Do What You Do Best Virtuality has provocative implications for how managers decide what to do and where to do it. Reebok owns no plants, instead relying on contract manufacturers to manufacture, inspect, and distribute its products to retailers. Similarly, Nike, Apple, Cisco, and Qualcomm outsource production to manufacturers in low-cost labor countries in order to do what each does best: maximizing value creation through R&D and marketing. Though nominally independent, extensive coordination systems integrate agents into the network, thereby creating virtual production capabilities. Nike, for example, focuses on increasing value creation by leveraging its core competencies in design and marketing, confident in manufacturers' expertise to change product mixes as consumer preferences evolve.

Granted, it is easy to overhype the virtues of virtuality. Prudent management acknowledges that the relative importance of a real versus virtual value chain depends on product features as well as dealing with the imperatives imposed by industry structure. As such, the potential of virtuality has transformational implications for Google's global expansion of its geography-free network but middling implications for Nestlé's physical situations in different geographies. Therefore, while virtuality may be far-fetched for some MNEs, it is future-defining for others. In any case, just asking the question "Real or virtual?" sparks useful debate that clarifies configuration and coordination choices.

1. Value measures a firm's capability to sell what it makes for more than the costs incurred to make it. Given that straightforward stipulation, do you believe the MNE that continues applying conventional methods will outperform those that implement virtual approaches? Please identify three factors to support your interpretation.

GLOBAL INTEGRATION VERSUS LOCAL RESPONSIVENESS

MNEs face asymmetric forces: pressures for the efficiency of **global integration** versus those for the effectiveness of **local responsiveness**. The constant tug-of-war between globalism and localism puts contradictory demands on how managers configure and coordinate value chains. Research suggests straightforward relationships: The higher the pressure for global integration, the greater the need to concentrate configuration and standardize coordination. Conversely, the higher the pressure for local responsiveness, the greater the need to disperse configuration and adapt coordination. Few MNEs operate in an industry where one perspective dominates. Rather, the common scenario is an industry setting where the MNE must strike some sort of balance, reconciling the competing imperatives given the demands of its strategy.

PRESSURES FOR GLOBAL INTEGRATION

Global integration is the process of combining differentiated parts into a standardized whole. Local responsiveness is the process of disaggregating a standardized whole into differentiated parts.

Global markets produce and consume more than 20 percent of world output and are projected to approach 80 percent by 2025. Similarly, more cross-national economic integration will take place in the next 30 years than occurred in the previous 10,000. Again, think of the agents promoting globalization: from 30,000 MNEs in 1990 to more than 70,000 today, operating more than 900,000 subsidiaries spread around the world. Managers, companies, and industries react accordingly, as seen in the ongoing formation of global markets in chemicals, credit cards, financial services, accounting, food, healthcare, mass media, forest products, information technology, automobiles, telecommunications, and so on. Moreover, emerging economies intensify these processes. The United Nations estimates there are approximately 22,000 multinationals based in the emerging world; few of these existed 10 years ago. More will exist in a decade given that the ten fastest-growing economies during the years ahead will all be in emerging markets.[95] Combined, nearly 70 percent of the world growth over the next few years will come from emerging markets, with 40 percent in just China and India.[96]

The convergence of national markets, standardization of business, and efficiency imperatives push MNEs to integrate activities.

Earlier chapters indicate that many factors encourage global integration. Here, we highlight two significant drivers: the *globalization of markets* and the *efficiency gains of standardization.*

developing an increasingly consistent environment. This outcome, in turn, creates greater potential for scale economies, thereby promoting increasing degrees of standardization. Several trends reinforce this scenario. Presently, 157 nations are members of the World Trade Organization, the regulator of the rules of world trade.[99] Membership requires replacing differentiated national regulations with global standards that support trade liberalization. Standardizing the rules of the globalization game, so to speak, supports standardizing the methods of play. Progressive trade liberalization permits MNEs to configure value activities in optimal locations without forsaking access to markets worldwide. Hence, business-process outsourcing firms in India, robot builders in Germany, solar-panel makers in China, or chip designers in Taiwan can design value chains that maximize standardization without sacrificing access to consumers in other countries.

