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COMPETITION FOR COMPETENCE AND INTER-PARTNER LEARNING WITHIN INTERNATIONAL STRATEGIC ALLIANCES

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Global competition highlights asymmetries in the skill endowments of firms. Collaboration may provide an opportunity for one partner to internalize the skills of the other, and thus improve its position both within and without the alliance. Detailed analysis of nine international alliances yielded a fine-grained understanding of the determinants of inter-partner learning. The study suggests that not all partners are equally adept at learning; that asymmetries in learning alter the relative bargaining power of partners; that stability and longevity may be inappropriate metrics of partnership success; that partners may have competitive, as well as collaborative aims, vis-à-vis each other; and that process may be more important than structure in determining learning outcomes.

THE RESEARCH QUESTION

A skills-based view of the firm

It is possible to conceive of a firm as a portfolio of core competencies on one hand, and encompassing disciplines on the other, rather than as a portfolio of product-market entities (Prahalad and Hamel, 1990). As technology bundles, core competencies make a critical contribution to the unique functionality of a range of end-products. An example is Honda's expertise in powertrains, which is applied to products as diverse as automobiles, motorcycles, generators, and lawn mowers. Encompassing disciplines include total quality control, just-in-time manufacturing systems, value engineering, flexible manufacturing systems, accelerated product development, and total customer service. Such disciplines allow a product to be delivered to customers at the best possible price/performance trade-off. Core competencies and value-creating disciplines are precisely the kinds of firm-specific skills for which there are only imperfect external markets, and hence form the *raison d'être* for

the multinational enterprise (Buckley and Casson, 1985; Caves, 1971; Teece, 1981).

Conceiving of the firm as a portfolio of core competencies and disciplines suggests that inter-firm competition, as opposed to inter-product competition, is essentially concerned with the acquisition of skills. In this view global competitiveness is largely a function of the firm's pace, efficiency, and extent of knowledge accumulation. The traditional 'competitive strategy' paradigm (e.g. Porter, 1980), with its focus on product-market positioning, focuses on only the last few hundred yards of what may be a skill-building marathon. The notion of competitive advantage (Porter, 1985) which provides the means for computing product-based advantages at a given point in time (in terms of cost and differentiation), provides little insight into the process of knowledge acquisition and skill building.

Core competencies and value-creating disciplines are not distributed equally among firms. Expansion-minded competitors, exploiting such firm-specific advantages, bring the skill deficiencies of incumbents into stark relief. The present

study was unconcerned with why such discrepancies in skill endowments exist, but was very concerned with the role international strategic alliances might play in effecting a partial redistribution of skills among partners. While 'globalization' has been widely credited for provoking a shift to collaborative strategies (Ghemawat, Porter and Rawlinson, 1986; Hergert and Morris, 1988; Ohmae, 1989; Perlmutter and Heenan, 1986), the ways in which strategic alliances either enhance or diminish the skills which underlie global competitiveness have been only partially specified. *The goal of the present research was to understand the extent to which and means through which the collaborative process might lead to a reapportionment of skills between the partners.*

While skills discrepancies have been recognized as a motivator for international collaboration (Contractor and Lorange, 1988; Root, 1988), the crucial distinction between acquiring such skills in the sense of gaining *access* to them—by taking out a license, utilizing a subassembly supplied by a partner, or relying on a partner's employees for some critical operation—and actually *internalizing* a partner's skills has seldom been clearly drawn. This distinction is crucial. As long as a partner's skills are embodied only in the specific outputs of the venture, they have no value outside the narrow terms of the agreement. Once internalized, however, they can be applied to new geographic markets, new products, and new businesses. For the partners, an alliance may be not only a means for trading access to each other's skills—what might be termed *quasi-internalization*, but also a mechanism for actually acquiring a partner's skills—*de facto* *internalization*.

A conception of strategic alliances as opportunities for *de facto* internalization was suggested during a major research project on 'competition for competence' in which the author participated (Prahalad and Hamel, 1990). In that study managers often voiced a concern that, when collaborating with a potential competitor, failure to 'out-learn' one's partner could render a firm first dependent and then redundant within the partnership, and competitively vulnerable outside it. The two premises from which this concern issued seemed to be that (1) few alliances were perfectly and perpetually collusive, and (2) the fact that a firm chose to collaborate with a present or potential competitor could not be

taken as evidence that that firm no longer harbored a competitive intent *vis-à-vis* its partner. Indeed, when it came to the competitive consequences of inter-partner learning, the attitudes of some managers in the initial study had shifted from naiveté to paranoia within a few short years. This seemed to be particularly true for managers in alliances with Japanese partners. What was lacking was any systematic investigation of the determinants of inter-partner learning.

METHODOLOGY

Thus the research objective was theory development rather than theory extension. The parameters which controlled the choice of research design were: (1) a belief that existing theoretical perspectives illuminated only a small part of the collaborative phenomenon; (2) a desire to identify the determinants of a certain class of collaborative outcomes, i.e. inter-partner learning; and (3) the consequent need for observation that was administratively fine-grained, multi-level and longitudinal. These considerations made inevitable the choice of a research design based on the principles of grounded theory development (Glaser and Strauss, 1967; Mintzberg, 1978; Pettigrew, 1979; Seyle, 1964). Because patterns of causality are extremely complex in most real-world administrative systems, traditional deductive-analytic methodologies force the researcher to declutter the phenomenon by: (1) substituting crude proxies for difficult-to-measure determinants or outcomes; (2) assuming away some of the multidimensionality in causal relationships; and/or (3) narrowing the scope of research. In doing so, much of the potential value of the research is lost. The problem is not that the resulting theories are under-tested (i.e. they fail a test of rigor), but that they are under-developed (i.e. they are so partial in coverage that they illuminate only a fragment of the path between choice, action and outcome). For the purposes of this study a decision was made not to prematurely prune the collaborative problem into a shape that would fit within the constraints of a deductive methodology.

Grounded theory development proceeded in two stages. In the first stage the goal was to illuminate the basic dimensions of a theory of

inter-partner learning. To this end an attempt was made to maximize underlying differences among cases in order to discover those concepts or theoretical categories that were most universal (where the data across cases were most similar), and those that were entirely idiosyncratic (where the data across cases were most divergent). Interviews were initially conducted with 74 individuals across 11 companies concerning nine international alliances. The number of individuals interviewed within each company ranged from three to 11, with six the average. Interviews were typically 2 hours in length, though a few consumed an entire day. Given concerns over confidentiality on the part of participating firms, several of the participating firms requested anonymity. The 11 firms in the study ranged in size from under \$500 million in sales to more than \$50 billion. Four of the companies were domiciled in the United States, four within the European Community, and three in Japan. Each firm derived at least 30 percent of its revenue from outside its domestic market. Industries covered included aerospace, chemicals, semiconductors, pharmaceuticals, computers, automobiles, and consumer electronics. In every company managers with responsibility for strategic alliances from both divisional and business unit levels were interviewed. Approximately 40 percent of the interviews were with functional supervisors or first-line employees who worked regularly across the collaborative membrane. Seven of the participating firms had a partner within the sample of 11 firms; in this way both 'sides' of three on-going partnerships were observed. Thus inter-case diversity was achieved along the dimensions of partner nationality and industry affiliation, and agreement type (equity-based joint ventures versus long-term co-marketing, design and supply relationships).

