Creating Worldwide Innovation and Learning: 
*Exploiting Cross-Border Knowledge Management*

In the information-based, knowledge-intensive economy of the 21st century, entities are not competing only in terms of their traditional ability to access new markets and arbitrage factor costs. Today the challenge is to build transnational organizations that can sense an emerging consumer trend in one country, link it through a new technology in another, develop a creative new product or service in a third, then diffuse that innovation rapidly around the world. In this chapter, we contrast this transnational innovation process with more traditional “center-for-global” and “local-to-local” approaches. We then describe the nature of the organizational capabilities that must be developed to make these central, local, and transnational innovations more effective.

In Chapter 3, we described how companies competing in today's global competitive environment are being required to build layers of competitive advantage—in particular, the ability to capture global scale efficiencies, local market responsiveness, and worldwide learning capability. As MNEs have found ways to match one another in the more familiar attributes of global scale efficiency and local responsiveness, the leading-edge competitive battles have shifted to companies’ ability to link and leverage their resources to capture advantage through worldwide learning.

The very largest MNEs often need to manage an enormous volume of innovations. A company such as Sony owns more than 30,000 patents. With this sort of breadth of proprietary intellectual property, the challenge is somehow to maximize the return from accumulated learning. The most profitable department in a major MNE, on a per employee basis, often is the one responsible for licensing intellectual property. Many technology-intensive MNEs now generate more profit from licensing than they do from their own manufacturing operations.

In a competitive environment in which the ability to develop and rapidly diffuse innovations around the world is vital, offshore subsidiaries are being asked to take on important new roles. They must act as the sensors of new market trends or technological developments; they must be able to attract scarce talent and expertise; and they must be able to act collectively with other subsidiaries to exploit the resulting new products and initiatives worldwide, regardless of where they originated. Yet developing this capability to create, leverage, and apply knowledge worldwide is not a simple task for most large MNEs. Although people are innately curious and naturally motivated to learn from one another, most modern corporations are constructed in a way that constrains and
sometimes kills this natural human instinct. In this chapter, we focus on one of the most important current challenges facing MNE management: how to develop and diffuse knowledge to support effective worldwide innovation and learning.

Central, Local, and Transnational Innovation

Traditionally, MNEs' innovative capabilities were dominated by one of two classic processes. In what we describe as the center-for-global innovation model, the new opportunity was usually sensed in the home country; the centralized resources and capabilities of the parent company were brought in to create the new product or process, usually in the main R&D center; and implementation involved driving the innovation through subsidiaries whose role it was to introduce that innovation to their local market. Pfizer's development of Viagra or Intel's creation of Pentium processors are two classic examples of this model. In contrast, what we call local-for-local innovation relies on subsidiary-based knowledge development. Responding to perceived local opportunities, subsidiaries use their own resources and capabilities to create innovative responses that are then implemented in the local market. Unilever's development of a detergent bar in response to the Indian market's need for a product suitable for stream washing is a good illustration of the process, as is Philippines-based Jollibee's strategy of adapting its fast-food products to the local market preferences of each country it entered.

Most MNEs have tried to develop elements of both models of innovation, but the tension that exists between the knowledge management processes supporting each usually means that one dominates. Not surprisingly, the center-for-global innovation tends to dominate in companies we describe as global or international, whereas local-for-local processes fit more easily into the multinational strategic model. However, in recent years, traditional strategic mentalities have evolved into two new transnational innovation processes. Locally leveraged innovation involves ensuring that the special resources and capabilities of each national subsidiary are available not only to that local entity but also to other MNE units worldwide. For example, two of Sara Lee Corporation's biggest new brands in the household and body care division in the 1990s—Sanex and Ambi Pur—were first developed in Spain and subsequently rolled out on a worldwide basis. Globally linked innovation pools the resources and capabilities of many different units—typically at both the parent company and the subsidiary level—to create and manage an activity jointly. For example, the idea for Volkswagen's New Beetle came originally out of the U.S. head office in Detroit; the design was led by the company's design studios in California; the development and engineering work was conducted at corporate headquarters in Wolfsburg, Germany; and the final production was implemented by numerous VW plants around the world.

Both these transnational innovation models rely on the sophisticated ability to take market intelligence developed in one part of the organization, perhaps link it to specialized expertise located in a second entity and a scarce resource in a third, and then eventually diffuse the new product or proposal worldwide. This innovative process was the kind Procter and Gamble first developed through the creation of "Eurobrand" development teams that resulted in the creation of the heavy-duty liquid detergent, Vizir. Recognizing the power of this cross-unit innovation and learning capability, the
company gradually built it into a core competence that it now regards as the centerpiece of its global competitive strategy.

Although these processes are becoming more widespread, they have supplemented rather than replaced the traditional center-for-global and local-for-local innovation processes. In a competitive environment, most companies recognize the need to engage their resources and capabilities in as many ways as they can. The challenge is to build an organization that can simultaneously facilitate all four processes of innovation and learning, which requires that they understand not only the power of each but also their limitations:

- The greatest risk of center-for-global innovation is market insensitivity and the accompanying resistance of local subsidiary management to what they may view as inappropriate new products and processes.
- Local-for-local innovations often suffer from needless differentiation and “reinvention of the wheel” caused by resource-rich subsidiaries trying to protect their independence and autonomy.
- Locally leveraged innovations can be threatened by the “not-invented-here” syndrome that often blocks the successful transfer of products and processes from the innovative subsidiary to others in the company.
- The major impediment to globally linked innovation tends to be the high coordination cost required to link widely dispersed assets, resources, and capabilities into an effective, integrated network of free-flowing ideas and innovations.

