International sequential advantages and network flexibility

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There is a common tendency in studies on international competition and foreign investment to emphasize the conditions leading to the initial entry into a foreign market. Yet, a cursory glance at foreign direct investment data for the United States shows that reinvested earnings far outweigh new capital flows. For American corporations, current investment is largely channeled through an already existing multinational network.¹

Because of the establishment of these networks, there is a significant distinction between the initial motivations for foreign direct investment and the sequential advantages of the co-ordinated multinational system. For the initial investment across borders, the motivations for a firm are three-fold: to access raw materials, to exploit cost and skill differentials across countries, or to penetrate markets based on some product, process, or brand-label advantage. Over time, the establishment of internationally dispersed assets generates subsequent advantages through the co-ordination of the individual subsidiaries. In this sense, the benefits of multinational co-ordination are sequential to the initial entries.

The need to analyse competition in terms of international networks is underscored not only by the formation of dispersed subsidiaries, but also by the convergence in technical capabilities across countries. Foreign direct investment frequently reflects, as numerous studies show, the extension of new product and process innovations to overseas markets.² The rapid growth of US investments after the war has been shown to stem from that country's technological leadership. However, data from the past decade have shown a remarkable convergence in R&D expenditures as a percentage of business expenditures among the major industrial countries. To a multinational corporation, the convergence of technological capabilities among countries shifts the dependence on the headquarters' location as the source of innovation towards the
acquisition and management of technology throughout the international network. The expanding use of subsidiaries for gaining strategic leverage is, in part, an outcome of the maturation of many industries founded in the after-war period. For US firms, their early strategies were based on the transfer of technology and superior organizational abilities to overseas markets. Though US overseas growth is no longer in excess of other countries, US firms have been able to maintain a strikingly stable share of world trade where their investment positions are strongest, primarily in Europe.

The transition from competing on the transfer of technological and organizational knowledge to strengthening already established subsidiary positions raises the issue of what is the competitive advantage of a multinational firm in a mature market. In recent years, the answer to this question has been sought through analysing the advantages of multinational co-ordination and network flexibility. In short, multinationality itself can be a source of advantage.

Little attention, however, has been paid to how a firm builds advantages in the process of its development from the initial investments to network co-ordination. The first part of this chapter examines international strategies as they unfold through the development of economies of scale and scope, learning, and operating flexibility. These four sources of advantage are paired with four derived strategies. For each strategy, an example is provided. The intent is not to develop a model for the purpose of competitive analysis but rather of describing a few, among possibly many, patterns in the expansion of the international firm.

The second part of the paper turns briefly to showing how the organization and co-ordination of the multinational corporation gradually evolve to support the passage of foreign direct investments from initial entries to sequential investments. The organizational structure and operating systems of early multinational corporations were designed for the management of dyadic relationships between headquarters and subordinate subsidiaries. To benefit from multinationality has required the development of new systems for managing the international network. These systems are dependent upon mechanisms of organizational learning and the evolution of the international firm towards acquiring some of the traits of a professional organization.

I. Multinationality and competitive advantage

Most studies on the motives for investing for overseas, other than for reasons of material or component sourcing, have found that the initial foreign investment reflects the extension of products for the domestic market. In turn, these products stem from specialized investments in technology and brand labels. The dilemma facing the firm at this time is whether the additional revenues of foreign market penetration are offset by the requirements of adapting products to national markets. In this sense, the conflict between standardized products and national differentiation represents the fundamental and initial trade-off of domestic and international strategies (Doz, Bartlett, and Prahalad 1981). The resolution of the conflict between standardization and national differentiation is not only a question of marketing adaptation, but also of production and research. Indeed, an international strategy frequently rests upon national differentiation of the downstream links of the value-added chain coupled with upstream economies of scale or scope.

Over time, however, as a firm establishes multiple subsidiaries throughout the world, subsequent advantages are realized through the co-ordination of the multinational network. It could well be that the initial advantage of proprietary technology and brand labels declines in competitive significance. Instead, the strategy of the firm shifts increasingly to the exploitation of country differences through four sources of competitive advantage: economies of scale and scope, learning, and operating flexibility. The process by which these sources are strategically developed is described in turn.

