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Network Orchestration: Creating and Managing Global Supply Chains Without Owning Them

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Abstract

If you accept, in the words of Thomas Friedman, that "the world is flat," how do you need to reshape your organization, management, and thinking for this new terrain? This chapter offers strategies and insights on the capability for "network orchestration" that is essential in designing and managing networks that are centrally controlled. While most management education is focused on competition at the firm level, competition today is increasingly "network against network." This changes the way we approach strategy, supply chains, building competencies, and managing enterprises. The authors examine the strategies used by successful networked companies in diverse industries. Effective network orchestration requires balancing control with empowerment of customers, suppliers, and entrepreneurial managers; and building value more from integration than specialization. While the traditional focus of core competencies has been at the firm level, the rise of networked organizations means that companies need to take a broader view. Success is based less on the competencies that the organization owns than those that it can connect to. The authors point out that this means core competencies in network orchestration and learning may become increasingly important because these meta-competencies allow organizations to assemble and flexibly reconfigure the competencies needed to fulfill a customer-driven value chain.

The emerging "Flat World," as described by Thomas Friedman (2005), presents tremendous opportunities for companies to create networked enterprises. Instead of owning capabilities and assets, companies can connect to these assets fluidly around the globe through connections to other partners. Although organizations have always engaged in partnerships, in this world these partnerships are much broader and more fluid. Companies are using networks to create supply chains that stretch more broadly than ever.

This creates opportunities to build flexible global enterprises that can be reconfigured quickly in a fast-changing world. For example, if Li & Fung Trading receives an order for 100,000 men's dress shirts today, the best place to source the yarn might be Korea, the buttons might come from China, and the weaving might best be done in Taiwan, but in two factories to speed production, while Pakistan might be the best place for the cut, make, and trim (CMT), using three different factories to speed up the process. If the same order came in a month later, it might result in a completely different supply chain. Suppose Pakistan faced political unrest at that point—the entire supply chain could be shifted to another factory in another country. The supply chain is evoked by the customer. Like a message routed through the Internet, the project moves along the best specific path chosen from a broader network. Li & Fung can select the right supply chain from a network of approximately 10,000 suppliers around the globe.

The reason this can be done is that Li & Fung is a networked organization. Although it supplies more than US$14 billion in clothing, toys, and other products for top U.S. brands, it does not own a single factory or employ a single seamstress. It accomplishes all of this through what we call "network orchestration."[1]

This approach shifts the view of the organization and its competencies. Although the focus in the past may have been on building and protecting the core competencies that the firm owns, the focus in such a networked organization is much more on the competencies that the organization can *connect* to. The meta-competency at connecting is "network orchestration." Li & Fung has become a leading supplier without owning competencies in manufacturing. Instead, it has a competency in orchestration that allows the company to draw together many manufacturers and other partners into a flexible and adaptable supply chain. In addition to this capability, companies need the capacity to adapt over time to a rapidly changing environment. This demands capabilities in learning and innovation. With this set of broad capabilities—orchestration, learning, and

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[1] John Hagel and John Seely Brown first described Li & Fung's approach as "process orchestration" in their book *The Only Sustainable Edge: Why Business Strategy Depends on Productive Friction and Dynamic Specialization,* Boston: Harvard Business School Press, 2005.

innovation—networked organizations can connect to the other specific capabilities they need to create value for customers.

Unbundling Supply Chains

As explored by Serguei Netessine in Chapter 13, "Supply Webs: Managing, Organizing, and Capitalizing on Global Networks of Supplies," traditional supply chains have been transformed into global "supply networks." The supply chain and supply chain management have been an essential part of classic business strategy. Michael Porter recognized that these chains delivered not only products but also value, leading to the concept of the "value chain" (Porter 1985). This allowed managers to consider how value is added at each step along the chain.

Supply chains increasingly are moving from mechanistic and deterministic models to what John Gattorna (2006) calls "living supply chains." As he writes, "Whether we accept it or not, we are already shifting from Newtonian-like thinking to a more organic model." These are supply chains that have the flexibility to respond to the dynamically changing needs of customers and consumers. The way value is created and shared in these "value webs" is also more complex.