The anxiety over asymmetric learning expressed by managers in the earlier study was confirmed in the first stage interviewing process. Concerns were of three broad types: (1) concern over the *intent* of partners (collaborative versus competitive, internalization of partner skills versus mere access); (2) concern over the 'openness' of the firm to its partner—what came to be termed *transparency*; and (3) concern over firm's ability to actually absorb skills from its partner, i.e. *receptivity*. As the core categories that came to constitute the formal internalization

model, *intent*, *receptivity*, and *transparency* were identified as prospective determinants of inter-partner learning. Also emerging from the first round of interviewing was a proposed linkage between learning and inter-partner bargaining power, and, consequently a notion of collaboration as a 'race to learn.'

Having illuminated an overarching formal model, the second stage of research aimed at understanding in detail the processes and mechanisms through which intent, receptivity, and transparency impacted on learning outcomes. This was accomplished through a second round of case-based research, termed 'theoretic sampling' (Glaser and Strauss, 1967: 45–77), because the choice of which cases to compare is directed by the emerging theory. By selecting cases where the researcher hoped to find both maximum and minimum variance along the dimensions of the core model, it was possible to amplify the core model. A further criterion to be satisfied was the need to gain even deeper, more extensive access to the individuals involved in the process of collaborative exchange than had been achieved in first stage interviewing, and to ensure that access was gained to both sides of the collaborative membrane. This was deemed necessary if the researcher was to have any hope of measuring, however crudely, the migration of skills between partners, the criticality of those skills (and hence the extent to which they should be valued and protected or sought by each partner), and ultimately, the competitive consequences of those skill transfers.

These requirements were met in the following ways. Two partnerships, involving five firms (one partnership was triadic), were selected for intensive study. Inter-case differences were minimized to the extent that both partnerships comprised a European firm (or firms) on one side, and a Japanese firm on the other. Thus it was possible to compare the behavior of the European firms, one with another, and the behavior of the Japanese partners, one with another. Both alliances were more than 5 years old at the time the study commenced, both had received substantial media attention, and were regarded as two of the most important and 'successful' Euro-Japanese alliances. Both partnerships were set within the electronics industry.

At the same time there were potentially significant differences between the cases: one

centered around professional products with a 3–5-year life cycle, and the other around a consumer product with a 6–12-month life-cycle. One of the European partners had a clear corporate strategy for core competence building, the others did not. The locus of activity for one partnership was based in Europe, the other in Japan. One partnership involved regular and intensive collaboration across the membrane, the other periodic inter-working. One partnership was a joint equity venture, the other a mixture of long- and short-term development and supply contracts. And of course there was the opportunity to compare the behavior of partners based in very different national contexts. The first stage interview process, as well as much of the anecdotal evidence (e.g. *Business Week*, 1989), suggested this difference in national origin might be crucial to learning outcomes.

Each of the five partners agreed to provide access to facilities as well as to key managers and operating employees. Each of the partners also agreed to submit to a minimum of 40 hours of interviewing. While single, week-long research visits were made to the Japanese partners, repeated research visits, extending over 2 years, were made to the European partners. Interviewing continued until saturation of core categories—intent, transparency, and receptivity—was achieved, i.e. new properties of the categories were no longer emerging. Relying on archival data, as well as interviews with industry analysts, two detailed industry briefing notes were prepared. The detailed research reports which summarize the output of the second stage interviewing are contained in Hamel (1990).

FINDINGS

The six major propositions which grew out of the data are summarized in Table 1. They will be discussed in turn, and the evidence which produced them briefly summarized.

Competitive collaboration

Though not always readily admitting it, several partners clearly regarded their alliances as transitional devices where the primary objective was the internalization of partner skills. As one Japanese manager put it:

We've learned a lot from [our partner]. The [foreign] environment was very far from us—we didn't understand it well. We learned that [our partner] was very good at developing. Our engineers have learned much from the relationship.

A European manager stated that:

[Our partner] was passionately hungry to find out the requirements of the users in the markets they wanted to serve. We were priming the market for them.

A manager in a Japanese firm that had to contend with a persistently inquisitive European partner believed that:

The only motivation for [our European partner] is to get mass manufacturing technology. They see [the alliance] as a short circuit. As soon as they have this they'll lose interest.

This manager believed that the partner would see eventual termination of the agreement as evidence of successful learning, rather than of a failed collaborative venture.

While no manager in the study claimed a desire to 'deskill' partners, there were several cases in which managers believed this had been the outcome of the collaborative process. In these cases the competitive implications of unanticipated (and typically unsanctioned) skill transfers were clearly understood, albeit retrospectively. The president of the Asia-Pacific division of an American industrial products company was in no doubt that his firm's Japanese partner had emerged from their 20-year alliance as a significant competitor:

We established them in their core business. They learned the business from us, mastered our process technology, enjoyed terrific margins at home, where we did not compete in parallel, and today challenge us outside of Japan.

The divisional vice-president of a Western computer company had a similar interpretation of his firm's trans-Pacific alliance:

A year and a half into the deal I understood what it was all about. Before that I was as naive as the next guy. It took me that long to see that [our partner] was preparing a platform to come into all our markets.

Table 1. A theory of inter-partner learning: Core propositions

<p>1. <i>Competitive collaboration</i></p> <p>(a) Some partners may regard internalization of scarce skills as a primary benefit of international collaboration.</p> <p>(b) Where learning is the goal, the termination of an agreement cannot be seen as failure, nor can its longevity and stability be seen as evidence of success.</p> <p>(c) Asymmetries in learning within the alliance may result in a shift in relative competitive position and advantage between the partners outside the alliance. Thus some partners may regard each other as competitors as well as collaborators.</p> <p>2. <i>Learning and bargaining power</i></p> <p>(a) Asymmetries in learning change relative bargaining power within the alliance: successful learning may make the original bargain obsolete and may, <i>in extremis</i>, lead to a pattern of unilateral, rather than bilateral, dependence.</p> <p>(b) The legal and governance structure may exert only a minor influence over the pattern of inter-partner learning and bargaining power.</p> <p>(c) A partner that understands the link between inter-partner learning, bargaining power, and competitiveness will tend to view the alliance as a race to learn.</p> <p>3. <i>Intent as a determinant of learning</i></p> <p>(a) The objectives of alliance partners, with respect to inter-partner learning and competence acquisition, may be usefully characterized as internalization, resource concentration, or substitution.</p> <p>(b) An internalization intent will be strongest in</p>	<p>firms which conceive of competitiveness as competence-based, rather than as product-based, and which seek to close skill gaps rather than to compensate for skills failure.</p> <p>(c) A substitution intent pre-ordains asymmetric learning; for systematic learning to take place, operators must possess an internalization intent.</p> <p>4. <i>Transparency as a determinant of learning</i></p> <p>(a) Asymmetry in transparency pre-ordains asymmetric learning: some firms and some skills may be inherently more transparent than others.</p> <p>(b) Transparency can be influenced through the design of organizational interfaces, the structure of joint tasks, and the 'protectiveness' of individuals.</p> <p>5. <i>Receptivity as a determinant of learning</i></p> <p>(a) Asymmetry in receptivity pre-ordains asymmetric learning: some firms may be inherently more receptive than others.</p> <p>(b) Receptivity is a function of the skills and absorptiveness of receptors, of exposure position, and of parallelism in facilities.</p> <p>6. <i>The determinants of sustainable learning</i></p> <p>Whether learning becomes self-sustaining—that is, whether the firm eventually becomes able, without further inputs from its partner, to improve its skills at the same rate as its partner—will depend on the depth of learning that has taken place, whether the firm possesses the scale and volume to allow, in future, amortization of the investment needed to break free of dependence on the partner, and whether the firm possesses the disciplines of continuous improvement.</p>
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Yet another manager felt a partner had crossed the line distinguishing collaboration from competition:

If they were really our partners, they wouldn't try to suck us dry of technology ideas they can use in their own products. Whatever they learn from us, they'll use against us worldwide.