Economies of scale, national segmentation, and international aggregation

Much has been made, and often rightly so, of the importance of economies of scale. The significance of economies of scale in producing for world markets is closely linked to the advocacy of standardized products and global rationalization (Doz 1978; Levitt 1983). Critical to this analysis is the determination at what point economies of scale are exhausted. In production, for example, even if average unit manufacturing costs decline with increased output, transportation costs increase as markets in the greatest proximity are saturated. Scherer et al. (1973) found for the United States that plant economies are exhausted at relatively moderate volume relative to the size of the US market. Clearly, for companies targeting a market the size of the US (or of Europe and, in most cases, of Japan), the incremental gain of the world market is insignificant in terms of further scale economies at the single plant level.

For R&D, studies tend to show that overseas research subsidiaries...
are primarily development oriented (Mansfield et al. 1979). This trend suggests that economies of scale in research are potential sources of competitive advantage in international markets, whereas development incurs substantial incremental investments in order to adapt products to country markets. For marketing, the evidence for scale economies has been ambiguous. The scale advantage of a sales force tends to end at the border. If scale economies are derived from global brand labeling, this relationship is likely to be robust for only a few industries.7

To accept the findings on scale in the US market is not to reject that scale can play an important role in international competition during a period of industry evolution or new product launches. There are two important considerations in this regard. First, access to the international market may be critical when there are important scale economies and the product life cycle is short. In this case, foreign penetration may not only serve to amortize fixed costs, but also to deprive potential competitors of the necessary scale.

Second, most of the studies on scale assume that the market is identical for similar products. Clearly, however, as any standard textbook on marketing and industrial economics shows, firms actively segment markets by the physical or psychological differentiation of their products. A policy of segmentation is costly; if not, then segments could be easily addressed by competitors. A strategic issue is the balance between sharing costs across segments (thereby risking competitors' entry) and dedicating investment to a specific segment.

In the international market, firms confront the analogous issue of balancing shared and dedicated costs across countries.8 However, the separation of national markets creates unusual opportunities for firms to develop new products addressed to market segments which vary across countries. Through the aggregation of demand, an investment in specialized fixed assets — which could not be supported by a domestic competitor — is amortized. Contrary to received wisdom, international firms may be, consequently, better able than local firms to address small national segments due to market aggregation. Frequently, such a strategy requires downstream differentiation and upstream scale or scope economies and the utilization, sequential to the initial entry, of existing national market positions. Scale economies are exploited not through simple standardization of product design, manufacturing, and advertising, but through a segmentation of national markets.

The AE-1 camera

Takeuchi and Porter's (1986) discussion of the development of the AE-1 camera provides a good example of international aggregation backed by economies of scale. The AE-1 is a single lens reflex camera with a standardized design for the world market. Its development required considerable co-ordination between marketing and production engineering and investment in machining dedicated to its manufacture. Of great interest, Canon sourced externally the intelligence of the camera, using a customized chip manufactured by Texas Instruments. There was a clear decision made as to which internal resources to develop and which components, no matter how critical, to procure.

Central to the success of the product was the capturing of sufficient volume to justify the significant investments in customizing the chip and manufacturing equipment. Sales volume was achieved through a careful segmentation within targeted countries. In Japan, the camera served as a replacement for mid-income buyers; in the United States, the served market was for first time users of 35 mm cameras; in Germany, the targeted market was older consumers with experience in sophisticated products. Through the international aggregation of these segments, sufficient scale economies were realized to justify the high fixed costs of investment dedicated to the production of the AE-1. The success of this strategy relied, in a sequential sense, on the existing network of Canon marketing and sales subsidiaries throughout the world.