Building a portfolio of innovative processes to drive worldwide learning requires that the companies overcome two related but different problems. Not only must they avoid the various pitfalls associated with each process, they must also find ways to overcome the organizational contradictions among them as they try to manage all the sources of innovation simultaneously. The well-known NUMMI partnership between General Motors (GM) and Toyota illustrates this challenge. Located in Fremont, California, NUMMI quickly became one of the highest productivity auto plants in North America. Yet despite the active involvement of hundreds of GM managers in running the plant, and GM’s stated intention of learning from Toyota, the American partner was slow to create an effective mechanism for transferring the knowledge gained through NUMMI to other GM plants. Although learning ultimately occurred, as Table 5–1 indicates, subsequent analysis revealed that a lengthy set of learning obstacles had to be overcome.

Making Central Innovations Effective

The key strength on which many Japanese companies built their global leadership positions in a diverse range of businesses, from zippers to automobiles, lay in the effectiveness of their center-for-global innovations. This is not to say that many did not use some other operative modes, but in general, the Japanese became the champion managers of centralized innovation in the 1980s and have remained so. Three factors stand out as the most important explanations of Japanese success in managing the center-for-global process: (1) gaining the input of subsidiaries into centralized activities;
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### Table 5-1 Overcoming Learning Obstacles

<table>
<thead>
<tr>
<th>Learning Obstacle</th>
<th>GM Actions that Helped Overcome the Obstacles</th>
</tr>
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<tbody>
<tr>
<td>Causal ambiguity (i.e., managers do not understand the relationship between organizational actions and outcomes)</td>
<td>Training; visits to NUMMI by GM and supplier employees; sharing of information facilitated by the Technical Liaison Office (TLO); creation of a network of NUMMI-experienced managers; direct involvement of GM leadership; time (about eight years before real learning began).</td>
</tr>
<tr>
<td>Lack of leadership commitment to learning</td>
<td>Jack Smith appointed CEO in 1992; former NUMMI advisors promoted within GM; GM leaders developed an understanding of lean production.</td>
</tr>
<tr>
<td>Unwillingness to invest in learning</td>
<td>Expansion of the scope of the TLO’s mandate to encompass a broad set of learning activities; replication of the TLO for several GM plants.</td>
</tr>
<tr>
<td>Failure to build a system that captures the learning of individual managers</td>
<td>Development of advisor system (personal development requirements, GM mentors, planned reentry assignments); learning network of NUMMI alumni; NUMMI assignments recognized within GM as important and desirable developmental experiences.</td>
</tr>
<tr>
<td>Not-invented-here syndrome</td>
<td>Learning network; experience with lean manufacturing in NUMMI; establishing new facility in Germany with the objective “to build a plant like NUMMI”; superior performance within NUMMI relative to other GM plants.</td>
</tr>
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(2) ensuring that all functional tasks are linked to market needs; and (3) integrating value chain functions such as development, production, and marketing by managing the transfer of responsibilities among them.

### Gaining Subsidiary Input: Multiple Linkages

The two most important problems facing a company with highly centralized operations are that those at the center may not understand market needs, and those in the subsidiaries required to implement the central innovation may not be committed to it. These problems are best addressed by building multiple linkages between headquarters and overseas subsidiaries to give not only headquarters managers a better understanding of country-level needs and opportunities but also subsidiary managers greater access to and involvement in centralized decisions and tasks.

Matsushita, for example, does not try to limit the number of linkages between headquarters and subsidiaries or focus them through a single point, as many companies do for the sake of efficiency. Rather, it tries to preserve the different perspectives, priorities,
and even prejudices of its diverse groups worldwide and ensure that they have linkages to those in the headquarters who can represent and defend their views.

Responding to National Needs: Market Mechanisms

Like many other companies, Matsushita has created an integrative process to ensure that headquarters managers responsible for R&D, manufacturing, marketing, and so on are not sheltered from the constraints and demands felt by managers on the front lines of the operations. One of the key elements in achieving this difficult organizational task is the company's willingness to use internal "market mechanisms" to direct and regulate central activities.

For example, approximately half of Matsushita's total research budget is allocated not to research laboratories but to the product divisions. The purpose of the split budget is to create a context in which technologically driven and market-led ideas can compete for attention. Each year, the product divisions suggest a set of research projects that they would like to sponsor. At the same time, the various research laboratories hold annual exhibitions and write specific proposals to highlight research projects they want to undertake. The engineering and development groups of the product divisions mediate the subsequent contracting and negotiation process. Specific projects are sponsored by the divisions and allocated to the laboratories or research groups of their choice, along with requisite funds and other resources.

Managing Responsibility Transfer: Personnel Flow

In local-for-local innovation processes, cross-functional integration across research, manufacturing, and marketing is facilitated by the smaller size and closer proximity of the units responsible for each stage of activity. Because this is not true when parent company units take the lead role in the development and manufacture of new products and processes, more centralized organizations must build alternative means to integrate different tasks.

At Matsushita, for example, the integrative systems rely heavily on the transfer of people. The career paths of research engineers are structured to ensure that a majority of them spend about five to eight years in the central research laboratories engaged in pure research, then another five years in the product divisions in applied research and development, and finally in a direct operational function, such as production or marketing, wherein they take line management positions for the rest of their working lives. More important—and in stark contrast to the approach in most Western companies—each engineer usually makes the transition from one department to the next coincident with the transfer of the major project on which he or she has been working. This parallel advance ensures that specific knowledge about the project moves with the individual.