Recognizing the potential danger of turning collaborators into competitors, a senior executive in a Japanese firm hoped his firm's European partners would be 'strong—but not too strong.'

The proposition that partners possessing parallel internalization and international expansion goals would find their relationships more conten-

tious than partners with asymmetric intents arose, in part, from observing the markedly different relationships that existed between three partners in a triadic alliance. The British firm in the alliance, possessing neither an internalization intent nor global expansion goals, enjoyed a placid relationship with its Japanese partner. However, the French and Japanese firms in the alliance, each possessed of ambitious learning and expansion goals, were often at loggerheads. A technical manager in the Japanese firm remarked that:

The English were easier to work with than the French. The English were gentlemen, but the French were [not]. We could reach decisions

very quickly with the English, but the French wanted to debate and debate and debate.

This seemed to be a reaction to the difficulty of bargaining with a partner who possessed equally ambitious learning goals.

In general, whenever two partners sought to extract value in the same form from their partnership—whether in the form of inter-partner learning benefits or short-term economic benefits, managers were likely to find themselves frequently engaged in contentious discussions over value-sharing. The relationships where managers were least likely to be troubled by recurring arguments over value appropriation were those where one partner was pursuing, unequivocally, a learning intent and the other a short-term earnings maximization intent. In such relationships—there were three—one partner was becoming progressively more dependent on the other. That the British firm mentioned above ultimately withdrew from the business on which the alliance was based suggested a fundamental proposition: just as contentiousness does not, by itself, indicate collaborative failure (some managers recognized they had to accept a certain amount of contentiousness as the price for protecting their core skills and gaining access to their partner's), an abundance of harmony and good will does not mean both partners are benefiting equally in terms of enhanced competitiveness. Collaborative success could not be measured in terms of a 'happiness index.'

Learning and bargaining power

The link between learning and bargaining power emerged clearly in several cases, one of which is briefly summarized here. A European firm in the study had entered a sourcing agreement with a Japanese partner in the mid-1970s, and later, partly through the use of political pressure, had succeeded in enticing the Japanese partner into a European-based manufacturing joint venture to produce a sophisticated electronics product that had, heretofore, been sourced by the European firm from Japan. At the time the joint venture was entered, the European firm established a corporate-wide goal to gain an independent, 'worldclass,' capability to develop and manufacture the particular product. This was seen as part of a broader corporate-wide effort

to master mass manufacturing skills that were viewed as crucial to the firm's participation in a host of electronics businesses. Over the next 7 years, the European firm worked assiduously to internalize the skills of its Japanese partner. By the late 1980s the firm had progressed through six of the seven 'steps' it had identified on the road from dependence to independence—where the journey began with a capability for assembling partner-supplied sub-assemblies using partner-specified equipment and process controls, and ended with a capability for simultaneous advance of both product design and manufacturing disciplines (i.e. design for manufacturability, component miniaturization, materials science, etc.), independent of further partner technical assistance.

In interviews with both the European firm and its Japanese partner, it became clear that the bargaining power of the Continental firm had grown as its learning had progressed. For the European firm, each stage of learning, when complete, became the gateway to the next stage of internalization. Successful learning at each stage effectively obsolesced the existing 'bargain,' and constituted a *de facto* query to the Japanese partner: 'Now what are you going to do for us?' As the firm moved nearer and nearer its goal of independence, it successively raised the 'price' for its continued participation in the alliance. The Japanese partner also learned through the alliance. Managers credited the venture with giving them insight into unique customer needs and the standards-setting environment in Europe. However, the Japanese firm could not easily obsolesce the initial bargain; this due not to any learning deficiency on its part, but to the difficulty of unwinding a politically visible relationship.

The notion of collaboration as a race to learn emerged directly from the interview data. As one Western manager put it:

If they [our partner] learn what we know before we learn what they know, we become redundant. We've got to try to learn faster than they do.

Several Western firms in the study seemed to have discovered that where bargaining power could not be maintained by winning the race to learn, it might be maintained through other means. In a narrow sense managers saw collaboration as a race to learn, but in a broader sense

they saw it as a race to remain 'attractive' to their partners. A European manager stated:

You must continually add to the portfolio of things that make you desirable to your partner. Many of the things that [our partner] needed us for in the early days, it doesn't need now. It needed to establish a base of equipment in Europe and we have done this for them. You must ensure that you always have something to offer your partner—some reason for them to continue to need you.

Managers in a Japanese firm whose European partner had shown a high propensity to learn, believed that ultimate control came from being ahead in the race to create next-generation competencies. Leadership here brought partial control over standards, the benefits of controlling the evolution of technology, and the product price and performance advantages of being first down the experience curve. One senior manager put it succinctly:

Friendship is friendship, but competition is competition. Competition is about the future and that is R&D.

Here was a suggestion that partners in competitive alliances may sometimes be more likely to view collaboration as a race to get to the future first, rather than a truly cooperative effort to invent the future together. Again, this provided evidence of a subtle blending of competitive and collaborative goals.

The greater the experience of interviewees in administering or working within collaborative arrangements, the more likely were they to discount the extent to which the formal agreement actually determined patterns of learning, control, and dependence within their partnerships. The formal agreement was seen as essentially static, and the race for capability acquisition and control essentially dynamic. As the interviewing progressed it became possible to array the factors which interviewees typically associated with power and control. Power came first from the relative pace at which each partner was building new capabilities internally, then from an ability to out-learn one's partner, then from the relative contribution of 'irreplaceable' inputs by each partner to the venture, then from relative share of value-added, then from the operating structure (which partner's employees held key functional

posts), then from the governance structure (which partner was best represented on the board and key executive committees), and finally from the legal structure (share of ownership and legally specified terms for the division of equity and profits). On this basis it was possible, for several of the alliances, to construct a crude 'relative power metric.' For the triadic partnership mentioned above (British, French, and Japanese), relative power was apportioned as per Table 2.

While the legal and managerial power of the British partner was at least equal to that of its counterparts, it failed almost totally to exploit other potential sources of power and control. The British firm's failure to keep pace with its partners in learning and competence-building made its acquisition by one of its partners, or some other ambitious firm, almost inevitable. By way of contrast, the French firm, with no advantage in terms of ownership or executive authority, was able to substantially increase its control of the relationship through a rapid pace of learning. The French firm had substantially increased its R&D budget, hoping eventually to counterbalance its Japanese partner's faster pace of new product development and competence-building. Although the French firm's equity stake remained at 33 percent through most of the 1980s, it continued to enhance its bargaining power by internalizing the skills of its Japanese partner and gaining an ever-increasing share of value-added. From the very different experiences of the British and French firms in this alliance came the proposition that power vested in a particular firm through the formal agreement will almost certainly erode if its partners are more adept at internalization or quicker to build valuable new competencies.

The perspectives on bargaining power and learning which emerged from the case analysis also gave rise to propositions regarding the longevity of rivalrous alliances. In general, it appeared that competitively oriented partners would continue to collaborate together so long as they were: (1) equally capable of inter-partner learning or independent skills development, and/or (2) both substantially smaller, and mutually vulnerable, to industry leaders.

Three broad determinants of learning outcomes emerged during the study and constitute the core of the internalization model. *Intent* refers to a firm's initial propensity to view collaboration as

Table 2. Relative power of partners in a triadic alliance¹ (ranked by perceived importance as determinants of bargaining power)

	British	French	Japanese
1. Relative pace of competence building ²		+++	+++++
2. Relative success at inter-partner learning		++++	++
3. Relative criticality of inputs ³		++	+++
4. Relative share of value-added ⁴	+	++	++++
5. 'Possession' of key operating jobs ⁵	++	++	+
6. Representation on governing bodies ⁶	++	+	+
7. Legal share of ownership ⁷	+	+	+

¹ The number of plus signs indicates the relative power within the joint venture that each partner gained from each factor.