Economies of scope and product line broadening and upgrading

Economies of scope can serve either to augment or negate a global advantage. By economies of scope, it is meant that the cost of producing two products together is less than the sum of the costs of producing these products individually. Because of economies of scope, the benefits of an international strategy riding on a scale advantage can sometimes be nullified. A purely domestic firm may be able to achieve full-scale economies in some link by competing in several product markets.9

Certain links are particularly susceptible to economies of scope which favour incumbent national firms, especially in the area of brand label creation and distribution. An international firm might counter local advantages in brand labeling or distribution by relying on large retailers or by downstream investments. The economics of such a decision depend on whether the market share supports the fixed investment or the appropriability hazards in
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selling through large retailers are not prohibitive. On the other hand, economies of scope can often serve in the interests of a global strategy. Information on one regional product market can be used to benefit another market. For firms where international transportation and global sales force are important, economies in information and logistics can be a critical source of advantage. Moreover, as a firm builds its position overseas, scope economies with existing overseas products can benefit the introduction of other lines internationally.

Because of these shared benefits, market penetration by foreign firms is frequently characterized by a strategy of product line broadening. Davidson (1980), for example, found that new product lines are likely to be introduced in countries where a firm already has operations. From anecdotal evidence, a common Japanese policy has been product line upgrading, whereby the introduction of smaller volume but higher quality goods benefits from previous investments in brand labeling and distribution.

The pattern appears to rest on two reasons. One, dynamic changes in a country running an export surplus lead to a shedding of lower value-added activities. Persistent export surpluses lead in the long run to an appreciation in the home currency, thereby increasing imports and decreasing exports. From this perspective, international competition is between national firms who seek to upgrade their products and improve their productivity in order to offset an appreciating currency. The irony in this struggle is that the more the exporters succeed, the more the exchange rate must appreciate, forcing exports to go overseas, to upgrade further, or to divest.

Two, the initial product entry might exploit a low-cost and volume production strategy in order to justify the high initial costs. Sequential product entries can, then, be targeted for smaller segments, though sharing some fixed costs with the volume line. Such a dynamic suggests that the initial entry by a firm will be characterized by investments that may not be justified by current returns, but lays the foundation for the introduction of higher margin products.

This latter strategy reflects the importance of future options on previous decisions. The dependence of future opportunities on current asset positions may warrant investments that provide the option, at a cost, for product line upgrading and broadening. For example, a firm might invest in quality brand labeling rather than in a specific product advertisement in order to retain the option to upgrade in the future. Or plants might be designed to be retooled easily in order to produce more sophisticated products in the future. Economies of scope can be seen not only in terms of static joint economies, but also as affecting the costs of sequential product entries. By lowering the costs of future entries, dynamic scope economies permit the introduction of global products whose volume alone may not justify the costs of entry.

Honda Motors

Honda's entry into the US market reveals an interesting choice of differentiating the exploitation of scope economies along the value chain. Its remarkable success in the US was built up through the sequential entry of upgraded products over time and the strong pull of the Honda name. Moreover, Honda, like other Japanese producers, frequently relied on contracting out of US model designers, building their strategy on internal manufacturing and engine design know-how.

Given the strong quality reputation of the Honda name, it should be expected that future product entries would ride upon dynamic scope economies in marketing and advertising. Yet, its top of the line cars were introduced under the brand label of the Acura; no mention of the Honda name was made in the television or printed advertising. Furthermore, the Acura dealerships have been either separated from the Honda distributors or placed on different lots.

The Honda strategy bears similarities to the strategy followed by Hattori in differentiating brand labels for different market segments: Pulsar for the lower-mid end, Seiko for the mid-to upper-mid segment, and Lasalle for the top end. Both the Honda and Seiko strategies are based on the differentiation of the downstream links of the value chain at the loss of scope economies, while gaining such economies upstream in design know-how and, at least in the case of Honda, some component commonalities. The danger of such strategies is that larger national competitors may respond by fragmenting the national market into segments too narrow to be supported by the market shares of foreign entrants. It is interesting that Honda appears to be anticipating such a trend — if not promoting it as an offensive strategy against other non-US competitors — by the construction of assembly plants with smaller capacity than traditionally recommended. Through the fragmentation of national markets, Honda apparently seeks to address intra-country segments while maintaining scope economies in the upstream links of design and component production.
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Learning and information updating

The benefits of learning rely on market share in much the same way as economies of scale do, except that costs fall with units of time rather than with units of output in any one production period (Spence 1981). To the extent that market expansion is not offset by product adaptation or inhibited by tariff-induced fragmentation of resources, international participation potentially results in lower costs through increasing cumulative volume, whether this be achieved through segment aggregation or product line broadening. This advantage is especially important when product life cycles are short and diffusion is relatively slow.