Another mechanism for cross-functional integration in Matsushita works in the opposite direction. Wherever possible, the company tries to identify the manager who will head the production task for a new product under development and makes him or her a full-time member of the research team from the initial stage of the development process. This system not only injects direct production expertise into the development team but also facilitates the transfer of the project after the design is completed. Matsushita also
uses this mechanism as a way to transmit product expertise from headquarters to its worldwide sales subsidiaries.

**Making Local Innovations Efficient**

If the classic global companies in Japan are the champion managers of central innovation, the archetypal multinational companies from Europe are often masters at managing local innovations. Of the many factors that facilitate local-for-local innovations in European companies, three abilities are the most significant: to empower local management in national subsidiaries, to establish effective mechanisms for linking these local managers to corporate decision-making processes, and to force tight cross-functional integration within each subsidiary.

**Empowering Local Management**

Perhaps the most important factor supporting local innovations is the dispersal of the organizational assets and resources and the delegation of authority that occur so easily in decentralized federation companies. Why would companies such as Nestlé or Philips establish a structure in which the country manager is king? Consider the example of Philips. Since it was founded in 1891, Philips has recognized the need to expand its operations beyond its small domestic market, but the successive barriers—poor transport and communication linkages in the early decades of the century, protectionist pressures in the 1930s, and the disruption of World War II—encouraged the company to build national organizations with substantial degrees of autonomy and self-sufficiency. Such dispersed managerial and technological resources, coupled with local autonomy and decentralized control over resources, enabled subsidiary managers to be more effective in managing local development, manufacturing, and other functional tasks.

**Linking Local Managers to Corporate Decision-Making Processes**

Whereas local resources and autonomy make it feasible for subsidiary managers to be creative and entrepreneurial, linkages to corporate decision-making processes are necessary to make these local-for-local tasks effective for the company as a whole. In many European companies, a cadre of entrepreneurial expatriates plays a key role in developing and maintaining such linkages.

At Philips, many of the best managers spend most of their careers in national operations, working for three to four years in a series of subsidiaries—jobs that are often much larger and have higher status than those available in the small home country market of the Netherlands.

Not surprisingly, such a career assignment pattern has an important influence on managerial attitudes and organizational relationships. The expatriate managers tend to identify strongly with the national organization’s point of view, and this shared identity creates a strong bond and distinct subculture within the company. In contrast to Philips, Matsushita has been able to generate very little interaction among its expatriate managers, who tend to regard themselves as parent-company executives temporarily on assignment in a foreign company.
Integrating Subsidiary Functions

Finally, the local innovativeness of decentralized federation organizations is enhanced because of the strong cross-functional integration that typically exists within each national operation. Most Philips subsidiaries use integration mechanisms at three organizational levels. For each project, there is what Philips calls an “article team” consisting of relatively junior managers from the commercial and technical functions. It is the responsibility of this team to evolve product policies and prepare annual sales plans and budgets.

At the product level, cross-functional coordination is accomplished through a product group management team of technical and commercial representatives, which meets once a month to review results, suggest corrective actions, and resolve any interfunctional differences. Restraining control and conflict resolution to this level facilitates sensitive and rapid responses to initiatives and ideas generated at the local level.

The highest subsidiary-level coordination forum is the senior management committee (SMC), which consists of the top commercial, technical, and financial managers in the subsidiary. Acting essentially as a local board, the SMC coordinates efforts among the functional groups and ensures that the national operation retains primary responsibility for its own strategies and priorities. Each of these three forums facilitates local initiative by encouraging that issues be resolved without escalation for approval or arbitration.

Making Transnational Processes Feasible

The complexity of the innovation and learning processes in a multinational corporation is significantly exacerbated by the fact that new opportunities can emerge from anywhere—and often a long way from either complementary capabilities or the key decision makers. For example, in 2001, when GM’s global product head saw the new sports coupe that GM’s Australian subsidiary had launched as the Holden Monaro, he decided it was the ideal car to introduce in the United States as a resurrection of the Pontiac GTO. With a domestic demand of only 5,000 Monaros, the GM Holden had to expand its capacity significantly to the expected export volume of 18,000 Pontiacs after the 2003 U.S. launch of the GTO.

In a case such as this, the transnational company needs to embrace a mindset in which subsidiary managers are encouraged to take the initiative and headquarters managers are more accepting of the capabilities and potential of their overseas operations. And it needs to build linkages among different units of the company (e.g., between the Australian design and production operations and GM’s Detroit-based global marketing and sales operation) to leverage existing resources and capabilities, regardless of their locations, and exploit opportunities that arise in any part of the company’s dispersed operations.

In many MNEs, three simplifying assumptions traditionally have blocked the organizational capabilities necessary for managing such transnational operations. The need to reduce organizational and strategic complexity made these assumptions extremely widespread among large MNEs:

• An often implicit assumption that roles of different organizational units are uniform and symmetrical. This assumption leads companies to manage very different businesses, functions, and national operations in essentially the same way.
• An assumption, conscious or unconscious, that headquarters–subsidiary relationships should be based on clear and unambiguous patterns of dependence or independence.
• The assumption that corporate management has a responsibility to exercise decision making and control uniformly.