PRESSURES FOR LOCAL RESPONSIVENESS

CONCEPT CHECK

Globalization, though a powerful force, is not inevitable. Chapters 3 and 4 developed this thesis by noting that political and economic freedoms are in flux. Here we add that, for similar sorts of reasons, both consumer needs and host-government pressures prompt companies to adapt their value chains to local conditions.

Culture, politics, law, and markets differ across countries. Besides shaping the general business environment, they set the myriad factors that determine location economics. As a result, MNEs face a diversity of principles, practices, and agents as they operate from country to country. Some differences are superficial distractions that surrender to the allure of higher-quality, lower-cost products—think of worldwide demand for an Apple iPad, Starbucks latte, Facebook wall, or Twitter feed. Others, however, press MNEs to tailor the configuration and coordination of value chains. For instance, just 329 brands are recognized by consumers in eight or more countries; only 16 percent of all brands are recognized in two or more countries. What then of increasing communication across borders? Presently, about 1 percent of the world's physical mail crosses borders, less than 2 percent of calling minutes are international, and a quarter of Internet traffic crosses national borders.[100] Lastly, most people live their entire lives within one country, supporting local production and consumption of goods and sustaining local politics, history, culture, and identity. Localism, not globalism, is the lifestyle context for many people in virtually every country.

Given that adaptation reduces the potential efficiency gains of standardization, MNEs are understandably reluctant to adjust operations unnecessarily. Local imperatives, most notably those posed by *divergent consumer behaviors* and *host-government policies*, often compel them to do so.

Divergent Consumer Behaviors Rejecting the globalization of markets thesis, others argue that stubborn divergences in consumer preferences across countries necessitate adapting products and processes to local circumstances.[101] Certainly, money and technology encourage consumer behavior that privileges purchasing power over national allegiance. Nevertheless, differences in local consumers' preferences endure due to cultural predisposition, historical legacy, and latent nationalism (i.e., buy-local campaigns).[102] Also, consumers prefer products that are sensitive to their distinctive, everyday idiosyncrasies. Examples include designing and making products that local customers prefer (e.g., large cars in the United States, smaller cars in Europe, still smaller cars in emerging markets), tailoring channel structures to buyer preferences (e.g., Web-based and 4G-driven content in South Korea, print and media promotion in France, personal selling in Brazil), modifying product features for local tastes (e.g., light coffee roasts in Germany and Scandinavia, dark coffee roasts in Italy and Spain), and adapting marketing practices to consumption patterns (e.g., large package sizes in Australia, smaller sizes in Japan, single-unit sizes in poorer countries). These sorts of cross-national divergences press MNEs to optimize, rather than maximize, the standardization of products and processes.

Differences in local consumers' preferences endure due to cultural predisposition, historical legacy, and endemic nationalism.

It's important to note that local responsiveness, in some industries, is a powerful strategy. Look at Nestlé, with its slight incentive to standardize many activities across countries. Local habits, cultural traditions, and social norms shape the standards of preferred, palatable food. Food inputs are generally commodities, production has limited potential for scale economies, widespread distribution faces high costs given low value-to-weight ratios, and marketing is

The ongoing financial crisis spurs governments to strongly encourage MNEs to improve their local responsiveness.

A Case in Point The pharmaceutical industry likely foreshadows this scenario. In theory, industry conditions in pharmaceuticals call for hard economics to drive value chain configuration. Competitiveness hinges on achieving the efficiency gains of standardization where and when possible. Many companies, for example, sell low-margin, generic products such as aspirin; profitability demands efficient production. Alternatively, companies offering branded, proprietary products incur steep R&D costs; profitability requires high-volume sales to a global market.

Responsiveness pressures, however, require the pharmaceutical MNE to trade global efficiency for local access. Specifically, drug makers commonly disperse value activities to meet a national government's mandates that clinical testing, registration procedures, pricing restrictions, and marketing regulations comply with local regulations. As a result, firms adapt manufacturing and marketing to local market circumstances.