In addition to the case where unit costs decline with cumulative volume, learning is frequently organizational in nature, that is, it represents the transfer of organizational practices and know-how across the firm. Examples are the transfer across borders of managerial skills or innovations acquired through new subsidiary establishments. Though the transfer of organizational knowledge may occur infrequently, such learning may drop set-up costs by discrete quantities, providing significant advantages to firms who establish an early position in international markets.

Consider, for example, international marketing. Much of the controversy over international marketing has been centred on whether international brand labelling can serve as a source of global competitive advantage. The emphasis on brand labelling has led to a neglect of the importance of learning as a form of information updating in international marketing, especially in regard to reducing the costs of new product launches. Yet, a multinational corporation accumulates significant information on the covariance of demand characteristics among countries. Hence, the outcome of a product launch in one country serves (in a Bayesian sense) to provide a better forecast of the success of sequential launches in other countries, permitting alterations in the marketing programme and lowering the probability of costly failures. In fact, without learning and information updating of the estimated covariance structure among countries, the existence of international marketing firms appears inexplicable.

Proctor and Gamble

Many examples exist of the use of information updating across countries. Considerable marketing research is usually dedicated to the analysis of pilot tests in order to launch new products. Companies frequently find it worthwhile to make trial launches in restricted geographical areas and, then based on results, adjust the campaign for the launch in the wider market. In international markets, Canada is often used, as it has been by Hyundai of Korea and IKEA of Sweden, as a trial for penetrating the US. For such a trial to be effective, the correlation in demand characteristics of the two countries must be implicitly or explicitly known.

An example of the use of country-specific knowledge to inform new product launches is provided by Bartlett and Ghoshal (1986) in their discussion of Proctor and Gamble's Vizir (a liquid detergent) entry in the European market. An earlier attempt was made to launch Pampers (a disposable diaper) when centralizing marketing and advertising under a single manager located in Brussels. For Vizir, P&G relied upon a 'Eurobrand' team which assigned lead roles to country managers and co-ordinated marketing and advertising, using a common theme. Moreover, subsequent launches were modified based on results in earlier countries.

The Vizir and Pampers comparison illustrate how sensitive learning and information updating within a corporation are to the organizational infrastructure. Effective use of knowledge required the delegation of marketing responsibilities to country managers on a flexible assignment basis. Both the Vizir and Pampers launches utilized common advertising and marketing programs. Where they differed was in the cross-application of country-specific knowledge and an understanding of the correlation in demand across Europe.

Multinational dispersion: comparative advantage and operating flexibility

Studies on international competition have concentrated on the determinants of foreign entry without considering how once the entry is accomplished, subsequent advantages are achieved through the ownership of a multinational network. The multinational dispersion of the firm presents opportunities of profitable arbitrage through the ownership of options written on movements in real factor and product prices, competitors' moves, or government policy.

From this point of view, competitive advantage is equivalent to the exploitation of strategic options. As compared to a domestic firm, the ownership of the assets around the world provides the multinational corporation with the ability to shift production to more favourable locations in the event of adverse exchange rate movements or to minimize taxes through various mechanisms. Multinationality provides, then, a unique benefit in the form of the possibility to gain from uncertainty. In this kind of world, variance implies profit opportunities.
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In short, one of the key strengths of the multinational corporation is its capability to respond to country variance, whether source of the variance be exchange rate movements, tax and financial distortions, competitors’ overseas positioning, or new innovations. The exercise of such options rests, however, upon the creation of complex organizational routines involving the co-ordination of intra-firm activities across the borders. Since it is likely that firms differ in their abilities to co-ordinate contingent routines in response to stochastic environmental events, an enduring source of advantage is the quality of international managerial control and information.