² Managers in the Japanese partner believed their firm was innovating more rapidly than its European partners in the areas of miniaturization, production engineering, and advanced technologies.

³ For most of the venture's early history product designs, process equipment, and high-precision components were supplied exclusively by the Japanese partner.

⁴ By 1985 European content was approximately 50 percent. The French partner supplied a greater share of the European content than the British partner.

⁵ The Managing Directors of the two European plants were Europeans. At each plant a Japanese employee held the Deputy Managing Director's post.

⁶ Each partner was responsible for appointing two representatives to the Supervisory Board and one representative to the Management Board. The agreement stipulated that a European was to be President of the Supervisory Board. An executive seconded from the British partner occupied this position.

⁷ Each of the three partners held 33.33 percent of the joint venture's equity.

an opportunity to learn; *transparency* to the 'knowability' or openness of each partner, and thus the potential for learning; and *receptivity* to a partner's capacity for learning, or 'absorptiveness.' While there was much a firm could do to implant a learning intent, limit its own transparency, and enhance its receptivity, there seemed to be some inherent determinants of inter-partner learning, more or less exogenous to the partnership itself, that either predisposed a firm to positive learning outcomes, or rendered it unlikely to successfully exploit opportunities to learn. These are outlined in Table 3, and will be discussed below, along with more 'active' determinants or learning outcomes.

Intent as a determinant of learning

The only collaborative intent that was consistent across all firms in the study was *investment avoidance*. In some cases this seemed to be a partner's sole objective. Five of the seven Western firms in the study that had alliances with Japanese partners, had not possessed an internalization intent at the time they entered their Asian alliances. Possessing what came to be called a

substitution intent, these firms seemed satisfied—at least in the beginning—to substitute their partner's competitiveness in a particular skill area for their own lack of competitiveness. Insofar as it could be ascertained, the Japanese counterparts in these alliances seemed to possess explicit learning intents—with one possible exception. This apparent asymmetry in collaborative goals between Western and Japanese partners is deemed significant because in no case did systematic learning take place in the absence of a clearly communicated internalization intent.

In cases where one partner had systematically learned from the other, great efforts had been made to embed a learning intent within operating-level employees. One project manager recalled that at the outset of the alliance his divisional vice president had brought together all those with organization-spanning roles and told them:

I wish we didn't need this partnership. I wish we knew how to do what our partner knows how to do. But I will be more disappointed if, in three years, we have not learned to do what our partner knows how to do.

In one firm where learning did not take place, the blame was put on a failure to clearly

Table 3. Inherent determinants of inter-partner learning: A comparison of prototypes

	Factors associated with positive learning outcomes	Factors associated with negative learning outcomes
<i>Strength of internalization intent</i>		
1. Competitive posture <i>vis-à-vis</i> partner	Co-option now, confrontation later	Collaboration instead of competition
2. Relative resource position versus corporate ambitions	Scarcity	Abundance
3. Perceived pay-off—capacity to exploit skills in multiple businesses	High; alliance entered to build corporate-wide core competencies	Low; alliance entered to 'fix' problems in a single business
4. Perspective on power	Balance of power begets instability	Balance of power begets stability
<i>Transparency (organizational)</i>		
5. Social context	Language and customs constitute a barrier	Language and customs not a barrier
6. Attitude towards outsiders	The clan as an ideal: exclusivity	The 'melting pot' as ideal: inclusivity
<i>Transparency (skills)</i>		
7. Extent to which skills are context-dependent	Skills comprise tacit knowledge embedded within social systems	Skills comprise explicit knowledge held by a few 'experts'
8. Relative pace of skills enhancement	Fast	Slow
<i>Preconditions for receptivity</i>		
9. Sense of confidence	Neither under-confidence nor over-confidence in its own capabilities	Either under-confidence or over-confidence in its own capabilities
10. Need to first unlearn	As a newcomer, little that must be forgotten before learning can begin	As a laggard, much that must be unlearned before new skills drive out old
11. Size of skills gap with industry leaders	Small	Substantial
12. Institutional vs. individual learning	Capacity for 'summing up' and transferring individual learning	Fragmentation (vertical and horizontal) frustrates learning

communicate learning objectives to those with inter-organizational roles:

Our engineers were just as good as [our partner's]. In fact, their's were narrower technically, but they had a much better understanding of what the company was trying to accomplish. They knew they were there to learn; our people didn't.

A manager in a company with a record of successful learning from partners described what had been done to embed a learning intent:

We wanted to make learning an automatic discipline. We asked the staff every day, 'What did you learn from [our partner] today?' Learning was carefully monitored and recorded.

While several Western firms had adopted defensive learning intents, as they came to understand the internalization goals of their Japanese partners, none of these firms could demonstrate that systematic learning had taken place. That the alliance could be a laboratory for learning seemed to be a difficult message to convey, once the alliance had become widely viewed as simply an

alternative to internal efforts, as one manager commented:

When the deal was put together some of us were skeptical, but we were told this was the wave of the future and we'd have to learn to rely on [our partner]. So we relied on them; boy, did we rely on them. Now we're hearing [from senior management] that we shouldn't rely on them *too* much; we have to keep some kind of 'shadow' capability internally. Well, I think we've gotten this message a bit late. Letting [our partner] do the tough stuff has become second nature to us.

To summarize the argument thus far, learning took place by design rather than by default, and skill substitution or surrender by default in the absence of design. In situations where there was a marked asymmetry in intent, the migration of skills between partners could not be accurately characterized as merely 'leakage' (Harrigan, 1986). The competitive consequences of skills transfers, as well as the actual migration of skills, was often unintended, unanticipated, and unwanted by at least one of the partners. This seems to be the fate that befell Varian Associates, a U.S. producer of advanced electronics including semiconductors. Reflecting on its joint venture with NEC, one of Varian's senior executives concluded that 'all NEC had wanted to do was to suck out Varian's technology, not sell Varian's equipment' (Goldenberg, 1988: 85).

What factors might account for observed differences in intent? Whether or not a firm possessed an explicit internalization intent seemed to be a product of: (1) whether it viewed collaboration as a more or less permanent alternative to competition or as a temporary vehicle for improving its competitiveness *vis-à-vis* its partner; (2) its relative resource position *vis-à-vis* its partner and other industry participants; (3) its calculation of the pay-off to learning; and (4) its preference for balanced vs. asymmetric dependence within the alliance. Taking these proposed determinants in turn, it was mentioned earlier that several partners had developed defensive internalization intents upon discovering the learning goals of their partners. The majority of Western firms in the study appeared to have initially projected their own substitution intents onto their partners. These firms tended to describe the logic of their collaborative ventures in terms of 'role specialization,' 'complementarity,'

'centers of excellence,' and so on. Such descriptors evinced a view of collaboration as a stable division of roles based on the unique skill endowments of each partner, rather than as a potentially low-cost route to replicating partner skills and erasing initial dependencies.

With one exception, those Western partners that had lacked an initial internalization intent had all been substantially larger than their Japanese partners at the time their alliances were formed. The assumption seemed to be that relative size was a good proxy for relative skill levels. A U.S. manager summarized the attitude that had prevailed a decade earlier when the firm entered its first major Japanese alliance: 'We invented the industry. What could we possibly learn from an up-start in Japan?' An executive in their Japanese partner reflected on difference in the two partner's attitudes toward learning:

When we saw [our larger Western partner] doing something better, we always wanted to know why. But when they come to look at what we are doing, they say, 'Oh, you can do that because you are Japanese,' or they find some other reason. They make an explanation so they don't have to understand [what we are doing differently].