Arguably, an enterprising pharmaceutical firm could reject industry practices, as Zara did in the global apparel industry, and concentrate its value chain in superior locations. Public regulation of the healthcare industry largely nullifies this option. Besides funding big chunks of the healthcare budget, governments regulate its delivery. Qualifying companies must show sensitivity to the national healthcare system, standards of care for citizens, and local stakeholders. Antagonizing political officials by deemphasizing local responsiveness is rife with risks.

CONCEPT CHECK

The unfolding consequences of the global financial crisis hit many facets of the business environment. Growing state intervention into the market reduces the freedom companies have to pursue the efficiencies of global integration. It also benefits those companies that improve their local responsiveness.

A few years ago, the sweep of free markets and market fundamentalism meant fewer and fewer industries fell into this situation. The fallout of the global financial crisis suggests that in a few years, more and more will do so. Banks, energy providers, media, miners, insurance carriers, healthcare management, carmakers, and airlines, to name the most obvious, increasingly fall under the policy purview of national governments. Meeting growing public demands for transparency prods MNEs to improve the local responsiveness of their value chains. Those that protest will likely face stern rebuke. Governments have forceful tools to make MNEs adapt activities: protectionism to encourage local production, regulations to constrain market moves, or, ultimately, the command to divest and depart.

WHEN PRESSURES INTERACT

No global industry exists in which either complete standardization or full adaptation is an option. Those in salient national sectors, such as pharmaceutical companies, concentrate some activities while their counterparts in global scale-sensitive industries, such as computer chips, disperse some activities. Hence, no matter the industrial setting, operating internationally requires configuring and coordinating operations in ways that reconcile the competing demands of global integration and local responsiveness—not, as we see in Figure 12.5, foolishly ignoring one for the other. The **Integration-Responsiveness (IR) Grid** provides executives a framework to begin managing this challenge. (See Figure 12.6.)

The IR Grid relates the global and local pressures that influence an MNE's strategy.

The IR Grid positions an industry in the quadrant that represents its sensitivity to the dual imperatives. For instance, it indicates that strong pressures to respond locally but low pressures to integrate globally encourage adapting value activities to host country conditions. In this scenario, MNEs like Procter & Gamble, Shiseido, or Unilever that operate in industries with strong cultural sensitivities, see few benefits from global integration but high returns from local responsiveness. Alternatively, high pressure to integrate globally along with slight pressure for local responsiveness encourages standardization. Flat-panel displays, for instance, are vital components for a range of products; few consumers, if any, care where they are made. Thus, firms like LG Philips, Chi Mie Optoelectronics, Beijing Orient Electronics, and Samsung respond to competitive pressures by concentrating value activities in economically superior locations.

A third class includes MNEs in industries such as telecommunications, information technology, automobiles, pharmaceuticals, and financial services. These industries fall in the