Companies that are most successful in developing transnational innovations challenge these assumptions. Instead of treating all businesses, functions, and subsidiaries the same way, they systematically differentiate tasks and responsibilities. Instead of seeking organizational clarity by basing relationships on dependence or independence, they build and manage interdependence among the different units of the companies. And instead of considering control their key task, corporate managers search for complex mechanisms to coordinate and co-opt the differentiated and interdependent organizational units into sharing a vision of the company’s strategic tasks.

From Symmetry to Differentiation

Like many other companies, Unilever built its international operations with an implicit assumption of organizational symmetry. Managers of diverse local businesses, with products ranging from packaged foods to chemicals and detergents, all reported to strongly independent national subsidiary managers, who in turn reported through regional directors to the board. In the post–World War II era, as management began to recognize the need to capture potential economies across national boundaries and transfer learning worldwide, product coordination groups were formed at the corporate center. Under the assumption of organizational symmetry, the number of coordination groups grew from three in 1962 to six in 1969 and to ten by 1977.

By the early 1980s, however, there was a growing recognition that different businesses faced different demands for integration and responsiveness. Whereas standardization, coordination, and integration paid high dividends in the chemical and detergent businesses, for example, important differences in local tastes and national cultures impeded the same degree of coordination in foods.

As Unilever tackled the challenge of managing some businesses in a more globally coordinated manner, it was also confronted with the question of what to coordinate. Historically, most national subsidiaries chose to develop, manufacture, and market products they thought appropriate. Over time, however, decentralization of all functional responsibilities became increasingly difficult to support. For the sake of cost control and competitive effectiveness, Unilever needed to break with tradition and begin centralizing European product development and purchasing, but it was less compelled to pull local sales and promotional responsibilities to the center.

In addition to differentiating the way they managed their various businesses and functions, most companies eventually recognized the importance of differentiating the management of diverse geographic operations. Although various national subsidiaries operated with very different external environments and internal constraints, operations in Sydney, Singapore, and Shanghai often reported through the same channels, were managed by standardized planning and control systems, and worked under a set of common and generalized subsidiary mandates.

Recognizing that such symmetrical treatment could constrain strategic capabilities, many companies made changes. At Unilever, for example, Europe’s highly competitive
markets and closely linked economies led management gradually to increase the role of European product coordinators until they eventually had direct line responsibility for all operating companies in their businesses. In Latin America, however, national management maintained its historic line management role, and product coordinators acted only as advisers. Unilever has thus moved in sequence from a symmetrical organization managed through a uniformly decentralized federation to a much more differentiated one: differentiating first by product, then by function, and finally by geography.

From Dependence or Independence to Interdependence

As we described in Chapter 4, national subsidiaries in decentralized federation organizations enjoyed considerable independence from the headquarters, whereas those in centralized hub organizations remained strongly dependent on the parent company for resources and capabilities. But the emerging strategic demands make organizational models based on such simple interunit dependence or independence inappropriate. Independent units risk being picked off one by one by competitors whose coordinated global approach gives them two important strategic advantages: the ability to integrate scale-efficient operations and the opportunity to cross-subsidize the losses from battles in one market with funds generated by profitable operations in others. However, foreign operations that depend totally on a central unit run the risk of being unable to respond effectively to strong national competitors or to sense potentially important local market or technical intelligence.

But it is not easy to change relationships of dependence or independence that have been built over a long history. Most companies found that attempts to improve interunit collaboration by adding layer upon layer of administrative mechanisms to foster greater cooperation were disappointing. Independent units feigned compliance while fiercely protecting their independence, and dependent units discovered that the new cooperative spirit bestowed little more than the right to agree with those on whom they depended.

To create an effective interdependent organization, two requirements must be met. First, the company must develop a configuration of resources that is neither centralized nor decentralized but is both dispersed and specialized. Such a configuration lies at the heart of the transnational company’s integrated network mode of operations, as we already discussed in Chapter 4.

Second, it must build interunit integration mechanisms to ensure that task interdependencies lead to the benefits of synergy rather than the paralysis of conflict. Above all else, interunit cooperation requires good interpersonal relations among managers in different units. The experiences of Ericsson, the Swedish telecommunications company, suggest that the movement of people is one of the strongest mechanisms for breaking down local dogmas. Ericsson achieved this with a long-standing policy of transferring large numbers of people back and forth between headquarters and subsidiaries. Whereas its Japanese competitor NEC may transfer a new technology through a few key managers sent on temporary assignment, Ericsson will send a team of 50 or 100 engineers and managers for a year or two; whereas NEC’s flow is primarily from headquarters to subsidiary, Ericsson’s is a balanced two-way flow in which people come to the parent company to both learn and provide their expertise; and whereas NEC’s transfers are predominantly Japanese, Ericsson’s multidirectional process involves all nationalities.
However, any organization in which there are shared tasks and joint responsibilities requires additional decision-making and conflict-resolution forums. In Ericsson, the often divergent objectives and interests of the parent company and the local subsidiary are exchanged in the national company's board meetings. Unlike many companies whose local boards are designed solely to satisfy national legal requirements, Ericsson uses its local boards as legitimate forums for communicating objectives, resolving differences, and making decisions.

From Unidimensional Control to Differentiated Coordination

The simplifying assumptions of organizational symmetry and dependence (or independence) allowed the management processes in many companies to be dominated by simple controls—tight operational controls in subsidiaries that depend on the center, or a looser system of administrative or financial controls in decentralized units. When companies began to challenge the assumptions underlying organizational relationships, however, they found they also needed to adapt their management processes. The growing interdependence of organizational units strained the simple control-dominated systems and underlined the need to supplement existing processes with more sophisticated ones.