An abundance of resources, and a legacy of industry leadership, whether real or perceived, made it difficult for a firm to admit to itself that it had something to learn from a smaller partner.

The intent to learn also appeared to be a function of the firm's calculation about the pay-off to learning. In those firms where the internalization intent was strongest and most deeply felt, the skills to be acquired from the partner were seen as critical to the growth of the entire company, and not just the competitiveness of a single product or business. This was in contrast to firms where competitiveness was defined solely in end-product terms, and where top management had no explicit plans for building corporate-wide skills. Here alliances were viewed as short cuts to a more competitive product line (by relying on a partner for critical components or perhaps entire products), rather than as short cuts to the internalization of skills that could be applied across a range of businesses. Without clear corporate goals for competence building, and a deep appreciation for the critical contri-

bution of core competence leadership to long-term competitiveness, individual businesses appeared unlikely to devote resources to the task of learning.

The perceived pay-off to learning was also influenced, in some cases, by a partner's calculation of the cost of continued dependence. Managers in the study identified a range of potential costs that could be associated with dependency in a core skill area: an inability to thwart a partner intent on entering the firm's prime markets; or the obverse—being constrained from entering an emerging market, or having one's entry slowed by a powerful partner; the risk of being 'stranded' by a collaborator who pre-emptively ended the relationship; or being disadvantaged when the financial terms of the agreement are re-negotiated. Japanese partners, in particular, seemed to view strategic alliances as second-best options. A group of managers interviewed in one firm expressed an opinion, quite vehemently, that their company would never accept a situation in which it was, over the long term, dependent on a Western partner for an important aspect of its product-based competitiveness—this despite the fact that several of that firm's foreign partners were in just such a dependency position. Not surprisingly, this firm possessed a strong internalization intent.

There may be a reason why Japanese firms, in particular, seemed adverse to the very notion of symmetrical dependency between partners. Nakane (1970) has shown that social organization in Japan is based on the notion of dependence. The parent-child analogy is applied to the government and its public, employers and employees, managers and subordinates, and large firms and their suppliers. In this view a 'balance of power' brings indeterminateness and instability to a relationship, while a clearly disproportionate allocation of power, that is, dependence, brings cohesion and consistency. The preference of Japanese managers for unequivocal decision-making power in foreign subsidiaries and joint ventures has been well documented (Ballon, 1979; Ouchi and Johnson, 1974). Indeed, when asked to consider a hypothetical American-Japanese joint venture located in the U.S., Japanese managers felt that future trust would be highest if Japanese, rather than American, managers occupied the most powerful positions, and if Japanese managers, rather than Americans,

had responsibility for initiating key decision processes such as capital budgeting (Sullivan and Peterson, 1982).

It seems unlikely that many Japanese managers would disagree with Harrigan's (1986: 148) assertion that:

Managers can be as crafty as they please in writing clauses to protect their firm's technology rights, but the joint venture's success depends on trust.

But when Japanese managers list 'trust' as one of the most important conditions for a successful joint venture (Block and Matsumoto, 1972), they may be speaking not of the trust that comes from what Buckley and Casson (1988) term 'mutual forbearance,' but from unequivocal dependence. If knowledge is power, and power the father of dependence, one can expect Japanese firms to strive to learn from their partners.

Transparency as a determinant of learning

Whereas intent established the desire to learn, transparency determined the potential for learning. Some partners were, for a variety of reasons, more transparent—more open and accessible—than others. Of course, every partner intended to share some skills with its opposite number. Even in firms with an inherently 'protective' stance *vis-à-vis* their partner, some degree of openness was accepted as the price for enticing the partner into the relationship and successfully executing joint tasks. Yet many managers drew a distinction between what might be termed 'transparency by design,' and 'transparency by default.' The concerns managers expressed were over unintended and unanticipated transfers.

Such concerns arose in cases where managers believed their partner's learning had gone far beyond what was deemed essential for the successful performance of joint tasks, to encompass what was necessary to internalize skills. A partner's learning could be both more intensive than foreseen in the formal agreement, and more extensive. The greatest sense of 'unfairness,' and the greatest sense of failure in managing transparency, was observed in those firms where a partner's learning had extended to skill areas that were not explicitly part of the formal agreement. This often seemed to be the

cases in OEM sourcing arrangement where an up-stream partner had used the alliance to gain insights into customer needs and market structure. A European-based manager described the process thus:

Anytime we demanded unique features for the European market [in a product sourced from Japan, our Japanese partner] wanted a complete justification for each item. They wanted to understand why we wanted certain product features, competitors' product information, customer perceptions, all the market-based things. You can get fifteen years of accumulated wisdom across the table in two hours.

Broadly, there appeared to be at least five inherent, *ex ante* determinants of transparency: (1) the penetrability of the social context which surrounded the partner; (2) attitudes towards outsiders, i.e. clannishness; (3) the extent to which the partner's distinctive skills were encodable and discrete; and (4) the partner's relative pace of skill-building.

While this exploratory study cannot provide an answer to the question, 'Are Japanese partners inherently less transparent than their Western counterparts?' what can be said is that nearly all the Western partners in the study believed this to be the case. The study suggested that there were indeed systematic, though not irreversible, asymmetries in transparency between Western and Japanese partners. Typical was the comment of one Western manager:

Despite the fact that we were [in Japan] for training, I always felt we were revealing more information about us than [our Japanese partners] were about themselves.

Interestingly, no Japanese manager expressed an opinion that Western partners might be inherently less transparent than Japanese partners. Peterson and Schwind (1977) found similar evidence of asymmetry in transparency between Japanese and Western alliance partners. In their study of international joint ventures located in Japan, 'communication' was the problem mentioned most often by both expatriate and Japanese managers. However, for expatriate managers 'difficulty in receiving exact information and data' from their Japanese partners ranked a close second, mentioned by 87 percent of U.S.

expatriate respondents. The next most noted problems, 'reluctance to report failures,' and 'no open discussion of problems,' further reflect the frustration these managers felt in extracting information from their Japanese partners. However, no Japanese manager mentioned access to information as a major annoyance in dealing with Western partners.

It seems plausible to propose that this asymmetry in perceptions of relative opacity rests at least in part on the extent to which a firm's knowledge base is context-bound (Terpstra and David, 1985). Contextuality refers to the 'embeddedness' of information in social systems. In general, knowledge in Oriental cultures is more contextual than information in Occidental cultures (Benedict, 1946). Form and content, ritual and substance cannot easily be disentangled. Context-dependent knowledge (for example, principles of industrial relations in Japan) is inherently less transparent than context-free knowledge (e.g. the principles of the transistor).

Japanese employees working within Western partners seemed to more easily gain acceptance by peers, and more quickly become insiders, than was the case in reverse. For example, a divisional vice president managing a joint European-Japanese design effort within Europe remarked that:

we were conscious of [our partner's employees] on-site and did try to keep information exchange on a need-to-know basis. However, after a while, they ceased to be different. We played badminton together, we went to the same parties and restaurants. They became close friends.

While several Western managers, with employees working in Japanese-based alliances, expressed concerns over the fact that their staff might 'go native,' no Japanese manager expressed such a concern in the reverse case. Several managers, both Western and Japanese, expressed the opinion that the 'openness' of Western cultural and organizational contexts facilitated the assimilation of partner employees, while the sense of 'clan' possessed by Japanese staff made them sensitive to the risk of revealing competitively useful information to a partner. The same European manager who commented on the easy social integration of Japanese team members also recalled that:

Once the contract was signed, [the Japanese partner] had a view of what we needed to know to complete the project. They were totally open in this regard, but totally closed on all other issues. They had well-defined limits in terms of what they would tell us. The junior guys would tell us nothing unless a senior person was there.