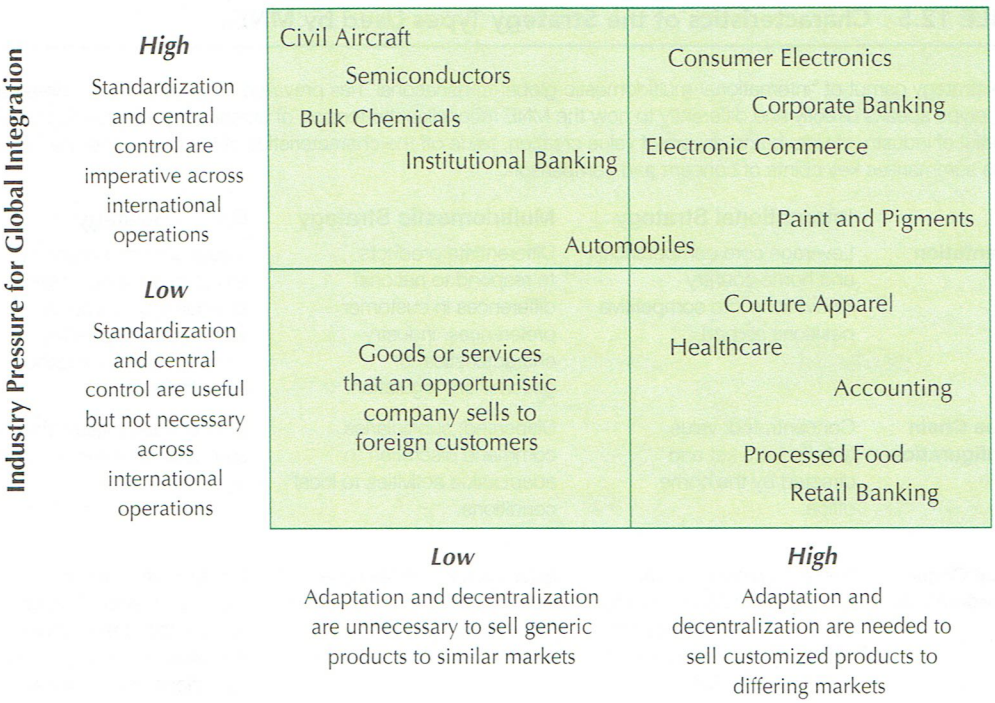

FIGURE 12.6 The Integration-Responsiveness Grid: By Industry

Each strategy archetype embodies a unique concept of value creation that reflects its resolution of the asymmetric pressure for global integration versus local responsiveness. The Integration-Responsiveness Grid maps this response, highlighting the interaction between each pressure that faces the MNE operating within a particular industry. As such, it helps managers map their strategies to reconcile the competing imperatives of standardization and adaptation.

INTERNATIONAL STRATEGY

Companies implement an **international strategy** when they leverage core competencies around the globe in an industry marked by low pressure for global integration and local responsiveness (the lower left quadrant of the IR Grid). This approach emphasizes replicating home-country-based competencies, such as production expertise, design skills, or brand power, in foreign markets. The primacy of replication requires that foreign units operate activities that are configured and coordinated by the home-country headquarters. Ultimate control resides with executives there, given their reasoning that they best understand the application, protection, and extension of the company's core competencies. The testing ground of new ideas, goes such thinking, is the home market, not foreign countries; hence, subsidiaries have limited autonomy to adapt products or processes. MNEs implementing an international strategy include Apple, Airbus, and Google.

The international strategy leverages a company's core competencies into foreign markets.

Headquarters is the decisive driver of the international strategy. Google, for example, develops the core architecture of its Web products at the Googleplex, its corporate headquarters complex in Mountain View, California. It allows national subsidiaries to customize aspects of its Web pages to deal with local differences in language and alphabet. Executives in the Googleplex safeguard the search algorithms that create its competitive advantage; they then direct product development and set business processes for overseas operations. Hence, headquarters transfers principles, practices, and processes to foreign operations. It does not, however, transfer control.

Benefits of the International Strategy An international strategy creates value by transferring core competencies to units in foreign markets where rivals lack a competitive alternative. The international strategy works well when industry conditions do not demand high degrees of global integration or local responsiveness and the firm business practices, either in minimizing costs or leveraging its brand, set market standards. The superior

sustain superior competitiveness as long as foreign rivals scramble futilely. Companies in many foreign markets, especially those in emerging economies, are reinventing systems of production and distribution, experimenting with new business models, and resetting the standards of innovation. An unexpectedly enterprising competitor may disrupt industry structure. Google, for example, faces increasingly adept local rivals in South Korea and China—Naver and Baidu, respectively—whose native sensitivities to local search tendencies strongly position them in fast-growing Asian markets.[106]

MULTIDOMESTIC STRATEGY

Some MNE faces high pressure for local responsiveness and a low need to reduce costs via global integration (the lower right quadrant of the IR Grid). In these industries, unique local cultural, legal-political, and economic conditions spur the MNE to adapt value activities. This approach represents the **multidomestic strategy**. Value-chain design follows the lead of foreign operations, not the home office's direction. That is, the company's subsidiaries in their respective local markets design, make, and market products that respond to local preferences. So the managers of, say, a backpack factory in Singapore decide the size, shape, and style of product to make given their understanding that local customers see greater appeal in their preferred design—even if their choices differ from those made by fellow operations in Turkey, Kenya, and Colombia.[107]

The multidomestic strategy adjusts value activities to local circumstances.