As organizations simultaneously became more diverse and more interdependent, there was an explosion in the number of issues that had to be linked, reconciled, or integrated. But the costs of coordination are high, in both financial and human terms, and coordinating capabilities are always limited. Most companies, though, tended to concentrate on a primary means of coordination and control—"the company's way of doing things."

In analyzing how managers might develop a coordination system that best fits the needs of various functions and tasks, it is helpful to think about the various flows among the organizational units involved in the execution of each task. Three flows are the lifeblood of any organization but are of particular importance in a transnational company. The first is the flow of goods: the complex interconnections through which companies source their raw materials and other supplies, link the flows of components and subassemblies, and distribute finished goods. The second is the flow of resources, which encompasses not only the allocation of capital and repatriation of dividends but also the transfer of technology and the movement of personnel throughout the system. The third is the flow of valuable information and knowledge—from raw data and analyzed information to accumulated knowledge and embedded expertise—that companies must diffuse throughout the worldwide network of national units.

It can be very difficult to coordinate the flows of goods in a complex integrated network of interdependent operations. But in most companies, this coordination process can be managed effectively at lower levels of the organization through clear procedures and strong systems—or in other words, through a formalized management process. For example, within its network of manufacturing plants in different countries, Ericsson learned to coordinate product and material flows by standardizing as many procedures as possible and formalizing the logistics control.

It is more difficult to coordinate flows of financial, human, and technological resources. Allocation of these scarce resources represents the major strategic choices the company makes and must therefore be controlled at the corporate level. We have
described the transnational company as an organization of diverse needs and perspectives, many of which conflict and all of which are changing. In such an organization, only managers with an overview of the total situation can make critical decisions about the funding of projects, the sharing of scarce technological resources, and the allocation of organizational skills and capabilities. Managing the flow of resources is a classic example of the need for coordination by centralization.

Perhaps the most difficult task is to coordinate the huge flow of strategic information and proprietary knowledge required to operate a transnational organization. The diversity and changeability of the flow make it impossible to coordinate through formal systems, and the sheer volume and complexity of the information would overload headquarters if coordination were centralized. The most effective way to ensure that worldwide organizational units analyze their diverse environments appropriately is to sensitize local managers to broader corporate objectives and priorities. That goal is best reached by transferring personnel with the relevant knowledge or creating organizational forums that allow for the free exchange of information and foster interunit learning. In short, the socialization process is the classic solution for the coordination of information flows.

Naturally, none of these broad characterizations of the fit between flows and processes is absolute, and companies use a variety of coordinative mechanisms to manage all three flows. Goods flows may be centrally coordinated, for example, for products under allocation, when several plants operate at less than capacity, or if the cost structures or host government demand change. And as information flows become routine, they can be coordinated through formalization if appropriate management information systems have been installed.

Realistically, a one-size-fits-all approach to capturing the benefits of innovation will not work in a large MNE. As Figure 5-1 suggests, the most effective way to exploit the

**Figure 5-1 Mobilizing Knowledge**

![Diagram](source: Jose Santos, Yves Doz, and Peter Williamson, "Is Your Innovation Process Global?" *MIT Sloan Management Review* 45, no. 4 (2005), p. 36.)
knowledge within an organization depends on the complexity of the technology itself and the understanding of the focal market. In practice, the best way to capture innovation will sometimes be to move people and sometimes to move or exchange the information.

**Concluding Comments**

The approaches to innovation in MNEs have changed considerably. Whereas once MNEs relied on simple models of centralized or localized innovation, the vast majority now find it necessary to build their innovation processes around multiple operating units and geographically disparate sources of knowledge. In this chapter, we identify three generic approaches to innovation, and for each, we identify its typical limitations and the approaches MNEs can use to overcome them. To be clear, there is no one right way of managing the innovation process in an MNE, because each company has its own unique administrative heritage that it cannot and should not disavow. Nonetheless, it is possible to identify certain principles—around the differentiation of roles, interdependence of units, and modes of control—that underpin the development of an effective transnational organization.

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**Case 5-1  Time Warner Inc. and the ORC Patents**

In early July 1992, John Adamson, president of Optical Recording Corporation (ORC), sat depressed and second-guessed his company's decision to sue Time Warner Inc. for patent infringement. An in-house patent counsel from the U.S. Philips Corporation, whose parent firm developed and licensed the compact disc (CD) technology in partnership with Sony Corporation, had just finished his testimony in the Wilmington, Delaware, courtroom.

The Philips attorney had just advised the court that Philips International N.V. had indeed signed a license agreement with ORC but only to “get rid of ORC with a modest nuisance payment.” He had gone on to say that in spite of their decision to accept a license from ORC, the Philips engineers and attorneys had never believed that the Russell patents owned by ORC were valid nor that any compact disc products infringed these patents. Adamson watched in shock as the Philips man made his way out of the courtroom.

Given that Time Warner had mounted a very credible defense and that ORC's entire licensing
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reputation matter? If you are from Mars, would you not say that those with worse reputations are valued more highly? . . . This debate which still goes on is about deep-seated values. Recruitment, motivation, great place to work . . . these should all in theory be expressed in market value at the end, but in practice may take more than one period to do so. But, in the end, I firmly believe that the more a company reflects the values of the society from which its people are drawn, the better the company is.

