

From Global to Metanational

*Yves Doz, Jose Santos & Peter Williamson
Harvard Business School Press, 2001*

Today, the challenge for global corporation is to innovate by learning from the world. Tomorrow's winners will be companies that create value by searching out and mobilizing untapped pockets of technology and market intelligence that are scattered across the globe. This is the message from Yves Doz, Jose Santos and Peter Williamson, three eminent scholars of management in their book, "From Global to Metanational."

The Metanational Company

Winning in the knowledge economy demands a fundamental change in the way traditional multinational organizations function. It will not be enough to focus on operational efficiency. It will also not be enough to designate existing countries or global business units as "centers of excellence" or "strategic leaders" for a business unit or product line.

Metanational companies operate on a new paradigm. They do not derive their competitive advantage from their home country, or from a set of national subsidiaries. Metanationals view the world as a global canvas dotted with pockets of technology, market intelligence, and capabilities. They see untapped potential in these pockets of specialist knowledge scattered around the world. By sensing and mobilizing this scattered knowledge, they are able to innovate more effectively than their rivals.

Unlike most of today's multinationals, metanationals do not try to prosper by sharing knowledge and best practices across the world. Instead, metanationals look for untapped pockets of knowledge around the world. They focus on connecting and leveraging dispersed pockets of knowledge.

The winners in the knowledge economy must be able to get ahead of their competitors at three different levels. The first level of competition is the race to identify and access new and relevant technologies, competencies and knowledge of lead markets emerging in locations dotted around the world. The second level of competition is about the effectiveness and speed with which companies can connect these globally scattered pieces of knowledge and use them to create innovative products, services, and processes. The third level of global competition is about optimizing the efficiency of the global sales, distribution, marketing, and supply chain to leverage these product, service, and process innovations across global markets rapidly and cost-effectively.

To build metanational advantage, a company needs to be good at sensing, mobilizing and operationalising.

Sensing: A successful metanational, must be good in identifying new sources of relevant technologies, competencies, and understanding about leading-edge customers. This means learning how to sense and process this complex knowledge into a form that the corporation can use efficiently. Building new sources of competitive advantage requires a sensing network that can identify innovative technologies or emerging customer needs that competitors have overlooked.

Mobilizing: A successful metanational needs a set of structures to translate new knowledge into innovative products or specific market opportunities. It must be able to mobilize knowledge that is scattered in pockets around the corporation and use it to develop new products and services.

Operationalizing: Once a new product, service, or business model has been pioneered, its profit potential must be exploited. This means scaling up the supply chain, improving efficiencies, making incremental improvements, and engineering local adaptations. Here, the emphasis is on efficiency, flexibility and financial discipline.

Challenges in the knowledge economy

According to Yves Doz, Santos and Williamson, the new knowledge economy presents fundamental challenges for traditional multinational companies:

- Global spread is no longer a distinctive competitive advantage.
- A single national market no longer leads in most industries. The “lead” customers, whose emerging needs drive innovation, are no longer in a single sophisticated market either.
- Valuable knowledge is increasingly scattered.
- Valuable knowledge is sophisticated, sticky and deeply embedded in distant and unfamiliar environments.

The fact that new technologies and competencies are emerging in nontraditional locations opens new sources of differentiation for companies able to discover, access, and leverage their knowledge ahead of their competitors. Since new competencies and consumer needs emerge in complex, subtle bundles of knowledge, the competitive advantages built using them are difficult to imitate. Therefore, multinationals that become successful international brokers of complex knowledge will enjoy robust and sustainable sources of advantage.

The growing irrelevance of Geography

Multinational companies have long leveraged their geographic roots for competitive advantage. They became great by bringing the distinct competencies and qualities of their home markets into the global arena.

But this kind of ‘projection’ strategy is running out of steam. The cost of distance is falling dramatically as transport and communication technologies improve by leaps and bounds. So the ability to take a homegrown formula and successfully project it into new markets around the world no longer results in a competitive edge.

Companies need to perfect the art of learning from wherever relevant knowledge is being generated, regardless of location. This means overcoming geographic myopia in order to become global knowledge prospectors.