General Motors

Potentially, one advantage of the multinational corporation is the shifting of production between countries. Ford has tended, in recent years, to design its manufacturing around internationally dispersed plants for the production of components, while relying relatively more on local assembly in its large national or regional markets. General Motors, in comparison, has tended to be a collection of country-oriented companies, stressing local production for local sales. In theory, dispersed manufacturing plants producing identical components, provide the opportunity to co-ordinate production flows across countries. In practice, GM has either earmarked certain plants for production at full scale without shifting, or relied on local manufacturing for local sales.11

The evaluation of the costs of such a country-based strategy should include the loss of the option to shift production in response to exchange rate movements. GM has engine plants in Australia, Brazil, and at one time, South Africa to supply Opel in Germany. If wages in Australia were to increase more than wages in Brazil when evaluated in a common currency, GM could shift some or all production to the Brazilian plant. To do so, it would need to build excess capacity into its plants and arrive at labour contracts to permit overtime or layoffs. However, the greater the uncertainty in exchange rates or in relative wages, the more valuable is the option to shift.

It could well be that GM’s decision not to invest in such real options reflects considerations of costs or fears over an erosion of its local country-oriented reputation. Another explanation is that the shifting of production is organizationally complex. It requires, first, a set of transfer prices which fluctuate with exchange rates and, thus, gives an incentive to shift internal suppliers. (In the absence of transfer pricing rules, an internal committee could administratively order the shift.) Second, it requires the co-operation of the plants to reduce or increase production. There must be, then, an alignment of incentives so that plant managers are not penalized for failing to meet output targets. Working out a set of transfer prices and incentives for international production shifting requires a capable organizational infrastructure.

Summary

The above discussion is summarized in Table 2.1. All of these strategies depend upon previous entry investments. National segmentation and international aggregation rides upon the acquisition of knowledge of local markets and sales subsidiaries; product-line broadening upon prior product introductions; information updating on accumulated learning of the covariance of demand across countries; and operating flexibility on plant or market positions in multiple countries. They represent, therefore, strategic options acquired in the establishment of an international network of subsidiaries.

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II. Sequential strategy and organizational evolution

The implementation of sequential strategies is dependent upon the two organizational properties of duplication and differentiation, backed by an international competence in terms of both management and operating systems at the functional level. There is, however, an inherent structural tension in sequential strategies which impedes the development of international competence. The process of moving from a domestic to an international firm is often accompanied by structural change, usually in stages from the creation of an international division to world product lines or areas.14 However, the international structures designed for the transfer of home
advantages to overseas markets are not necessarily suited for competing on network co-ordination.

Though the significance of leveraging the international firm on its subsidiaries has been often noted, the persistence of traditional organizational structures, as many studies have shown, has impaired the creation of multinational flexibility. Franko’s (1976) study of European multinational corporations described not only the adoption of US principles of management, but also the endurance of subsidiary independence and looser financial controls. More detailed corporate case studies carried out at the Stockholm School of Economics have also shown the persistence of organizational characteristics despite the adoption of US-type restructuring (Otterbeck, ed. 1981; Hedlund and Åman 1984). Bartlett’s (1986) description of how the ‘administrative heritage’ of the multinational corporation encumbers organizational evolution is a reflection of this line of thinking. It is not surprising, therefore, that the organizational capability of the multinational corporation to exploit the inherent sequential advantages is impaired by relatively inert structures and management systems.

Heterarchy and the professional organization

In this sense, the international development of multinational corporations shares the characteristics of what Mintzberg and Waters (1985) have described as ‘emergent strategies’. It is likely, as Aharoni’s study (1966) shows, that the initial foreign direct investment decision is not part of a larger international strategy, but rather is frequently a response to unexpected market opportunities. Indeed, much of the planning literature suggests that investments overseas were controlled as part of a dyadic relationship between headquarters and each subsidiary. Over time, the value of managing the international network as for the exploitation of sequential advantages emerged as a recognized strategy. Organizationally, this evolution implies that the multinational corporation — having succeeded in the initial entries overseas — reaps further incremental value by moving from a dyadic relationship with its subsidiaries to the profitable management of its international network.