Johnson & Johnson (J&J) exemplifies this strategy. Company leaders reason that inalienable differences among countries preclude universal direction from one. Optimizing performance calls for allowing its 250 business units worldwide to behave like small, innovative, entrepreneurial firms, configuring and coordinating key activities to meet local imperatives.[108] Headquarters' role, in turn, is to do what it does best—configure and coordinate global activities that support local units leveraging the company's research, executive, financial, marketing, and logistic resources.

Benefits of the Multidomestic Strategy The multidomestic strategy superbly speaks to the unique features of consumer preferences, market tendencies, and institutional expectations found in national markets. Localizing value activities also helps the MNE reduce political risk given its company's local standing, lower exchange-rate risks given less need to repatriate funds, and translate local performance into national prominence. The strategy also gives the MNE a distinctive advantage against local competitors who lack the benefits provided by the parent's global operations. Industries of the sort found in the lower right corner of the IR Grid, such as clothing, food, and retail banking, typically have local companies that only operate nationally. The multidomestic strategy enables MNEs, such as McDonald's Nestlé, or HSBC, to build superior competitive positions in local markets on the strength of their global advantages.

The multidomestic strategy, by encouraging operational overlap, increases overhead expenses.

Limitations of the Multidomestic Strategy This strategy requires replicating value activities from subsidiary to subsidiary. Essentially, the MNE operates "mini-me" units around the world. Customizing a product or process to a particular market situation increases costs along the value chain. Different product designs require different materials, smaller markets make for shorter production runs, different channel structures call for dissimilar distribution formats, and divergent technology platforms complicate information exchange. Hence, the multidomestic strategy is impractical in cost-sensitive situations. Carrefour, for instance, found difficulties in the United States when, to deal with local preferences, it shifted from its successful international strategy to a multidomestic approach. Costly problems ultimately forced Carrefour to close its failing U.S. operations. Similar troubles hit Tesco, the British supermarket MNE. After six years of struggling to understand American consumer behavior, Tesco surrendered. It announced its withdrawal from the United States at a direct cost of $1.8 billion, atop of the many hundreds of millions it had already spent trying to respond to the local marketplace.[109]

in Manila, accounts receivable experts in Shanghai, accountants in Kuala Lumpur, and procurement officers in Shenzhen.[112] Once configured, headquarters coordinates activities by standardizing practices and processes.

Benefits of the Global Strategy The supreme advantage of the global strategy is leveraging economies of scale. Configuring and coordinating activities to capture scale effects drives the global efficiencies needed to compete with like-minded rivals and to convince consumers to forsake national preference for global products. The global strategy also benefits from the ongoing integration of global markets. Institutional developments progressively reduce the trade frictions and investment restrictions that had historically constrained location economics. Now, MNEs have tremendous flexibility to move anything, anywhere in the pursuit of maximizing efficiency; the globalization of markets, quite simply, expands opportunities for integration. Lastly, the global strategy clarifies decision-making. Single-minded focus on improving efficiency imposes an absolute logic on strategic analysis: when push comes to shove, global integration trumps local differentiation.

Limitations of the Global Strategy The cost-sensitivity of a global strategy leaves MNEs little latitude to adapt value activities to local conditions. Hence, the MNE's success is a function of the validity of the one-size-fits-all approach. Similarly, making a single bet on a single approach for a single global market is operationally risky. Change of all sorts, as we have seen throughout our text, is an intrinsic feature of international business. A disruptive innovation turns the single-minded focus of a globally tuned value chain into a maladapted delusion. The fallout of the global financial crisis, for example, saw big banks such as Citibank, Royal Bank of Scotland, and Fortis foiled by their previously high-performance global strategies. Despite leadership in global capital markets, the disruptive change of the crisis and ensuing demand for local responsiveness turned many of their strengths into liabilities.