In the past, transaction costs represented a limiting factor in making supply chains more flexible and global. The cost of coordinating with different partners and transporting goods and information around the world made it cheaper to keep manufacturing within a single factory, or at least close by. Globalization, improved communications, computing and the Internet, and low-cost shipping reduced transaction costs and contributed to the rise of "borderless manufacturing." As transaction costs have dropped significantly, this has led to the unbundling of the supply chain.

Since Henry Ford set up his famous assembly line near Detroit, the most efficient way to run a factory was to put everything under one roof. Then, companies such as Toyota opened the front doors of the factory and put their suppliers just outside the gates. This created Toyota City. The suppliers were still geographically co-located on the same campus, but they were separate companies outside the factory. Dell and other companies then engaged in global sourcing, purchasing computer chips and other technology from Asia.

As global logistics and coordination have improved, these suppliers can now be virtually anywhere. In fact, "right outside" the factory gates now means anywhere on the planet. Boeing's 777 jet is assembled from three million parts from more than 900

suppliers from 17 countries around the world.[2] Boeing primarily produces the wings and fuselage, as well as assembling the aircraft. Most of the plane's components are outsourced around the globe. For its 787, the company is also outsourcing systems for collision avoidance and landing in zero visibility to Indian engineers at HCL Technologies outside New Delhi. This not only allows the company to find best-in-class providers for each component but also gives each of these nations a vested interest in the success of the aircraft. This, of course, helps in spreading risk and making global sales.
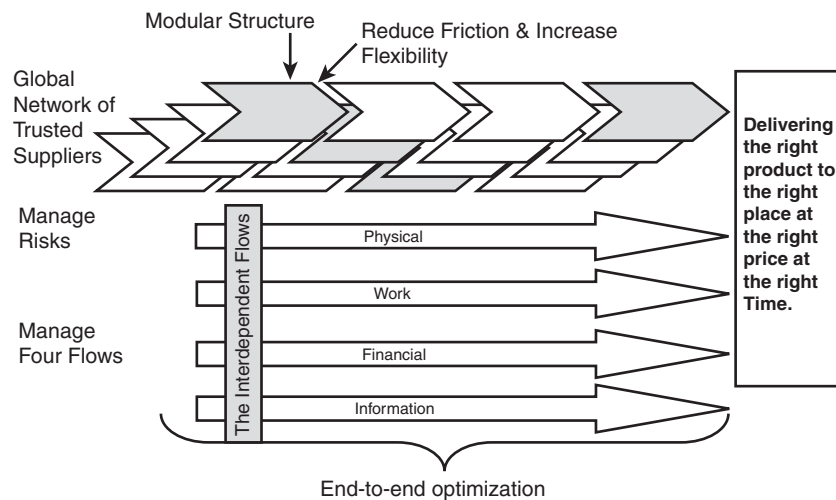
Companies realized that the supply chain could be broken up and spread across the globe. They could do more than source *products or components* from other parts of the world. They could put stages of the supply chain in different parts of the world and coordinate them centrally. This meant breaking up the *processes* of the supply chain, farming them out to different companies in different locations, and then managing these dispersed processes. This is what John Hagel and John Seely Brown (2001) have referred to as "process orchestration." Through orchestration, companies could optimize the overall supply chain to deliver the right product to the right place at the right time at the right price.

Henry Ford's factory was built on the principle of *division* of labor. The new principle was orchestrated *dispersion* of labor. Henry Ford's factory was based on large operations that offered economies of scale, whereas orchestration is based on assembling armies of small and medium business that could act as one.

The Four Flows: Where Atoms Meet Bits

Dispersed manufacturing and network orchestration are made possible because of improvements in four flows required for the manufacturing process: information, financial, physical, and work flows, as shown in Figure 17-1. In traditional supply chains, these four flows were integrated. The shipping information traveled with the physical order, and money changed hands with goods. Physical flows and work flows were essentially the same. Traditional supply chains were difficult to reconfigure, were easily disrupted, and required long lags between placing the order and receiving the finished goods. Even when global supply chains were created, they were fixed. The goal was to keep driving to make them more efficient after they were established, rather than creating the best new design for the chain at any given moment. Flexibility came at a high premium.

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[2] "777 Family," www.boeing.com/commercial/777family/pf/pf_facts.html.

Figure 17-1   Network orchestration

The forces that are flattening the world (see the sidebar "Friedman's Ten Flatteners") have affected these four flows. These forces have accelerated and improved each of the flows. These interrelated forces are flattening the world and transforming management, making logistics more efficient and more global and creating opportunities to rethink the organization. Consider how each of these four flows has been transformed.