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Reading 5-1  Unleash Innovation in Foreign Subsidiaries

Julian Birkinshaw and Neil Hood

The challenge of going global is not simply to sell products wherever customers are but to take advantage of bright ideas wherever they spring up. Indeed, growth-triggering innovation often emerges in foreign subsidiaries—from employees closest to customers and least attached to the procedures and politesse of the home office. NCR's automatic teller business, for instance, took off only when the development team shifted activities from corporate headquarters in Dayton, Ohio, to Dundee, Scotland. Under the guidance of a charismatic leader with scrappy persistence, NCR's Scottish operation became the largest manufacturer of ATMs in the world and brought the moribund Dundee manufacturing center back from the brink of extinction.

But as every multinational manager knows, making the most of foreign subsidiaries is tricky. Too often, heavy-handed responses from headquarters squelch local enthusiasm and drive out good ideas—and good people. Even when headquarters tries to do the right thing by democratizing the innovation process and ceding more power to subsidiaries, the results are not always stellar. (See the box “A Worst-Case Scenario.”)

For the last eight years, we have studied more than 50 multinational corporations to understand what companies can do differently to encourage innovation in foreign subsidiaries—what we call “innovation at the edges.” Our observations suggest that when companies start to think of foreign subsidiaries as peninsulas rather than as islands—as extensions of the company's strategic domain rather than as isolated outposts—innovative ideas flow more freely from the periphery to the corporate center. (We first heard the peninsula concept articulated by managers at Monsanto Canada as they grappled with the challenge of redefining their role after the 1989 Free Trade Agreement with the United States.) But even more than a change in mind-set, corporate executives require a new set of practices, with two aims: to improve the formal and informal channels of communication between headquarters and subsidiaries and to give foreign subsidiaries more authority to see their ideas through. Only then can companies ensure that bright ideas—and the smart people who dream them up—don't end up marooned on desert islands.

Peninsulas, Not Islands

Fostering innovation in foreign subsidiaries is a familiar goal, but it is extremely difficult to achieve in real life. In the past, multinationals recognized the
his own company, this time better equipped, he hoped, to control its destiny.

McTaggart's experience is all too common. His idea was consonant with the company's entrepreneurial spirit and was aligned with corporate growth targets, but McTaggart faced obstacle after obstacle: lack of fit with existing businesses, changing agendas at the top, risk-averse managers, culture clashes, and time lost fighting internal resistance. He lost a great opportunity to take his ideas to the limit, and the company wasted time, money, and that precious commodity, initiative.

need to tap into a few select subsidiaries, but today successful corporate executives recognize that good ideas can come from any foreign subsidiary. (See the box “Three Eras of the Multinational.”) The challenge is to find ways to liberalize, not tighten, internal systems and to delegate more authority to local subsidiaries. It isn't enough to ask subsidiary managers to be innovative; corporate managers need to give them incentives and support systems to facilitate their efforts. That's more easily said than done, of course, but our observations suggest four approaches:

- Give seed money to subsidiaries.
- Use formal requests for proposals.
- Encourage subsidiaries to be incubators.
- Build international networks.

When these practices are set in motion, we can expect far more creative and genuinely innovative ideas to emerge from the edges of the corporation. Let's take a look at each approach.

Give Seed Money to Subsidiaries. It's easy to argue that subsidiary companies need access to seed money, but corporate executives must strike a balance between demanding that subsidiaries meet short-term results and granting them sufficient freedom to pursue new ideas. Put too much focus on the former, and you know that subsidiaries will hide profits—not to pursue their new ideas but to protect themselves in case of a rainy day. Put too much emphasis on the latter, and there will be a proliferation of so-called strategic projects whose returns will fall below target levels. One way to achieve the necessary balance is to give subsidiaries discretionary budgets to test ideas within limits imposed by corporate headquarters. But it's also a matter of who holds the purse strings for which types of investments. Major investments can and should be made at a corporate level. But seed money can be handled on a more decentralized basis by giving local subsidiaries discretionary budgets to test ideas.

For example, in the late 1980s, Hilary Smith, a market development manager at 3M Canada, identified a market for systems that would allow library visitors to check out books without assistance. Her proposal fell on deaf ears at corporate headquarters, partly because the market for traditional library security machines in the United States was still growing rapidly. She pursued it anyway, using seed funding from the Canadian R&D budget to put together a prototype. At the American Library Association meeting where the prototype debuted, she discovered that 3M Australia had been working on a similar product. Hearing enthusiastic comments from potential customers, she and her Australian counterpart agreed to work together to bring out a single 3M product. Additional funding was supplied by the U.S.-based library systems business unit, and Smith was given worldwide responsibility for the product's launch. Manufacturing was transferred to St. Paul, Minnesota, where the U.S. business unit was based. The Australian subsidiary retained product and business development rights in Australia and New Zealand. Self-Check is now one of the main products in 3M Library Systems' portfolio—thanks in no small part to the initial funding from the Canadian and Australian divisions.

It often happens, of course, that an idea seeded by a business unit, having developed into a viable
Three Eras of the Multinational

Multinationals have evolved through three phases over the past 50 years, both in terms of their geographic scope and the roles played by their foreign subsidiaries:

Paternalism
In the first half of the twentieth century, the dominant model for multinationals was to innovate in the home country and then roll out new products across the corporate empire. U.S. companies like Caterpillar, IBM, and Procter & Gamble became masters of this model. But as foreign markets for the established multinationals became more sophisticated and as the foreign subsidiaries in those countries grew stronger, it gradually became apparent that the home country did not have a monopoly on innovation and leading-edge thinking.

