why are NedCar managers controlled so tightly? There are several reasons. Probably most important is the fact that NedCar's commercial partners (MMC and VCC) are quite cautious of each other. The cars they are producing are aimed at the same market segment. Both partners are rightly concerned that their partner could acquire knowledge that could be used as a competitive weapon against them. The production technologies used in NedCar can be easily applied in the parents' other production facilities as well, and the partners' marketing data would be quite valuable to the other partner. Thus, NedCar managers are not even allowed access to the partners' marketing data. This concern, which is a form of lack of partner trust, leads to the sharp constraints placed in the IJV's autonomy. It also has led to the implementation of more elaborate dispute resolution processes which, at NedCar, often involve large committees and independent accounting firms.

Four other factors also seem to affect the degree of control tightness the partners exercise over the IJVs. One is the parents' corporate management style. Tosoh monitors HSC activities much more intensively than does DSM. This difference may simply be due to Tosoh's management style. Tosoh is a much more centralized organization than DSM. DSM uses a traditional, decentralized business unit operating style which allows operating managers considerable autonomy if they achieve their business plans. Tosoh's decisions are usually made by a single top-level manager, after intensive "consensus discussions" are held for information-sharing purposes. Tosoh's monitoring of HSC may be necessary to gather information to inform the central decision maker. DSM's top management does not have perceive the same need to be informed about such detail.

The other Japanese corporation studied, MMC, similarly, seemed more detail oriented than its European commercial partner, VCC. This suggest that national culture is a possible explanatory factor. The management style of Japanese managers may be, in general, more detail oriented than that of their European counterparts. But management style can vary at both the national and corporation levels and, in fact, we observed a similar control-tightness difference at Omega. Alpha, which has a relatively centralized management style, oversees the financial control system at Omega and does not allow Omega's departments to have their own departmental budgets. Beta representatives reported to us they would allow greater decentralization of the financial decision making.

Second, the uniqueness and importance of the resources and capabilities which the partners provide to the IJV seems to affect control tightness. For example, after Tosoh transferred its production technology and knowledge to HSC, after a few years of involvement in the IJV,



Tosoh managers abandoned their tight, detailed control of HSC's aspartame production systems. At NedCar, MMC's production technology knowledge has not yet been effectively transferred, so MMC still controls NedCar's production activities very closely.

Third, the fit between the IJV's products and the rest of the parents' businesses seems to affect control tightness. HSC produces a product which neither DSM nor Tosoh can make by themselves and which does not compete with any of the partners' existing products, so the partners can allow the IJV to operate reasonably autonomously. At Omega, however, Beta is placing its brand name and its dealer distribution concept at risk. Beta managers therefore feel obligated to exercise close control over the Omega operations with which they are concerned to protect their core businesses.

Fourth, the IJV's recent performance seems to affect control tightness. At Omega, the control exercised by the parents is relatively loose. The IJV managers have considerable operating autonomy. The primary reason for the hands-off control is that Omega has been outperforming its parents' expectations. This superior performance lessens both partners' motivations to interfere in Omega's operations.

Finally, the partners' needs for short-term performance from the IJV seems to affect control tightness. For example, in HSC's early years (up until 1991), Tosoh was sustaining heavy corporate losses. Tosoh's president stated publicly that he wanted HSC to make a profit as soon as possible, and Tosoh's monitoring of HSC's situation was intense. Since then, however, Tosoh's day-to-day involvement in HSC's business has been sharply reduced ("become more arms-length"). The prime causes: HSC has achieved all its profit budgets since 1991, and by 1994

HSC had grown to be Tosoh's most profitable unit. It should be noted, though, that HSC's return on investment is still below what both parents originally expected from it.

## CONCLUSION AND SUGGESTIONS FOR FUTURE RESEARCH

This study was designed to explore the control problems faced by IJV partners and the control system choices the partners make to address those problems. In an intensive field study of three large IJVs, we found multiple control-system similarities. All three IJVs had, for example, a formal joint venture agreement and a board of directors, and all partners monitored overall IJV results. But we also found some significant differences. Figure 4 highlights in chart format the most important causal links we propose as explanations of these differences. Each arrow represents a proposed causal effect on an important control system element. In the discussion of findings, we tried to give some tentative explanations for the differences we observed.

We are comfortable with the control system approach we took. Building on the findings of prior research, we described IJV control systems along the dimensions of control mechanisms, control focus, and control tightness. Those dimensions seem to capture a substantial amount of the total variance in IJV control systems.

Our findings regarding the factors which affect one or more control system dimensions partly confirmed and elaborated on our prior beliefs, but we also discovered some new findings. In particular, we found that all partners monitored their IJV's overall financial results. However, the partners' more in-depth involvement in the IJV's management (which can be interpreted as control tightness) was not in areas where they had the greatest control concerns; it was in areas where they thought their superior knowledge and capabilities provided them the greatest potential for contribution. Other factors which we had not identified prior to the study--management style

and needs for short-term performance--also seemed to have significant effects on control tightness.

This study only scratches the surface of this complex area, however. Other control system elements which are important in some IJV settings undoubtedly remain to be discovered. Further, as research work advances in this area, certainly better classifications, descriptors and, eventually, measures of the various control elements will be developed.