Hedlund (1986) views this evolution as tending towards holo
graphic subsidiaries, namely, that every part of the organization reflects the entire organization. In his view, the internal hierarchy of the corporation is replaced by balance interdependence, or what he calls a heterarchy. Bartlett (1986) also sees the multinational corporation moving from a hierarchical control to a more cooperative relationship between headquarters and subsidiaries.

In some ways, these themes are familiar. Prahalad and Doz (1981), in particular, noted the importance of formulating strategy in the context of reciprocal dependence between HQ and subsidiaries. Edstrom and Galbraith (1977) also underlined the important role played by socializing managers in a common culture through rotation across different country assignments to create shared norms.

The difference lies in the greater emphasis placed on the autonomy of country subsidiaries and symmetry in responsibilities across horizontal and vertical divisions. Hedlund’s (1986) and Hedlund’s and Rolander’s (1987) thesis is particularly instructive in setting the limiting case of this argument. In their view, the firm learns about its environment and its own resources through a radical delegation of responsibilities to multiple centres. Organizational structure does not only channel information and delegate authority; it, in fact, provides a system by which information and organizational knowledge are created. As Nonaka (1987) argues, short-term instability in the organization is a prerequisite to organizational evolution.

The emphasis by Hedlund, Rolander, and Nonaka on learning points out the fundamental importance of developing international competence, both at the individual and organizational levels. The desire to resolve conflicts and anxieties over the process of learning as a firm internationalizes can easily lead to premature decisions. An example of such decisions is the eradication of international divisions before product line managers are sufficiently educated in, and committed to, the international business of their firm. The work of Davidson and Haspelagh (1982) suggests that an evolution to global product structures impedes the transfer of technology and new products from headquarters to subsidiaries. It would not be surprising if similar evidence should be found for the impediment of technological transfer across subsidiaries. In effect, a too hasty evolution to world structures weakens the development of international commitment and competence.

The emphasis on systemic learning leads to the view of the international firm as tending towards the development of characteristics frequently associated with the professional firm. These characteristics are principally the loosening of formal control systems in favour of greater managerial autonomy and lateral communication across departments or subsidiaries. Moreover, both greater autonomy and lateral communication have been found to be encouraged under highly uncertain environments. For the international firm, it is not
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In the growing complexity of its internal network and the interdependence across markets should lead to an increased dependence on the professional competence of its managers.

However, the hierarchy as a professional firm is a poor model unless the mechanisms by which the system is stabilized and co-ordinated are delineated. System stability is particularly critical given that the country subsidiary is squeezed between the pull of the internal corporate network, on the one hand, and its position in the external national network of customers, suppliers, and other groups, on the other. Much like a Byzantine Empire, a multinational corporation may slowly deteriorate by the entropy stemming from the need of the country subsidiaries to adapt to, and draw resources from, the local environments.

A strategy riding upon dynamic economies of scope exemplifies this dilemma by raising the question which resource should serve as the basis of further product line expansion. Though the initial entry into a country may be based on a corporate product innovation, the country subsidiary may decide to launch further products on a local basis which draw upon unused capacity in distribution channels. Such entrepreneurial activity should be tolerated, if not encouraged, by headquarters. Local entrepreneurship provides not only motivational incentives, but also, the possibility that innovations in response to local market demands may be internationally useful. The drawback is that local entrepreneurship will not only deflect managerial attention from corporate-wide products, but also that the evolution of country subsidiaries' capabilities will deter the development of an internationally co-ordinated network.

Localized learning and entrepreneurship must be evaluated in light of the contribution to, and stability of the corporate system. Hierarchy is itself no more than entropy towards internal market competition, unless there is a definition of the value of the system and how this value is managerially achieved. Entropic decline, as the recent history of ITT might suggest, is not an unreasonable possibility. Ultimately, the viabilty of a hierarchy rests on the operating systems of network management.

Duplication and differentiation

A strategy which utilizes the international network of subsidiaries presumes that the value in the co-ordination of activities across borders is worth its costs. To achieve sequential advantages through network co-ordination, two structural properties of duplication and differentiation are necessary. Duplication is a way to achieve gains through the arbitrage of factor, product, and technological markets. Differentiation permits the utilization of the variation in subsidiary and national resources for the benefit of the wider network.