The point here is not that Japanese organizations are clannish. That point has been made before (Ouchi, 1980). Instead, it is that where clannishness is high, opportunities for access will be limited, and transparency low. As a member of a clan, an employee involved in a partnership can be expected to retain a sense of identity with, and loyalty to, the parent. When conflicts arise which reflect an incongruity between parent and partner goals, a clan member will search for solutions consistent with the parent's goals.

An asymmetry in language skills often exacerbated inherent constraints on transparency such as clannishness and complexity. That operating employees in Western firms almost universally lacked Japanese language skills and cultural experience in Japan served to limit the transparency of their Asian hosts. One engineer from a European company recalled his frustration in working with a partner in Japan:

Whenever I made a presentation [to our partner] I was one person against ten to twelve. They'd put me in front of a flip chart, then stop me while they went into a conversation in Japanese for ten minutes. If I asked them a question they would break into Japanese to first decide what I wanted to know, and then would discuss options in terms of what they might tell me, and finally would come back with an answer.

Not only did it appear that some organizations were more penetrable than others, it appeared that some types of knowledge were inherently more deeply buried in the social context of the firm than others. Explicit knowledge was more encodable than tacit knowledge—it could be transferred in engineering drawings, extracted from patent filings, etc., and discrete knowledge was more easily extracted from a partner than systemic knowledge. In general, it appeared that specific technologies (e.g. a microprocessor chip design), were more transparent than deep-seated competencies (e.g. value-engineering skills), and that market intelligence flowed more easily than knowledge of leading edge manufacturing know-

how. Thus an asymmetry in the nature of the skills contributed by each partner to the venture could, *ceteris paribus*, preordain asymmetric learning. In partnerships where one firm brought product designs and market experience to the table, and the other (typically Japanese) manufacturing competence, the partner contributing production skills seemed to benefit from an inherently lower level of transparency. For while it did not appear that a firm could transfer product designs to its partner without revealing, perhaps inadvertently, a great deal of implicit market information, it was possible for the producing partner to ship back finished products without revealing much of what comprised its manufacturing competence.

The pace of a firm's innovation also seemed to determine its transparency to its partner. In some cases one partner's speed of innovation out-ran the other's pace of absorption. One fast-moving partner believed it could afford to be very open in terms of access, and yet remain essentially opaque, given its rapid pace of product development. Managers in this Japanese firm believed that their rate of new product introduction was between four and five times faster than that of their partner. Despite their partner's avowed learning intent, managers in this firm felt relatively unconcerned:

We are very convinced that our R&D speed is faster than [our partner's]. This is our ultimate protection [against partner encroachment].

The researcher was reminded of the old adage about the difficulty of drinking from a fire hose.

Partners employed a wide variety of active measures to limit transparency. In one firm, all partner requests for information and access were processed through a small 'collaboration department.' Staff from this department attended virtually all meetings between managers and staff of the two partners. In this way they were able to control the 'aperture' through which the partner gained access to people and facilities. Out of this case grew the notion of a 'gatekeeping' role: one or more individuals charged with monitoring knowledge flows across the collaborative membrane.

Another determinant of relative transparency position appeared to be the number of people from each partner seconded to the other, or,

more generally, the extent to which the nature of joint tasks required regular and intensive intermingling of staff from the two partners. At one extreme was the task of jointly designing a car, where the need to mate together powertrain, body, and suspension required intensive cross-membrane interaction, and made both partners highly transparent to each other. At the other extreme was the much simpler task of specifying single 'plug-in' components to be supplied by a partner.

Firms in the study also sought to limit their transparency to ambitious partners by restricting the collaborative agreement to a narrow range of products or markets. One manager argued that:

If you source the *entire* product in, there is a lot greater transfer of design skills—your partner gets to see everything. What you should do is design components, source from multiple places, and then do integration and manufacturing yourself.

Another firm saw site selection and control as key issues in limiting transparency:

It helps to have a joint company in a third location; this helps to protect you. You don't let your partner do joint work on your site. And if you have a third site you can decide what you put in and what you don't.

Given the fact that the process of collaborative exchange took place not at senior management levels, but at operating levels, the management of transparency depended, ultimately, on the ability and willingness of operators to sometimes say 'no' to a partner's requests for information or access. The extent to which operating employees had an explicit sense of the need to protect information from bleeding through to a partner varied widely across the sample firms. One project manager was surprised by how close-mouthed his partner's engineers were:

Everyone I met within [our partner] seemed to operate with well-defined limits on what they would tell us. Their engineers were very guarded with technical details. Sometimes I had to appeal to higher level managers to get information critical to the project's success.

In one firm senior managers explicitly recognized the tensions that could arise when operating

employees were asked to work in a collegial way to make the alliance a success, and at the same time had a responsibility for limiting the partner's access to core skills. One way out of this dilemma was to give operators the right to escalate partner requests for information.

It appeared that firms which could rely on passive or 'natural' barriers to transparency had an inherent advantage over partners that could not. This was not only because natural barriers to transparency seemed to be the most difficult to overcome, but also because active measures were sometimes regarded by partners as provocative. When U.S. firms have relied on contractual clauses and other active means to limit transparency, they have often been accused of acting in bad faith, or undermining trust (Ballon, 1979). To the extent that passive barriers can substitute for active measures, a partner may be able to claim for itself the high ground of trust and openness, and yet still benefit from almost unassailable barriers to partner encroachment.

Receptivity as a determinant of learning

If intent establishes the desire to learn, and transparency the opportunity, receptivity determines the capacity to learn. Just as there were active and passive determinants of transparency, so there were of receptivity. In several cases, when questioned as to why they had apparently learned more than their Western partners, Japanese managers answered, in essence, 'We had the attitude of students, and our Western partners the attitude of teachers.' Ballon would no doubt accept such a generalization:

When looking at the West from outside the Western Hemisphere, one attitude stands out. It is just how anxious Americans and Europeans are to *teach* the rest of the world (1979: 27).

Humility may be the first prerequisite for learning. However, the distinction between teachers and students rested on more than just cultural stereotypes.

Generating an enthusiasm for learning, that is, an attitude of receptivity, among operating employees seemed to depend largely on whether the firm entered the alliance as a *late-comer*, or as a *laggard*; i.e. whether the alliance was seen by the majority of employees as a proactive

choice to support ambitious growth goals (the perspective of late-comers), or as an easy 'way out' of a deteriorating competitive situation (the perspective of laggards). Where a firm had become a laggard, and had come to think of itself as such, middle-level managers and operators appeared more likely to adopt an acquiescent attitude towards dependency and learning opportunities. While they sometimes saw learning as a laudable goal, they possessed little enthusiasm for the task. Perhaps not surprisingly, in firms that had struggled to maintain their competitiveness in a particular product/market, and had failed, alliances tended to be seen by operating-level employees as confirmation of their failure, and not as a means to rebuild skills. A sense of resignation was not conducive to receptivity.

The stigma of failure did not attach itself to firms using alliances to build skills in new areas, i.e. closing skills 'gaps' as opposed to compensating for a skills failure. The European partner mentioned earlier could not have claimed to possess world-class manufacturer skills at the time it entered its alliance with a Japanese partner. Yet it had succeeded, through its own efforts, in dramatically improving the productivity of its color television manufacturing in the 5 years preceding the joint venture, and had come close to Japanese productivity levels. It had also doubled its share of the European color television market in the decade preceding the alliance. Thus it was not difficult for employees to regard the partnership as a multiplier, rather than as a substitute, for internal efforts.