Further research is also needed to identify more of the factors which affect the control system choices and their effectiveness. In the course of our literature search, we identified several other potentially important situational factors which did not vary significantly between the cases studied here. One is the partners' ownership shares. Some IJVs have partners with dramatically different ownership shares, but we studied only IJVs with almost equal ownership shares. Unequal ownership shares may have significant effects on IJV decision making styles and dispute resolution processes. Another potentially important situational factor which did not vary in the IJVs we studied is the size of the IJV relative to that of the partners. Each of the IJV we studied is small in the total portfolio of their parent companies. This relatively small size probably creates a tendency for the parents to adopt a looser, more management-by-exception-oriented form of control. Finally, we should point out that we studied only developed-country IJVs. The controls used in IJVs in less developed countries are likely to be different. The partners are likely to have different motives, and the partners' degree of trust of, particularly, the competence of the managers in the less developed country is likely to be relatively low.

While many interesting questions regarding the use of controls in IJVs remain to be studied, those interested in this line of research should recognize that studying IJVs is relatively

difficult research to do. Research access must be negotiated with each of the IJV partners as well as the IJV managers. No matter how much the partners and managers trust each other, they are inevitably guarding some information they would rather their partner did not know. The partners and managers are also concerned about releasing information about the IJV which either might be useful to their competitors or which their partners' might believe would be useful to their competitors. The IJV agreement, in particular, seems to contain some elements which make it highly confidential. We were unable to get a copy of the agreement from any of the IJVs we studied, despite the central importance of the agreement to our research topic and the excellent cooperation we received from all parties regarding all our other requests. So researchers moving into this area must recognize that the people from whom they would like to collect information are very cautious about what they reveal to researchers and even whether they want to risk talking to researchers. This caution makes the data collection more difficult and the research projects more risky. Nonetheless, given the large and growing importance of the IJVs and the importance of their control systems, someone must take the risk. More research effort must be invested in this area.

## NOTES

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- <sup>1</sup> The cooperation can also be achieved by other means than equity JVs. A wide variety of contractual arrangements, often referred to as "non-equity joint ventures," can be used to foster cooperation between partners. Examples of non-equity JVs are licensing, distribution and supply agreements, or technical assistance and management contracts.
- <sup>2</sup> An exclusive use of personnel/cultural controls can rarely provide tight control. It is rarely possible merely to hire some good people and, without applying and constraints or using any monitoring, have them do a reliably good job. The natural overlap between individual and organizational objectives is imperfect and unstable, and the impending divergence between those objectives is very difficult to observe. Information as to how to identify good employees--how factors such as education, experience, and personality predict performance--is not reliable. The effectiveness of the steps that might be taken to increase the strength of personnel controls (e.g., training) is also very difficult to assess. And the organizational cultures that can sometimes be created to guide behaviors are also imperfect and unstable. So while personnel/cultural controls often provide some benefits, they can break down very quickly if demands, opportunities, or needs change, and they provide little or no warning of failure. While personnel/cultural controls can rarely provide tight control by themselves, however, they can often provide useful supplements to action- or results-control dominated systems.
- <sup>3</sup> This was done by asking the partners their perception of the JV performance. If one of the partners did not judge the venture to be a success, it was coded as not being a mutual success.
- <sup>4</sup> Disguised name. The joint venture company and its parents did not want their identities disclosed. Certain other facts and data are also disguised.
- <sup>5</sup> It has already been used in contracts between NedCar and VCC, and in contracts between NedCar and Renault.

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**Figure 1**  
**Types of Control Mechanisms Classified by the Object of Control**  
 (with examples which might apply to IJVs)

<u><b>Action Controls</b></u>	<u><b>Results Controls</b></u>	<u><b>Personnel/Cultural Controls</b></u>
<ol style="list-style-type: none"> <li>1. Require adherence to specific actions defined in legal contracts.</li>   <li>2. Require adherence to pre-specified policies and procedures (with checking by auditors and penalties for non-adherence).</li>   <li>3. Review and approve certain planned decisions (e.g., proposed investments).</li> </ol>	<ol style="list-style-type: none"> <li>1. Set performance targets and monitor performance reports. Ask for explanations and give advice where appropriate.</li>   <li>2. Set performance targets and monitor performance reports. Intervene when necessary.</li>   <li>3. Set performance targets and promise and provide rewards for good performance.</li> </ol>	<ol style="list-style-type: none"> <li>1. Select partner(s) who can be trusted (e.g., reliable history, shared management philosophy).</li>   <li>2. Place qualified, loyal personnel in key operating positions.</li>   <li>3. Require specified training.</li> </ol>



**Figure 2**  
**Motives and Fundamental Objectives of Strategic Business Alliances**  
(listed in order of prevalence found by Hung, 1992)

1. Gain access to local market
  2. Become 'global' more quickly
  3. Share the business risk
  4. Overcome trade barriers
  5. Develop cultural familiarity
  6. Minimize capital investment
  7. Stabilize earnings
  8. Share regional markets
  9. Reduce cost of product development'
  10. Make use of foreign labor
  11. Generate new ideas to stimulate internal innovation
  12. Increase contribution to the company's fixed investments
  13. Gain political protection
  14. Reduce/share cost of research
  15. Reduce competition
  16. Satisfy personal ambition
  17. Acquire foreign technology
  18. Gain knowledge on how other companies manage
  19. Circumvent investment restrictions
  20. Integrate the company's operations
  21. Make use of under-utilized equipment
  22. Secure material supplies
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**Figure 3**  
**Illustration of the NedCar Solidarity Principle**

	Partner A	Partner B
Normal volume	90,000 cars	90,000 cars
Produced in year X	85,000 cars	92,000 cars
Variable cost payments	85,000 x std. variable cost	92,000 x std. variable cost
Fixed cost payments	88,000 x std. fixed cost	92,000 x std. fixed cost
<b>Result</b>	<b>2,000 x fixed cost is paid by partner B to partner A</b>	

Note: The figures used in this table are heavily disguised.

Figure 4  
Factors Explaining the Most Important Differences in Control Systems  
Used In Three International Joint Ventures