As industries and different streams of technology converge, companies will need to master a more diverse range of technologies that may have grown up in different locations around the world. The pools of specialist knowledge are increasingly dispersed. Earlier, it was possible to designate one country as the lead market, another as the source of innovation, and yet another as the major source of parts/raw materials. Today, there is no single lead market for most products and services.

Companies often forget that new technological breakthroughs still have a large element of serendipity. Random events do not always occur in the strongest clusters or locations with the

most resources devoted to a particular problem. New knowledge about potential customer applications or tastes may emerge from fragmented locations.

Many multinationals fail to break free of their geography. They find it difficult to believe that their birthplace, is not the primary source of competitive strength. Even where some power has been given to other parts of the network, national subsidiaries with the largest markets, asset bases, investments, and numbers of people tend to have the greatest influence on key decisions and investments. MNCs also make the implicit assumption that local adaptation is relevant only locally. Even multinationals that excel in local adaptation of their products and services, often regard these as deviations from the global blueprint that undermine their worldwide efficiency. Therefore, they fail to recognize the potential for learning from adaptation by transferring local success stories to other markets.

Being Born in the “Wrong” Place

In the past, few companies achieved global leadership starting from a home base located on the periphery of their industry. But today, the special skills of companies born in the “wrong place” are of great relevance to companies aspiring to be truly global players.

The first stage in mobilizing dispersed knowledge is to connect the fragmented pieces of knowledge about new technologies or market needs and use them for a particular problem or opportunity. Once knowledge is brought together by a magnet, it must be combined and transformed into innovative products, services, or processes that can ultimately be leveraged by the company’s global operations. A final feature of globally successful companies is their ability to leverage their innovations across a global market. This capability has two aspects. First, the necessary knowledge must be transmitted to the people responsible for day-to-day operations. Then these people need to make sure the innovation is leveraged for increased sales or profits.

The *sensing plane* consists of probes into the pockets of specialist knowledge that the metanational corporation needs for innovation. These probes could take many forms, including customer, supplier, or distributor partnerships; links with local universities; targeted acquisitions; and so on.

The *operating plane* consists of operational units that produce, distribute, market, sell, and service the metanational’s global offering. This plane also includes R&D centers involved in the local adaptation of the global product, service or process, and units responsible for continuous improvement in operational processes, supplier and distributor relationships and other partnerships set up to improve operational efficiency.

The *leveraging plane* aims at maximizing revenues and operating efficiencies. Its role is to extract maximum value from the knowledge the organization has gathered.

The missing link between the sensing and operating planes, is the set of structures that act as magnets to collect and meld dispersed pieces of knowledge into innovative business models, product and service designs, or processes and systems. The authors term this the mobilizing plane. Projects and “virtual” teams reside in the mobilizing plane and are built around selected lead customers, global platforms, or global activities. Entrepreneurship and innovation are the driving forces of the mobilizing plane. Its role is to promote the identification, moving, and melding of technological and market knowledge drawn from around the world to create innovative solutions that the metanational can leverage globally.

The hidden traps

Two hidden traps threaten the path for traditional multinationals attempting to become metanationals. First is the mistaken belief that metanational capabilities can simply be “shoehorned” or squeezed into the existing structure of a multinational organization. The second trap lies in the common belief that information and communication technologies (ICT), can be used to mobilize dispersed knowledge.

Most of today’s multinationals concentrate their efforts and resources almost exclusively on streamlining their operations. They focus on maximizing the revenues and operating efficiencies to be gained by exploiting and adapting their global formula. The solution is not to extend the operating network into these new territories. But the rules of the game for an efficient operating network are fundamentally different from those required to tap new knowledge that is dispersed around the globe. The processes of prospecting, sensing, attracting, melding, relaying and leveraging new knowledge from dispersed and diverse locations are very distinct from the routine operations.