Expansionism
In the 1970s and 1980s, many multinational corporations set up "scanning units" to tap into the ideas coming out of key foreign markets, and they built R&D sites abroad to gain access to scientific communities. But welcome as they were, corporate investments of this type represented but a halfhearted attempt to tap into the ideas and opportunities in foreign markets. There were two major problems. First, scanning units and foreign R&D labs were attractive in principle but difficult to manage effectively. For example, many European multinationals, including Volkswagen, Volvo, and Ericsson, established development centers in California, but in most cases the units struggled to successfully transfer and integrate their ideas with those of their parent companies. Second, by defining certain units as responsible for picking up new ideas, corporate managers were implicitly signaling to all other foreign units that they did not have to bother. Such an approach limited growth opportunities to a few select markets or technologies and dampened the initiative of subsidiary managers in other foreign units.

Liberalism
A third model, now emerging, takes a more democratic approach to the pursuit of new opportunities. It builds on two basic arguments: first, useful new business ideas can emerge from anywhere in the world, particularly those parts of the organization that are in direct contact with customers, suppliers, and other external parties. Second, the greater the distance from the center, the less constrained individuals are by the traditions, norms, and belief structures of the corporation. This is the argument that subsidiaries should be viewed as peninsulas rather than islands. As multinationals take such an approach, we can expect far more creative and genuinely innovative ideas to emerge from the edge of the corporation than from the center. The challenge becomes one of tapping into the ideas and leveraging them effectively.

Encouraged to propose "high impact" projects—those with broad, cross-business-unit applications—which are then funded from a corporate budget. One such project led to the creation of a state-of-the-art electrical transformer factory in Athens, Georgia. Dubbed the "factory of the future," the test factory is fully automated, from ordering through production to the delivery of the finished product. The results have been truly spectacular: labor costs have been cut by half, cycle times have been cut by 90%, and...
time from order entry to shipping has been reduced from 30 days to one day.

**Use Formal Requests for Proposals** Providing seed money to subsidiaries is a start, but funds alone won’t generate valuable innovations from a passive subsidiary manager. Executives must also find ways to increase the demand for seed money. To that end, it helps to think of subsidiaries as freelance contractors that are granted licenses to manufacture or develop certain products. When you want to make a new investment, you send out a request for proposal (RFP), which may yield three or four competing bids. Volkswagen’s decision to manufacture the New Beetle in Puebla, Mexico, for example, was the result of a lengthy review in which the Puebla site was compared with sites in Germany and Eastern Europe. It also required heavy-duty championing from executives in Mexico and the United States, who saw a local production base as essential to their plans for reviving the VW brand in North America.

An RFP approach can also stimulate subsidiaries to develop creative solutions to corporate challenges. Monsanto’s Canadian management team picked up on a tentative corporate plan to build a dry-formulation plant for its Roundup herbicide and pushed hard for that investment to be made in Canada. In preparing their proposal, they were able to shape the product’s specifications—as any contracting company knows, that’s the only way to win competitive tenders. But the members of the Canadian group knew they wouldn’t get the nod based on cost alone, so they developed their proposal around such innovative practices as self-directed work teams, empowerment, and outsourcing. Their proposal focused on the competencies of the Canadian operation and demonstrated how the investment could help forestall a threat from another company rumored to be developing a competing product in central Canada. Consequently, the Canadian proposal won the contract, beating out a Monsanto site in Louisiana and an independent manufacturer in Iowa.

We have seen this approach to new investments work well in a variety of multinational companies. But we have also seen companies shy away from it because the costs of reviewing and evaluating multiple bids can be prohibitive. The best approach is to limit the list of competing proposals to three or four—as long as the narrowing process is designed to increase, rather than suppress, variance. It is best to avoid formal reviews in which two mediocre options are set up alongside the preferred candidate for the sake of appearances. This happens all too often, and it is a splendid way of killing the initiative of subsidiary managers.

**Encourage Subsidiaries to Be Incubators** Subsidiary managers often comment that their distance from headquarters makes it hard for them to attract attention. But distance can become an advantage. It allows foreign subsidiaries to experiment with unconventional or unpopular projects that would be closed down if they were more visible to headquarters. It allows them to become incubators that can provide shelter and resources for businesses that are not yet strong enough to stand on their own.

Consider the actions of Ulf Borgström, manager of the Swedish subsidiary of a U.S. minicomputer manufacturer. The company was struggling in the early 1990s because of a weak product line, and the Swedish subsidiary was on the verge of bankruptcy. Borgström was able to turn around the operation by disregarding orders from headquarters and pursuing whatever business he could find in the Swedish market. Unable to sell his own company’s products, he decided to offer service contracts on competitors’ products. Needless to say, his superiors in the home office immediately discredited his strategy, but Borgström persevered, and the service contracts proved to be a significant factor in the subsidiary’s revival. By 1997, headquarters had come around to his way of thinking, and the Swedish subsidiary was hailed as a success story.

Or take Ericsson as another example. Outsiders know that Ericsson has successfully caught two of the biggest waves in the telecommunications business in recent years: the emergence of second-generation digital radio technology and the subsequent boom in the handsets business. Insiders admit, however, that both businesses struggled to gain acceptance while they were being developed and
would have been killed if their sponsors had not been persistent. In fact, in the latter case, Åke Lundqvist, the president of the nascent handsets unit, moved himself and his team to southern Sweden, which gave him the time and space to get the business going without interference from corporate executives. More recently, Ericsson has created a new unit called Ericsson Business Innovation, whose mandate, in the words of its director, Jöran Hoff, “is to create the next core business” for the corporation. It acts as a venture fund by providing seed money and management expertise to promising new projects—not just Stockholm-based projects, but those in places as diverse as southern California, North Carolina, and Finland.