Organization learning theory suggests that laggards may confront two cruel paradoxes. First, learning often cannot begin until unlearning has taken place (Burgelman, 1983b; Hedberg, 1981; Nystrom and Starbuck, 1984). This is particularly true where the behaviors that contributed to past success have been deeply etched in the organization's consciousness. The problem of unlearning is not only a cognitive problem—altering perceptual maps—but a problem of driving out old behavior with new behavior. The link between changed cognition and changed behavior is probably more direct in individuals (Postman and Underwood, 1973; Watzlawick, Weakland and Fisch, 1974) than it is in large multinational companies (Pralhad and Doz, 1987). Current patterns of behavior in large organizations are typically 'hard-wired' in struc-

ture, in information systems, incentive schemes, hiring and promotion practices, and so on (Argyris and Schon, 1978). The implication here is that unlearning will be a significant hurdle for a laggard attempting to compensate for past skill failure. For a late-comer using an alliance to build skills in a new area, unlearning is not a prerequisite. Receptivity will not be impaired by employees clinging to past practices.

Second, while a reduction in organizational slack typically precipitates the search for new knowledge (Cyert and March, 1963), the complete absence of slack just as surely frustrates learning (Burgelman, 1983a). Some slack is necessary if the organization is to search for new approaches, experiment with new methods, and embed new capabilities. Learning is a luxury which can be afforded by those with some minimum complement of time and resources. A small crisis abets learning, a big crisis limits learning. Of course it has been argued that collaboration may be a timely and low-cost mechanism for acquiring new skills. But even here, as learning progresses from knowledge-gathering to capability-building, investment needs escalate. A firm may understand how its partner achieves a certain level of performance, but not have the resources needed to embed that understanding through staff development and investment in new facilities. Again, the results of the study support the contention that learning is most likely to occur in the middle ground between abundance and arrogance on one side, and deprivation and resignation on the other.

To these two paradoxes may be added a third: the greater the need to learn, i.e. the farther one partner is behind its counterpart, the higher the barriers to receptivity. Simply put, to replicate the skills of a partner, a firm must be able to identify, if not retrace, the intermediate learning 'steps' between its present competence level and that of its partner. After visiting the most advanced manufacturing facility of a Japanese partner, a manager in one Western firm remarked:

It's not good for us to simply observe where they are today, what we have to find out is how they got from where we are to where they are. We need to experiment and learn with intermediate technologies before duplicating what they've done.

If the skills gap between partners is too great, learning becomes almost impossible.

The notion of receptivity was seen to apply to the corporate body, as well as to individual receptors. Individual learning became collective learning when (1) there existed a mechanism for 'summing up' individual learning, i.e. first recording and then integrating the fragmentary knowledge gained by individuals, and (2) learning was transferred across unit boundaries to all those who could benefit in some way from what had been learned. It was evident in the study that firms with a history of cross-functional teamwork and inter-business coordination were more likely to turn personal learning into corporate learning than were firms where the emphasis was on 'individual contributors' and 'independent business units.' A senior manager in a Japanese partner commented on the internal relationships that had aided its learning, and hindered, it believed, its partner's learning:

Within [my firm] there is a great deal of mutual responsibility. Responsibility is a very grey area in Japan; many people are involved. There is much more overlap in responsibility than in [our Western partner] where information seems to be compartmentalized. [Our partner] thought we asked too many questions, but in [my company] information is shared with many people even if they are not directly involved. Engineers in [one department] want to know what is happening in design [in another department] even if that is not related to their direct responsibilities.

On the other side of the relationship a Western manager offered a similar perspective:

[In joint meetings, staff] groups [from our Japanese partner] would almost always be multi-disciplinary, even for technical discussions. [They] clearly wanted to understand the implications of our technology. You had the feeling that most of the [their] people who were sitting in the [joint] meetings were there only to learn. We would have never taken anyone into such a meeting without a direct interest in what was being discussed.

In terms of active determinants, receptivity depended upon, above all else, the diligence with which those with greatest access to the partner approached the task of learning. One firm in particular appeared to conceive of inter-partner learning as a rigorous discipline. This firm's success in internalizing partner skills suggests that such a conception may be a prerequisite for systematic learning. A senior executive in the

company described its 'inch-by-inch' efforts to learn from its partner:

You need to be incredibly patient, but eventually you would get what you wanted. In the event of the slightest breakdown, you had to ask [our partner], 'What now?' We acquired the know-how very slowly in this way, by finding out all the little mistakes [we were making], by repeatedly asking questions, and by forcing them, little by little, to yield technical information.

In this case receptivity seemed to thrive as long as top management continued to express an active interest in what was being learned. Top management's commitment to learning was exhibited first through a clear intent to establish a world-class consumer electronics manufacturing competence, secondly through the hiring of a wholly new executive group, and thirdly through a constant stream of investment to build up a physical plant as closely parallel to that of the partner as possible. Given initial estimates that it would take between 3 and 5 years for the firm to 'catch up' with its Japanese partner, top management believed its unwavering enthusiasm for, and attention to, the partnership was critical to a positive learning outcome. Internalizing new skills via an alliance would seem to require a reasonably long attention span on the part of top management.

The personal skills of receptors also influenced receptivity. The European partner referred to above had assembled a collaborative team with the necessary skills to observe, interpret, apply, and improve upon partner skills. One member of the team came from the watch-making industry, and others from successful precision-engineering firms. The average age of team members was estimated to be 35 years. The relatively young age of the team, and the fact that few were tainted with the burden of past failure, reduced the need for 'unlearning.' The team also benefited from a liberal training budget. For this company it was not enough to embed, through goal setting and daily reinforcement, a learning discipline, receptors had to be competent to receive. This meant that their skills had to parallel, as closely as possible, those from whom they were learning.

Determinants of sustainable learning

Whether a skills gap closed through inter-partner learning later re-opened seemed to depend on

several factors, all of which can be summarized under the general heading of a *capacity for self-sustaining learning*. The critical point here is that intercepting a partner's skills at a point in time appeared to be a lesser challenge than matching a partner's underlying rate of improvement over time. To break free of dependence a firm had, first, to match its pace of absorption to its partner's pace of innovation, and then to equal or better its partner's capability for autonomously and continuously improving those skills. NEC, when it formed its alliance with Honeywell in the earlier 1960s, was much smaller than its partner. Nonetheless, NEC ultimately reversed its initial dependency. Those few firms in the study that were committed to turning the tables of dependency appeared to agree that matching a partner's pace of autonomous improvement depended on: (1) capturing know-why as well as know-what from their partners, (2) mastering the disciplines of continuous improvement, and (3) achieving global scale.

Two firms in the study recognized that, as long as they operated at regional scale, they could not fully apply the lessons learned from partners operating at global scale. Both firms made large international acquisitions with the express goal of amortizing investment in world-scale facilities that paralleled those of their partners. Both firms found that as their learning agendas shifted from technology to competence, from discrete skills to systemic skills, and from know-how to know-why, their pace of learning had slowed. It was clear to both partners that building a foundation for autonomous improvement demanded insight into the underlying dynamic which drove their partner's pace of innovation. Again, this was a substantial challenge, particularly for Western firms, as at least some of the impetus behind the innovative pace of their Japanese counterparts appeared to be culturally idiosyncratic (Baba, 1989; Imai, 1986; Itami, 1987).

DISCUSSION

Though this research grew out of an interest in skills-based competition (Nelson and Winter, 1982; Dierickx and Cool, 1989; Quinn, Doorley and Paquette, 1990; Prahalad and Hamel, 1990; Barney, 1990; Teece, Pisano and Shuen, 1990), it is also important to set it within the context of existing research on the management of

strategic alliances. The way in which the present study both complements and challenges prior research on collaboration is now discussed.