Distance creates real obstacles, despite the dramatic advances in IT systems and telecommunications technologies that, for some purposes, are “shrinking the world.” Ideas or procedures that seem simple are misunderstood and wrongly applied, because they actually conceal a whole bundle of knowledge that is tacit and context-dependent. Complex knowledge is very “sticky” to its origin. To build metanational advantage, it is not enough to excel in moving information around the globe using ICT. Companies must be able to tap subtle bundles of knowledge scattered around the world.

When a company wants to mobilize and then share complex knowledge, drawn from different places around the world, it must answer some basic questions. Is it a simple piece of knowledge that is explicit and well-codified, so that it can be transferred as data? Is it knowledge that the recipient will have to experience in order to understand? In that case it will have to be transferred by moving people or by finding a way to re-create the experience for others. What should we do if the knowledge we need to transfer is endemic, so that it will be easily misinterpreted if taken out of context?

Managing Knowledge

Co-location reinforces a company’s ability to recognize opportunities, to find the requisite pieces of knowledge, to access that intelligence, and to combine or meld it into a creative business concept or an innovative product or service. Co-location of the people who drive innovation is a strategy adopted by many successful multinationals.

Close physical, cognitive, and emotional proximity makes the management of knowledge much more straightforward. When people are together, they experience two-way, high-bandwidth communication. This goes far beyond simply hearing the facts – the explicit articulation of knowledge. People also see gestures, feel the emotions and the energy the communicator uses to make a salient point. People impart meaning to the silences. Co-location facilitates frequent interaction. This makes it vastly easier to share implicit knowledge.

Co-location dramatically increases the probability of chance encounters. Random encounters with colleagues – in the cafeteria, in the elevator – often provide that critical missing piece of knowledge for the birth of a new idea. Being part of the broader local community – makes it much more likely that a biochemist or a computer scientist will “run into” someone who works for a customer, a supplier, or a nearby university research lab, all sharing the same kind of

problems, the same references, the same curiosity and the same language. Chance encounters, like molecules colliding in a solution, significantly contribute to innovation.

Co-location helps develop a shared language, a shared fund of knowledge, a shared way of learning and a shared set of values and beliefs. All of these things support the exchange of tacit knowledge that can only be interpreted by understanding the context in which it resides. Projection and adaptation means that most of the creation of new knowledge could remain co-located. Major innovation projects are co-located either at headquarters or at one of a few centers of excellence in major subsidiaries elsewhere in the world. Local adaptation, which involves melding knowledge projected from headquarters with an understanding of local conditions, can also be co-located – in this case within a national subsidiary.

One alternative, to co-location of people may be moving the necessary knowledge around the world using a “package” or “carrier” of knowledge: a blueprint, a person, a tool, a machine, and so on. But no matter how good the carrier, moving knowledge from one place to another will change the nature of the knowledge. When people move to a distant location, the quality of their knowledge decays, because the more complex knowledge is so sticky and embedded in the original context. They lose the benefit of being immersed in their original knowledge clusters. They cannot keep up with the new tacit knowledge circulating there. And as they will be working in new contexts, they cannot fully comprehend contexts in which part of their knowledge is simply ineffective or even misleading.

Another major carrier of knowledge is information, as in files or spreadsheets full of structured data, formulas, text, and blueprints. Moving information is easy and cost effective but not the same as moving knowledge. Information cannot convey the tacit elements of knowledge. Nor is it exempt from the risks of recontextualization.

Other major carriers of knowledge are tools, templates, models, machines, and even complete plants or operational units. The advantage of these carriers is that the knowledge they transport can be put to use without being learned. They can convey knowledge far more complex than pure information.

The difficulty of accessing knowledge from a distant location depends importantly on the nature of that knowledge. In case of well-articulated knowledge that is publicly available, the problem of access is almost trivial. Desk research or short information gathering visits will usually suffice. Accessing complex knowledge requires mechanisms for experimentation and immersion. Accessing complex knowledge may be difficult because the holders may not be able to articulate it: They may not be conscious of what they know; hence they cannot explain it. Their knowledge may be tacit.

IT can only be an enabler. Even the most sophisticated computer-based networks, can only deal with knowledge that has been well articulated. They are generally limited to integrating knowledge that already exists in-house. The problems they are designed to solve must be formulated beforehand. Hence they can seldom act as a direct source of innovation.