TRANSNATIONAL STRATEGY

Today's environment of interconnected consumers, industries, and markets requires that an MNE, of the sort we see in the upper right quadrant of the IR Grid, configure a different type of value chain. It must exploit location economies while also applying coordination methods that leverage core competencies and, throughout it all, reconcile a complex mix of global and local pressures. Managing this feat enables the MNE to implement a **transnational strategy**, thereby differentiating capabilities and contributions from country to country, finding ways to learn systematically from its various environments, and diffusing this knowledge throughout its global operations.

The transnational strategy reconciles global integration and local responsiveness in ways that leverage the MNE's core competency throughout worldwide operations.

The transnational strategy requires a sophisticated value chain that simultaneously implements integration, responsiveness, and learning. It configures its value activities, subject to satisfying minimum efficiency standards, from country to country given prevailing cultural, political, legal, and economic conditions. But, in a critical break from the multidomestic strategy, the transnational strategy champions the cause of interactive "global learning." It uses its insights to upgrade its core competencies and then determinedly spreads its proprietary innovations worldwide. Rather than top-down (headquarters to a foreign subsidiary) or bottom-up (foreign subsidiary to the headquarters) coordination, the transnational strategy promotes knowledge flows from idea generators to idea adopters, no matter where one or the other resides. Headquarters applies systems to motivate communication and collaboration.

Transnational Strategy: A Case in Point Some question the feasibility of the transnational strategy. But the record of GE affirms its practicality. In the 1980s, growing threats from low-cost competitors in Asia pushed GE to look to global markets to sell products. Managers reasoned that expanding sales globally would boost scale economies. At the time, CEO Jack Welch declared, "the idea of a company being global is nonsense. Businesses are global,

CASE[117] The Multinational Enterprise of the Future: Forecasts and Scenarios

The changing structure of work, technology, and markets increasingly disrupts long-running standards of globalization. MNEs respond in kind, rethinking their strategies and resetting their value chains to compete in the brave new world. Change opens a host of new options for companies to consider: broadening options to organize R&D (from radical redefinitions to frugal innovations); keener supply-chain logistics to disperse production (from traditional Western markets to emerging economies); emergent technology to open new production frontiers (from manned assembly lines to robotic cells); and activist transnational institutions to blaze new market channels that make it easier to move both tangible goods (solar cell panels made in Shanghai but sold in Stockholm) and intangible services (X-rays taken in Boston but read in Bangkok).

These changes, both in isolation and collectively, reset our understanding of value creation, strategic choice, and company orientation. As a result, the standards of configuring and coordinating value activities evolve. Together, they spur companies in the wealthier markets as well as their counterparts in emerging economies to experiment with new approaches. These changes, in turn, raise the possibility for news sorts of MNEs. Let's take a look at some high-concept visions of the MNE of the future.

The Globally Integrated Enterprise

Some see an evolutionary scenario whereby MNEs continue responding systematically to the steadily unfolding standards of globalization. One person with a provocative take on this thesis is Sam Palmisano, the past CEO of IBM. Reflecting on IBM's evolution, he contends that the company passed through three strategic phases on its path to the MNE of the future.

First, there was the nineteenth-century "international model, whereby the company was headquartered both physically and mentally in its home country; it sold goods, when it was so inclined, through a scattering of overseas sales offices."[118] IBM focused on its business dealings in its home country, while headquarters configured and coordinated the value chain with little no input from overseas units. As such, IBM, like its contemporaries, used an international strategy to engage the world.

Phase two of the evolution ushered in the classic multinational firm of the late twentieth century. In shades of the multidomestic strategy, this phase saw the parent company create smaller versions of itself abroad. Headquarters then sent home-nation executives to run its satellite units. Expatriates typically commanded technical expertise but little cultural fluency and minimal foreign-language competency. Often, the only thing multinational about these executives was the location of their temporary assignment. Steadily, the changing context of global competition eroded the economics of the "mini-me" option. The cost of redundancy—each country essentially operated its own value chain—became unacceptable given intensifying competition.