Collaboration as a transitional stage

Joint ventures and other non-market inter-firm agreements have typically been pictured as an intermediate level of integration between arm's-length contracts in open markets and full ownership (Nielsen, 1988; Thorelli, 1986). But where the goal of the alliance is skills acquisition, an alliance may be seen, by one or both partners, not as an optimal compromise between market and hierarchy, to use Williamson's (1975) nomenclature, but as a half-way house on the road from market to hierarchy. In this sense the alliance is viewed not as an alternative to market-based transactions or full ownership, but as an alternative to other modes of skill acquisition. These might include acquiring the partner, licensing from the partner, or developing the needed skills through internal efforts. There are several reasons collaboration may in some cases be the preferred mode of skills acquisition.

For some skills, what Itami (1987) terms 'invisible assets,' the cost of internal development may be almost infinite. Complex skills, based on tacit knowledge, and arising out of a unique cultural context may be acquirable only by up-close observation and emulation of 'best in class.' Alliances may offer advantages of timeliness as well as efficiency. Where global competitors are rapidly building new sources of competitive advantage, as well as enhancing existing skills, a go-it-alone strategy could confine a firm to permanent also-ran status. Alliances may be seen as a way of short-circuiting the process of skills acquisition and thus avoiding the opportunity cost of being a perpetual follower. Motorola's reliance on Toshiba for re-entry to the DRAM semiconductor business seems to reflect such a concern. Internalization via collaboration may be more attractive than acquiring a firm in total. In buying a company the acquirer must pay for non-distinctive assets, and is confronted with a substantially larger organizational integration problem.

Capturing value vs. creating value

There are two basic processes in any alliance: *value creation* and *value appropriation*. The extent

of value creation depends first on whether the market and competitive logic of the venture is sound, and then on the efficacy with which the two partners combine their complementary skills and resources; that is, how well they perform joint tasks. Each partner then appropriates value in the form of monetary or other benefits. In general, researchers have given more attention to the process of value creation than the process of value appropriation. The primary concern of both the transactions cost (Hennart, 1988) and strategic position (e.g. Harrigan, 1985) perspectives is the creation of joint value. Transactional efficiency gained through quasi-internalization is one form of value creation; improvement in competitive position is another. Both perspectives provide insights into why firms collaborate; neither captures the dynamics which determine collaborative outcomes, and the individual monetary and long-term competitive gains taken by each partner. Making a collaborative agreement 'work' has generally been seen as creating the preconditions for value creation (Doz, 1988; Killing, 1982, 1983). There is much advice on how to be a 'good' partner (Goldenberg, 1988; Perlmutter and Heenan, 1986)—firms are typically urged to build 'trust' (Harrigan, 1986; Peterson and Shimada, 1978)—but little advice on how to reap the benefits of being a good partner.

There appear to be two mechanisms for extracting value from an alliance: bargaining over the stream of economic benefits that issues directly from the successful execution of joint tasks, and internalizing the skills of partners. These 'value pools' may be conceptually distinct, but they were shown to be related in an important way. Bargaining power at any point in time within an alliance is, *ceteris paribus*, a function of who needs whom the most. This, in turn, is a function of the perceived strategic importance of the alliance to each partner and the attractiveness to each partner of alternatives to collaboration. Depending on its bargaining power a partner will gain a greater or lesser share of the fruits of joint effort. An important issue then is what factors prompt changes in bargaining power. Some factors will be exogenous to the partnership. A change in strategic priorities may suddenly make a partnership much more or much less vital for one of the partners (Franko, 1971). Likewise, a shift in the market or competitive environment

could devalue the contribution of one partner and revalue the contribution of the other. Rapid change in technology might produce a similar effect (Harrigan, 1985). However, there is one determinant of relative bargaining power that is very much within the firm's control: its capacity to learn.

While Westney (1988) and Kogut (1988) recognize that learning may be an explicit goal in an alliance, they do not specify the critical linkages between learning, dependency, and bargaining power. Conversely, while Pfeffer and Nowak (1976) and Blois (1980) correctly view alliances as mechanisms for managing inter-organizational dependence, they do not take a dynamic view of interdependence, and hence miss the linkage between learning and changes in relative dependency. If bargaining power is a function of relative dependence it should be possible to lessen dependency and improve bargaining power by out-learning one's partner. Most bargains obsolesce with time (Kobrin, 1986); by actively working to internalize a partner's skills it should be possible to accelerate the rate at which the bargain obsolesces. This seems to have been the motivation for Boeing's Japanese partners in recent years (Moxon, 1988). It was clearly the motivation of two of the Japanese partners in the study.

The process of collaborative exchange

Researchers have tended to look at venture and task structure when attempting to account for partnership performance. An equally useful perspective might be that of a *collaborative membrane*, through which flow skills and capabilities between the partners. The extent to which the membrane is permeable, and in which direction(s) it is permeable determines relative learning. Though researchers and practitioners often seem to be preoccupied with issues of structure—legal, governance and task (Harrigan, 1988; Killing, 1983; Schillaci, 1987; Tybejee, 1988) the study suggests that these may be only partial determinants of permeability. Conceiving of an alliance as a membrane suggests that access to people, facilities, documents, and other forms of knowledge is traded between partners in an on-going process of *collaborative exchange*. As operating employees interact day-by-day, and continually process partner requests for access,

Table 4. Distinctive attributes of a theory of competitive collaboration

	Traditional perspective	Alternative perspective
<i>Collaborative logic</i>	Quasi-internalization	<i>De-facto</i> internalization
<i>Unit of analysis</i>	Joint outcomes	Individual outcomes
<i>Underlying process</i>	Value creation	Value appropriation
<i>Success determinants</i>	Form and structure (macro-bargain)	Collaborative exchange (micro-bargains)
<i>Success metrics</i>	Satisfaction and longevity	Bargaining power and competitiveness

a series of *micro-bargains* are reached on the basis of considerations of operational effectiveness, fairness, and bargaining power. Though these bargains may be more implicit than explicit, out-learning a partner means 'winning' a series of *micro-bargains*. The simple hypothesis is that the terms of trade in any particular micro-bargain may be only partially determined by the terms of trade which prevailed at the time the macro-bargain was struck by corporate officers. A firm may be in a weak bargaining position at the macro level, as NEC undoubtedly was when it entered its alliance with Honeywell in the computer business in the early 1960s, but may be able to strike a series of advantageous micro-bargains if, at the operational level, it uniquely possesses the capacity to learn. Restating the bargaining power argument advanced earlier, the cumulative impact of micro-bargains will, to a large extent, determine in whose favor future macro-bargains are resolved.

Success metrics

Where internalization is the goal, the longevity and 'stability' of partnerships may not be useful proxies for collaborative success. Nevertheless, they have often been used as such (Beamish, 1984; Franko, 1971; Gomes-Casseres, 1987; Killing, 1983; Reynolds, 1979). A long-lived alliance may evince the failure of one or both partners to learn. It was interesting to note in the study that, despite collaborative agreements in Japan with Japanese firms spanning several decades, several Western partners were still unable to 'go it alone' in the Japanese market. By way of contrast, there were few cases in

which Japanese firms had remained dependent on Western partners for continued access to Western markets (though in one case the Japanese partner ultimately acquired its European partner). Likewise, an absence of contention in the relationship is not, by itself, an adequate success metric. A firm with no ambition beyond investment avoidance and substitution of its partner's competitiveness for its own lack of competitiveness may be perfectly content not to learn from its partner. But where a failure to learn is likely to ultimately undermine the competitiveness and independence of the firm, such contentedness should not be taken as a sign of collaborative success. The theoretical perspective on collaboration developed in this paper is summarized in Table 4.

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