Learning from the World

Sensing requires substantial investment. So companies must choose the locations that seem likely to provide the best returns. Anticipating the emerging hotbeds of knowledge ahead of competitors requires an insight into some tough questions. What disruptive technologies may affect any industry? Where are the critical technological and market discontinuities likely to originate? Who will be the lead customers of the future?

The most successful prospectors look for certain indicators of emerging knowledge hotbeds. Their experience suggests some rules of thumb for an effective prospecting strategy:

- Look for leapfroggers among consumers least hampered by previous product experiences.
- Identify locations where technologies are converging. The invention of biochips, for example, had its roots in the convergence of microelectronics and biotechnology in the San Francisco Bay area.
- Look for lifestyle leaders. Changing lifestyles can indicate the emergence of new technologies and market trends.
- Identify government/university science centers with resources, skills, and aspiring entrepreneurs.
- Watch for growth in long-distance and international phone traffic, and Internet nodes, denoting a concentration of educated, curious, and cosmopolitan communities.
- Monitor the presence of complementary skills and precursor industries, suppliers, and customers.
- Identify regulatory differences that promote innovation: for example, a fax has the value of an authentic document in Japan.
- Look for locations with early regulatory approvals: for example, microsurgery developed faster in Europe, where registration of new products and approval of new surgical procedures takes two years less than it does in the United States.
- Track the personal mobility of people and the incentives to innovate: Sense where the interesting people are migrating to live.
- Monitor rapid changes in disposable income. Time-starved wealthy people invent new lifestyles that require new services and generate new expectations.

The effectiveness of a vehicle for accessing knowledge is determined by the quality of the access it opens up rather than its size and resources. An important rule for accessing complex knowledge from distant locations is that the job is best done by local insiders, who share an understanding of the local context, culture, and values. A local can sense subtleties that are not apparent to expatriates.

The structure of the sensing organization differs fundamentally from the structure of the traditional multinational's operating network. Rather than being closely integrated across locations, the sensing organization is a loose and flexible network. But each sensing unit is tightly plugged into the local pocket of specialist knowledge that it is responsible for accessing.

The sensing organization needs a flat, flexible structure. There is no room for hierarchy. Individual sensing units will often be temporary structures. Their lifetime should be determined by the value of new knowledge they can potentially access. Once a particular source dries up, the sensing units should be disbanded or relocated.

The sensing organization needs people who are driven by a spirit of discovery and reconnaissance. They must have intellectual curiosity, empathy with locals, and sensitivity to their local context. They need to understand the difference between information and knowledge. They must not underestimate the complexity of knowledge. They must be credible to people and partners in the local environment in which they operate. In a sensing role where the requirements and rewards are potentially large, but not clear-cut, they need a high tolerance of ambiguity. Finally, they need stamina, because finding and accessing complex knowledge that is deeply embedded in a local context is a demanding and time-consuming task.

Mobilizing Dispersed Knowledge

Facilitate Chance Encounters: Chance encounters are one way that dispersed pieces of knowledge come together. The mechanisms that foster chance encounters may be as simple as holding meetings in unusual locations. Assigning problems to subsidiaries that lack the complete complement of knowledge to solve them can also facilitate chance encounters. Another approach is to promote interaction between people who would not meet each other in the typical course of operations. Training sessions or meetings for diverse parts of the organization can be coordinated and social event combining two or three different project groups can be planned.

Set Challenging but Fuzzy Goals: The European Airbus project offers a good example. A group of senior managers and government representatives decided to challenge Boeing, in the mainstream civil airframe market. Initially, the details of this objective were fuzzy: The project team had neither the market knowledge, beyond obvious routes in Europe, nor the full complement of technologies required. But the people behind Airbus realised that Boeing was missing the opportunity to serve the world market by drawing from specialized aerospace technologies and market understanding outside the United States. Today, Airbus is at the point of overtaking Boeing in market share.

Create a Corporate Knowledge Map: A “knowledge map” may help generate ideas for innovation. “Knowledge yellow pages” or a “who’s who” of in-house experts may play a supporting role.