Consider both in further detail. Duplication of resources is the organizational requisite to exploiting operating flexibility. For example, production shifting requires construction of two or more plants in different country sites producing identical products or components. Similarly, the transfer of innovations across countries necessitates the duplication of R&D efforts if these innovations reflect national capabilities and are not purchasable through market transactions.

Network management also consists of differentiation of tasks among subsidiaries. This differentiation may stem simply from the acquisition of foreign companies. Davidson (1982) reports that during the period between 1951 and 1976 some 69.5 per cent, 59.5 per cent, and 45 per cent of new US subsidiaries in Canada, the United Kingdom, and Continental Europe were established by acquisitions. Often, these acquisitions contribute not only marketing and distribution channels, but capabilities in research and development and manufacturing. Differentiation may also reflect the allocation of different capabilities to national subsidiaries. Available data show clearly that Asian subsidiaries to both US and Japanese firms tend to be sourcing sites for sales to third countries. Jacque (1986) found that US joint ventures in Japan have tended to expand to become functionally the regional headquarters serving Asian markets. Jacque's data also suggest that differentiation may reflect national variations, with the US being the source of product innovation, Japan for manufacturing. By differentiation of tasks, subsidiaries are assigned world-wide responsibilities for selected product development, manufacturing, or marketing.

International competence and integrative systems

Through duplication of resources and differentiation of subsidiary tasks, headquarters plays a major role as the co-ordinating centre for the management of the multinational network. This co-ordination has been facilitated by the gradual emergence of global organizational structures, which have been particularly well suited to the requirements of dyadic control between headquarters and subsidiary or regional managers. Global geographic or product line structures (or any combination of the two) cannot eradicate the trade-off between the benefits of utilizing subsidiaries' knowledge.
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of the local environment and the costs of acquiring and the information in product development and delivery. Indeed, the conflict is inherently irresolvable.

However, structural solutions can be augmented by designing integrative systems to permit the co-ordination of network activities (Kogut 1985). Integrative systems include not only international human resource management, but also pricing rules, environmental scanning, and decentralized incentives attached to planning and control. Pivotal to the operation of the international network is the delineation of cross-country functional roles and development of international competence.

The use of such systems can be further clarified by considering the design of a planning and control system under fluctuating exchange rates. A fundamental dilemma of a multinational corporation is that for planning and review purposes, country managers are frequently tracked against forecasted earnings. Fluctuating exchange rates denigrate, however, the significance of such a comparison, unless the tracking is adjusted for currency movements. Early solutions to this problem were addressed at the selection of the appropriate exchange rate (Lessard and Lorange 1977). The proposed solutions reveal, quite clearly, that the problem was formulated as one of dyadic control between the headquarters and subsidiary.

The issue is more than just one of monitoring performance. As shown in the earlier discussion, exchange rate fluctuations present profitable opportunities for the shifting of production. Lessard and Lightstone (1986) also note that fluctuating exchange rates have implications for investments in flexible manufacturing and in product mix, as the capability to change the material/labour inputs or product with different degrees of price sensitivity is more valuable the greater the exchange rate uncertainty. But a dyadic planning and control system with locked in sales forecasts and forecasted exchange rates reduces the incentives for managers to exploit these capabilities.30

The proposal by Lessard and Sharp (1984) has, in this light, far-reaching consequences. They suggest the use of contingent planning, by which country managers are asked to work out market share and profit goals based for different exchange rate scenarios. To move from a dyadic relationship requires, furthermore, the iteration of these plans across countries or regions, so that a movement in the dollar rate leads to enacting a plan which shifts sales to higher margin goods or production to plants located in countries benefiting by currency trends.

To enact such plans by delegation under structured incentives may be too slow and costly under conditions of rapid change. An alternative is the use of administered co-ordination over international production. This co-ordination can be exercised through the creation of task forces or committees. It is, thus, through lateral communication across borders and an enhancement of the functional authority of production managers that co-ordination is achieved.