The third phase, the "globally integrated enterprise," is one that puts investments, people, and work anywhere in the world "based on the right cost, the right skills and the right business environment [with] work flow[ing] to the places where it will be done... most efficiently and to the highest quality."[119] Earlier models saw configuration and coordination barriers constrain knowledge flows, production opportunities, and organizational options. Now, like the Internet, the globally integrated enterprise designs its strategy, configures its activities, and coordinates its processes to connect everything, everywhere, 24/7.

The Metanational

In the future, MNEs will not derive competitive advantage from world-class operational efficiency. Nor will they build superior competitive positions from unique features of their home country or, for that matter, from a set of national subsidiaries. Rather, victory will

the home market. Rather, it begins with the belief that the domestic market is just one of the many opportunities in the world.[127]

The micro-multinational's distinctive break from the past follows from its global focus at start-up. Folks who found born-global firms often have a strong international orientation due to the insights gained living or studying abroad. Logitech, the Swiss-based maker of computer devices like mice, keyboards, and speakers, was founded by a Swiss and an Italian who met while studying at Stanford University in the United States. Soon after startup, Logitech was selling its products worldwide.[128] Often, too, we see a seasoned executive who leaves an MNE and launches a firm that goes global at the get-go.[129]

Perhaps most critically, the idea of the micro-multinational has moved from theory to practice precisely because circumstances let it do so. Technological advances and the progressive openness of countries to international trade enable born-globals to implement their vision cheaply and quickly. The micro-multinational phenomenon largely follows the ongoing globalization of markets, falling trade barriers, growing demand for specialized products, and improving communication technologies. Born-globals exploit these circumstances, building powerful platforms to develop and deliver innovations in niche markets that, although narrow, span the world.

Glorecalization

Some who advocate the power of regionalized thinking endorse the awkward term "Glorecalization" as the emergent standard to balance key imperatives.[130] Glorecalization, a portmanteau of **Glo**balization-**Re**gionalization-Lo**calization**, champions consistent global values and customized local tactics within the context of a value chain configured to the regional environment. Doing so, goes the reasoning, enables the glorecalized MNE to leverage its regional network to gain necessary efficiencies while retaining local flexibility.

Various conditions support the glorecalized MNE. First and foremost, regional trade blocs (e.g., AU, ASEAN, CARICOM, EU, NAFTA) create markets with favorable location effects in terms of institutional structure, regulatory framework, and market integration. The European Union, for example, unites 27 countries and creates a common "home" for more than 500 million who share democratic norms, free market orientations, and respect for the rule of law. The easier flow of people, information, products, and processes throughout the EU streamlines value chains. Similarly, regionalizing production permits greater product specialization without sacrificing economies of scale. Finally, people within a region share similar outlooks, overlapping national interests, and convergent orientations.

The Cybercorp

Finally, there is the cybercorp, a form that was unimaginable a generation ago but a reality today.[131] National boundaries no longer organize consumers, markets, or industries to the cybercorp. Rather, evolving Internet technologies, not the physical geography of lines on a map, define the boundaries of its markets. Facebook, for instance, exists physically in its California headquarters, but its workforce of about 3,500 run a company that serves more than a billion "customers" in more than 150 nations through a website interface translated into more than 100 languages.[132]

Cybercorps develop competencies that let them react in real time to changes in customers, industry, and environment. They engage perspectives and strategies that bias value chains toward virtuality in order to link competencies within dynamic networks. The cybercorp builds on crowdsourcing, swarm intelligence, and artificial intelligence to tap the collective insight developed in is self-organizing systems. It and its many players operate here, there, and everywhere; many of these folks were, just a decade earlier, far off the global grid. Now, waves of communication innovations create a techno-utopia that increasingly connects everyone to the "evolving nervous system of civilization."[133] The cybercorp, built to engage strategies that learn, evolve, and transform, moves business toward the emergent standards of the Singularity Principle.