Turning knowledge into innovation requires a mechanism that will attract the dispersed knowledge, direct it toward a common goal, and exert pressure to deliver new products or services. A global lead customer, a global product (or service) platform, or a global activity can be this mechanism.

Using a *global lead customer* as magnet means constantly guiding the metanational innovation process, keeping users’ needs at the fore. But learning with a leading global customer is often costly in terms of time and resources. Considerable investment may be required either to access knowledge from the customer and to entice the customer to cooperate. Customer-led innovation may also require expensive, one-off customization. The process tends to be less predictable and more difficult to clone. Having been developed in partnership with a specific customer, the resulting innovation may be more difficult to scale up and apply to other customers in the global market. Effective rollout is likely to involve a further round of investment in modifying the original innovation.

When the entrepreneurial insight leads to a reasonably tight specification of future customer requirements within an existing product category, rather than a vague notion of an unmet need or a fuzzy opportunity, a *global platform* can act as an effective magnet for mobilizing dispersed knowledge. A global platform provides a more tangible magnet than a partnership with a lead customer. Early on, it is clearer what pieces of knowledge are required to further the innovation and how they might fit together. This, in turn, paves the way for a more predictable innovation process. It may also be easier to break down the innovation task into semi-independent modules of work. When the global platform acts as the magnet, the resulting innovation will be easier to exploit on a broad scale. Rather than reflecting the idiosyncrasies of an individual customer, the innovation is designed for global applicability from the outset. Using a global platform is less

costly than innovating with a global lead customer. More of the process is under internal control and less dependent on external developments within the customer that might throw it off track. As a lower-cost magnet, global platforms can be used for projects with a more modest potential upside.

But this approach also has some disadvantages. The basic platform architecture has to be specified in advance. So using a global platform as the magnet can stifle the innovation process and damage the quality of the final result. Breakthrough innovations are less likely to emerge when a global platform is adopted as the magnet. Innovation based on a global platform may also be easier for competitors to copy, as the processes and sources of knowledge are likely to be more transparent than they are when the magnet is a global lead customer.

In cases where many possible innovations can emerge from the same basic innovation process, but each has a relatively low impact on shareholder value, a *global activity* becomes the magnet of choice. To use a global activity as the magnet, it must be possible to specify, in advance, the activities required to innovate. Where a global activity acts as the magnet, each small innovation, is different in content. But the basic innovation process is much the same. The ability to spread the fixed costs of setting up metanational innovation processes and structures is an obvious advantage of using a global activity as the magnet. Using a global activity as the magnet makes it possible to mobilize dispersed knowledge even where the rewards to be reaped from the individual innovations are relatively small.

There are some disadvantages in using a global activity as the magnet. The innovation process is tightly constrained on a single track. Large breakthrough innovations are effectively excluded. And because the process is tightly specified in advance, it is generally difficult to make use of newly discovered pockets of knowledge that don't fit into the standard process. Much of the potential for mobilizing and melding globally dispersed knowledge is therefore lost.

Knowledge sharing

If both the required technology and the market understanding are simple, then sharing can take place at arm's length. When the success of the innovation depends on sharing complex market knowledge, then the magnet team should be relocated to where that knowledge sits. In this case, knowledge about technology should move to the market. By contrast, if the technology is sticky, then it makes sense to codify and move the market knowledge to the home of the complex technical knowledge. When both market and technical knowledge are inherently complex, sharing knowledge will involve a succession of short periods of collocation. These interactions will need to be followed by extended periods of dispersed work assisted by a virtual collocation using techniques such as videoconferencing.

Magnet teams will be the powerhouses of tomorrow's metanational organizations. Many such teams will operate simultaneously, each one responsible for mobilizing knowledge scattered around the world to create innovative products, services, or processes. The vertical links between each magnet and the sensing and operations planes are very strong. The lateral links with other magnets are few and ad hoc.