Through integrative operating systems, the international competence of the corporation is fundamentally developed. Strategic implementation has long stressed the importance of organizational structures and product lines. For a strategy resting on sequential advantage and operating flexibility, the value of an international network is critically dependent upon the integration of functions across borders.

III. Conclusions

The above analysis suggests that the effective utilization of a coordinated network requires a reciprocal but asymmetrical dependence between headquarters and subsidiaries. Whereas localized learning may be fruitful, there are significant opportunity costs in allowing subsidiaries to evolve along unco-ordinated paths. These costs stem from the failure to exploit operating flexibility and the development of subsidiary, as opposed to corporate, resources and knowledge in the long run. Both the management of operating flexibility and the corporate development of the option value inherent in multinational resources require a strong and activist role for headquarters and the creation of integrative operating systems.

For many American and some European firms, there currently exists a window of opportunity to develop the capability to compete on network flexibility relative to Japanese competitors. Prior to 1940, the US was one among a few countries which dominated overseas investment. The post-war period has been largely characterized by the expansion of US firms overseas and the gradual catch-up of European and, more recently, Japanese firms.

In this gradual balancing of the economic fortunes of countries, it is unlikely that US and European multinational firms can count any longer on their technological and organizational skills to dominate world markets as previously. Rather, a central source of advantage lies in the cumulative experience of operating dispersed multinational resources. The economic potential is already at hand; the strategic question is whether the organizational support can be effectively designed and implemented.
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Notes

1 This data is provided in Kogut 1983.
2 For a review, see Caves 1982.
3 For an incisive and early discussion of these issues, see Ronstadt 1978, who distinguishes between technology units operating for local adaptation and those serving world markets. For an empirical study of the development of Swedish overseas R&D facilities, see Håkanson and Zander 1986.
4 See Lipsey and Kravis 1986.
6 Small firms may, however, require the international market. Indeed, there is some evidence that small Japanese firms were frequently the first to invest abroad (Tsurumi 1976) and, more generally non-dominant firms led their industries in overseas expansion (Mascarenhas 1985). But neither of these cases suggests that international competition led to enhanced economies of scale relative to dominant firms.
8 An excellent analytical description of this balance is given by Ghemawat and Spence 1986.
9 For analyses of economies of scope, manufacturing flexibility, and national strategies, see Fuller, Nicholson, and Stopford 1987, on the white goods industry in the UK and the rest of Europe, and Solvell 1987, on world-wide competition.
10 By appropriability hazards, it is meant the potential that the (excess) profits accruing to a firm due to its ownership of some proprietary skill or factor may be captured by imitators, suppliers, buyers, or other competitors.
11 In an article laying down some of the theoretical groundwork for the value-added chain, Wernerfelt 1984, describes the Japanese strategy in similar terms.
12 Sushil Vachani has, in a presentation at the Wharton School, February 1986, described a policy of flexible tooling and brand identification as characteristic of multinational corporations in India which face continual competitive pressures on the lower end of their product offerings.
13 To adopt the language of Flood and Lessard (1986), Ford is following a policy of global to global, i.e. global manufacturing for global sales, whereas GM is following a local to local strategy. Production shifting treats manufacturing as local in costs but global in production.
14 Stopford and Wells (1972) remain the seminal piece on this transformation.
15 Many of the recent ideas of the distributed intelligence and authority among subsidiaries is incipient in Perlmutter's (1969) notion of the 'geocentric' multinational corporation. Other writings which explicitly discussed the international firm as a network include Root (1973), Vernon (1979), Dunning (1981), and Kogut (1983).
16 The importance of autonomy (if not instability) and learning has filtered slowly, if not always consciously, from mainstream organizational theory into the writings on the international firm. See Burns and Stalker (1961: 5–6) for an early discussion of holography; March (1976) on the complexity of means and end relationships; Ouchi (1980) on the use of solidarity when formal controls are weak; and Mintzberg and McHugh (1985) on management by an 'adhocracy'.
18 For a case description of this problem, see Paul Browne, Vick International Division, Harvard Business School, 179–268.
19 For an early discussion of the differentiation of subsidiaries, see Hedlund 1980. See also Bartlett and Ghoshal 1986, and Ghoshal and Nohria 1987.

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