The subsidiary-as-incubator model is promising, but as with all corporate venturing, there is a risk that a new business idea won’t find a home within the corporate portfolio. The critical success factor is typically how well the project champion is connected with other parts of the corporation. Hence the importance of international networks.

**Build International Networks** As every corporate executive—and entrepreneur, for that matter—knows, it’s essential to give would-be innovators access to professional and informal networks. But such networks are not easily manufactured. Some companies have tried to build international networks by creating employee rotation programs, but too often these personnel moves have been ineffective because they’ve been artificial—they haven’t been linked to practical business initiatives. If employees don’t do real work during their overseas assignments, they never become part of local teams or become integrated into networks. A number of corporations, however, now deploy talented employees on short-term overseas assignments that are tied to tangible business goals. In the short term, these assignments furnish useful resources for current projects; in the long term, they increase the number and variety of professional networks from which the next ideas are likely to emerge.

For example, when ABB acquired Taylor Instruments, a Rochester, New York–based automation and controls company, the entire management team of ABB’s automation and controls business was temporarily moved from Sweden to ABB’s U.S. headquarters in Stamford, Connecticut, to oversee the integration process and help develop a new identity for the business. After three years, the management team, which by then included a couple of Americans, was moved back to Sweden.

Similarly, Hewlett-Packard often brings in an experienced management team from corporate headquarters to get new subsidiary operations started. The team’s job is to get performance on track, bring a local management team up to speed, and move on to another project. At both companies, the creation of strong international networks is the by-product of real work rather than an end in itself.

Multinationals also need to create roles for what we have come to think of as idea brokers. In a crowded marketplace, brokers add value through their ability to bring buyers and sellers together. For innovation at the edges to thrive, entrepreneurs in foreign subsidiaries need to be linked with sources of funding, complementary assets, and sponsors in other parts of the company. That’s where idea brokers come into the picture. With their wealth of contacts and experiences, they play three important roles.

First, they link seed money with new ideas. Consider the story of Mats Leijon, an electrical engineer in one of ABB’s corporate research labs who came up with a disruptive technology called the Powerformer—a high-voltage generator that allows power to go directly from the generator to overhead cables without a step-up transformer. Without the assistance of Harry Frank, the head of one of ABB’s corporate research labs, Leijon’s invention might never have seen the light of day, especially given that the Powerformer promised to wipe out more than one of ABB’s core businesses. Frank brokered the idea by translating it into business terms, and Leijon’s project received funding from the Swedish country manager, Bert-Olof Svanholm. It was launched in 1998. Today, several leading ABB customers are adopting the Powerformer, and the story of Mats Leijon’s innovation has become a touchstone for other entrepreneurs at ABB.

Second, idea brokers help find the right organizational home for new ideas. In one product
development group in Hewlett-Packard's Canadian subsidiary, initial funding for a new software product came from HP Canada, which was enough to get the product to market. But for the business to grow, the development group's general manager realized he needed to find a home for his product in one of HP's major divisions. He began to sound out his contacts, including several group vice presidents who were able to use their broad knowledge of the HP businesses to put him in touch with various parent divisions. After one false start, he found the right home in a small, Seattle-based division that was selling to the same customer sectors as his group. In HP, the group vice presidents are the idea brokers, and a significant part of their time is spent balancing the portfolio of businesses—splitting up large divisions, merging small divisions, shifting emerging businesses between divisions to create better opportunities for growth, and so on.

The third role idea brokers play is in cross-selling products and services among businesses. Skandia AFS, the financial services group, provides a good example. It is organized as a federation of national businesses, each of which is free to develop its own product lines for the local marketplace (they share a common business model and information system). Recognizing that a country-centered approach could restrict the transfer of new ideas across borders, Skandia created an internal brokering unit called the International Support Unit (ISU). Its role is to take new products developed in one country and cross-sell them into other countries; managed as a profit center, Skandia ISU earns its revenues through commissions on cross-border product sales.

In an era in which new business ideas are as likely to come from Stockholm as from Silicon Valley, multinational companies cannot afford to limit their creative gene pools to corporate R&D labs or a few select outposts. They must find ways to tap into the diverse and multifaceted opportunities that exist in foreign operations. Taken together, the four practices we've outlined can help corporate executives unleash innovation at the edges and fulfill, at last, the promise of going global.

**Reading 5-2**  
**Connect and Develop: Inside Procter & Gamble's New Model for Innovation**

Larry Huston and Nabil Sakkab

Procter & Gamble launched a new line of Pringles potato crisps in 2004 with pictures and words—trivia questions, animal facts, jokes—printed on each crisp. They were an immediate hit. In the old days, it might have taken us two years to bring this product to market, and we would have shouldered all of the investment and risk internally. But by applying a fundamentally new approach to innovation, we were able to accelerate Pringles Prints from concept to launch in less than a year and at a fraction of what it would have otherwise cost. Here's how we did it.

Back in 2002, as we were brainstorming about ways to make snacks more novel and fun, someone suggested that we print pop culture images on Pringles. It was a great idea, but how would we do it? One of our researchers thought we should try ink-jetting pictures onto the potato dough, and she used the printer in her office for a test run. (You can imagine her call to our computer help desk.) We