Magnet teams need people who are comfortable working amidst uncertainty, people who can work in virtual teams with only infrequent face-to-face interaction, people who understand that their current role may be temporary and transitory. Magnets need internal entrepreneurs who will promote new initiatives and unprecedented knowledge combinations. These are people who create value by imagining how to combine dispersed knowledge in new ways in the service of

innovation. Young, high-potential managers, who want the opportunity to prove themselves and advance their careers, are potential magnet champions.

Harvesting Value from Metanational Innovation

The design of an efficient metanational operations network starts from its overarching goal: to leverage a stream of innovation products and services in markets across the globe, guided by the principles of operational efficiency, flexibility, and financial discipline.

The metanational's world consists of two canvases. One is dotted with pockets of specialist knowledge that it can access and mobilize to fuel its innovation process. A second canvas is dotted with distinctive pockets of operational capability and capacity that it can use to exploit and leverage the innovations it creates.

The metanational operations network differs from traditional multinationals in three fundamental ways:

- It is organized around sites (or locations) and their associated teams of people and capabilities, rather than around national subsidiaries.
- Its managers “think local and act global,” not the other way around.
- Influence, recognition, and reward derive not from size, weight of assets, and people, or even from direct profitability, but rather from the unique contribution each site makes to the goal of leveraging metanational innovations globally.

The metanational seeks to develop operating capabilities that can help it squeeze maximum value out of its innovations or reduce its costs. Rather than location, it is the quality and depth of capability that counts. These qualities may reflect the accumulated experience or the natural geographical advantages of the site. The country in which the site happens to be located is of subsidiary importance.

No single location will have all the capabilities and activities necessary to run an independent operation, so there is no place for national fiefdoms in the metanational operations network. This means that the site needs a mix of people who can interact smoothly with other parts of the operations network. Each site must be receptive and flexible enough to adjust to the flow of innovations it has a duty to help leverage and scale. It must communicate easily and freely with the magnet organization.

As each site sees its value in terms of a unique contribution to the network, it will constantly seek to deepen and renew its distinctive local capabilities. In traditional multinationals, sites try to become a self-standing replica of the headquarters. But in the metanational, sites will recognize that their value comes from distinctiveness, not imitation. Each site manager sees her role as maximizing the site's distinctive contribution to the overall goal of leveraging innovations globally. This means thinking local about how to develop unique, site-specific capabilities that can contribute to the global operations network.

Site managers take their cues from the local community. They need frequent opportunities to interact with their colleagues from other sites, in a spirit of exchange and cooperation. But this is quite different from a traditional multinational, where a cadre of expatriates moves from job to job, from country to country, and between headquarters and subsidiaries.

Even the best-designed metanational operations network will face a tension between promoting efficiency and operational stability, on the one hand, and absorbing a stream of valuable but

probably disruptive innovations on the other. Managers must adopt mechanisms that promote the smooth transfer of innovations from the magnet organization into the operating network. Absorbing an innovation generally requires not only mastering the knowledge but also “unlearning” existing rules of thumb, mindsets, and operating processes. If the amount of unlearning is substantial, it may be beyond the capability and motivation of individuals who see it as destroying their life’s work. As a consequence, some personal changes may be necessary before an operation can absorb the innovation.

From Global to Metanational

Global projectors share two potential sources of strength. First, they have an established mindset that defines success globally. Second, they have a highly interdependent global organization despite the typically dominant headquarters and dependent subsidiaries. The global definition of success encourages worldwide optimization of their operating network. These global companies are, therefore, culturally well-positioned to deploy a stream of innovations quickly and efficiently on a global scale.

But a global projection strategy also creates a number of severe handicaps. First is the lack of a “prospecting” mentality. Global projectors are attracted by similarities to their home base that will provide maximum leverage with minimum adaptation. Global projectors are also weak in accessing unique local knowledge.

The senior management of a global projector must adopt a two-pronged approach. First, they should create a few practical pilot projects that demonstrate the value of innovation based on learning from sites across the world. Second, they must address the key deficiencies of a global projector in the knowledge economy: the lack of a sensing organization and a global prospecting mentality.

Such companies must select a potential innovation, a new business area, or a new product or service where the relevant knowledge does not all lie on home turf. They must set it up to act as a metanational magnet, providing leadership and knowledge from the geographic periphery of the existing organization. The goal is to demonstrate the worth of innovation based on learning from distant and unfamiliar locations.

The next major step for global projectors is to establish a suborganization dedicated to sensing. It must be tightly plugged into local environments in ways that allow it to access complex knowledge, using everyone from customers and suppliers to universities and highly targeted acquisitions to further this task.

From Multidomestic to Metanational

A multidomestic firm tends to have a large stock of knowledge within its subsidiaries that can be leveraged to build global advantage. The multidomestic company is often already well-plugged-in to a set of local environments. So it has an ongoing supply of new knowledge from those locations. But the concept of global knowledge magnets does not come naturally to multidomestic firms. “Local knowledge for local adaptation” is the implicit managerial mindset. As a result, such companies lack experience in establishing and running global knowledge magnets.

Multidomestic companies are good at melding diverse sources of local knowledge in a local context. However, they are weak in moving and melding knowledge from a global pool. Such companies should set up a pilot magnet for a specific innovation that requires knowledge from all

around the organization and its local environments. They must create a magnet organization that promotes global interdependence as it mobilizes dispersed knowledge.

They must select a leader customer, a global platform, or a global activity to act as a magnet for an innovation that is only possible by mobilizing knowledge scattered around the organization. To be effective, this magnet must transcend the boundaries of national subsidiaries. Such companies must:

- Look for an innovation that depends on connecting knowledge from a number of locations.
- Break the assumption that “voice equals weight.”
- Select a pilot magnet that encourages codification of local knowledge
- Select a pilot magnet that develops skills in melding knowledge from different sources.
- Select a pilot magnet that encourages the sharing of existing knowledge, and also requires new knowledge.
- Actively manage the process of relaying the resulting innovation back into the operations network.

The next step for multidomestic companies is to start setting up a full-fledged magnet organization, that excels at moving and melding complex knowledge from the sensing organization. It should be structured around global lead customers, global platforms, or global activities.

- Emphasizing the opportunities wasted by the failure to leverage past innovations across the globe.
- Fostering a culture in which operating managers think local but act global.
- Deemphasizing the national subsidiary as the basic building block of the operating network.

From Start-up to Metanational

Startup companies can leapfrog their competitors and go straight to a metnational structure. The authors suggest a number of guidelines for startups.

- Don't create a senior management ghetto in a single location.
- Seek out and leverage diversity.
- Assess each international foray according to the ratio of learning over investment.
- Leverage partners.
- Carefully sequence learning and capability development to avoid spreading resources too thin.

Concluding Notes

Misinterpreting the proper role of transnational integration is dangerous for two reasons. First, it is likely to encourage senior managers to try to superimpose the activities of sensing and magnet organizations on the operations network. Such a strategy is bound to fail because the operating network's mentality, structures, systems, and incentives are simply inappropriate for the activities of sensing and mobilizing globally dispersed knowledge. Moreover, the operating network is unlikely to be in all of the locations and have the right kinds of relationships to prospect for and access all of the knowledge required by tomorrow's metnationals. Shoehorning the activities of sensing and mobilizing into a transnational operations network may even undermine the network's efficiency.

Second, the role of national subsidiaries as the basic building blocks of a transnational structure is fundamentally at odds with the way metnationals need to view the world. Placing national

subsidiaries at the core of the organization constrains decisions about where and what to sense. It impedes the formation of magnets around global lead customers, global platforms, or global activities. It hinders the operating network's ability to exploit metanational innovation globally, because it causes managers to focus on the performance of the national subsidiary as a stand-alone business.

CEOs need to extract themselves from the direct management of the operating network. They need to move around the world to look for the unique knowledge each location can contribute, look for weak signals of new technologies that might be relevant to the business and hear the muffled calls of unmet customer needs. The sensing and magnet organizations should report directly to the CEO. There is a need to be constantly fighting the natural forces of reversion back to the comfort of global projection. Continually learning from the world is exhausting.

Today the main challenge, according to Yves Doz, Santos and Williamson is not to penetrate world markets but to learn from the world.