Friedman's Ten Flatteners

The ten flatteners identified by Thomas Friedman in *The World Is Flat* (paraphrased slightly):

- End of Cold War and rise of personal computer (IBM PC)
- Internet (Netscape IPO)
- Work flow software (Wild Brain, PayPal)
- Open sourcing (Linux, Apache)
- Outsourcing (Wipro, Infosys)
- Offshoring (Chinese manufacturing)
- Supply chaining (Wal-Mart)
- Insourcing (UPS, FedEx, and Modern Logistics)
- Informing (Google, Yahoo!, and MSN Web Search)
- Digital and wireless (The Steroids)

Information Flows

In *Being Digital,* Nicholas Negroponte, founder of MIT's Media Lab, highlights the distinction between bits and atoms. A physical product such as a printed book or music CD is limited by atoms, whereas an electronic version is made of fluid bits. Transforming an information, entertainment, or financial product from atoms to bits makes geography and time almost irrelevant. The bits can flow anywhere in the world almost instantaneously. Think about music on a CD versus a download through iTunes. The CD has to be packaged and stamped and shipped to a retailer. The customer buys the CD and takes it home. For the electronic download, the customer clicks a button, the payment is made via credit card, and the transfer begins. This transformation from atoms to bits in such products has been the low-hanging fruit of the information revolution. It is not surprising that the services that have been outsourced abroad, such as computer programming or customer service, are those that could be easily digitized. These advances improved and accelerated the information flows.

Information technology has enabled the work and information to become more dispersed. The first separation occurred with the fax machine, whereby paperwork could make its own path separate from the physical products. But with modern information technology, the information flows are now separate from the order and can be accessed from anywhere in the world at any time. An order can clear customs while the shipment is en route because the information travels separately from the physical goods.

Financial Flows

Financial flows also have been digitized and globalized. Through digital technology, hard currency has become liquefied. Global capital can flow more freely, allowing the design and operation of cross-national supply chains and better management of risks. There also has been a shift in the center of economic activity to new countries and regions. As global capital markets have developed, capital flows have been accelerated and separated from physical flows.

Physical Flows

A shirt or a toy cannot be converted into bits. It is a physical product, and at the end of production, it needs to be shipped to its end market by land, sea, or air. Advances in logistics, including global shipping, use of containers, and technology to track shipping,

have made moving between remote locations faster and cheaper. A buyer who wanted to change the fabric for a product used to have to get on a plane and fly out to the factory with a sample. Now, the sample can be shipped overnight. FedEx, UPS, DHL, and other carriers have rethought and improved every aspect of shipping and logistics. This is what UPS CEO Mike Eskew has called "synchronized commerce," in which goods, information, and funds "are seamlessly connected to benefit businesses worldwide" (UPS 2003). As costs have declined, every year, more goods are moved by air. For example, 34% of goods from Hong Kong were moved by air in 2006, rising by 1 to 2 percentage points a year, and half of the cargo moves in passenger aircraft, making it less susceptible to spikes in fees from rising fuel costs.

Work Flows

Online retailers such as eBay, Amazon, Netflix, and Audible began addressing the challenge of building interfaces between the bits and atoms to deliver physical products ordered through electronic channels. They began separating financing and information from the product and to take advantage of improvements in shipping to reduce delivery times, accelerating information, capital, and physical flows.

But these improvements only addressed the supply chain after manufacturing was completed. Producing goods such as cotton shorts presents a more complex challenge. Not only does this process require moving atoms from seller to buyer, but also these atoms have to be designed, sewn together, packaged, assembled, and moved around. The challenge here was to improve the *work flows*, to break up and manage processes that are dispersed across diverse geographic locations. Although only part of the modern supply chain could be turned into bits, the improvements in information, capital, and physical flows created opportunities to rethink work flows.

Modularization of manufacturing and other value chains has made it easier to separate parts of the chain to be outsourced. New software to track and manage work processes has helped to keep control in a world of dispersed manufacturing. The first stage in this process was the outsourcing of specific functional areas such as customer service or accounting. The next step is to outsource all but core processes of the chain to the optimal locations in the world.

With a modular structure, the network is the universe of suppliers from which a specific supply chain is precipitated. A specific supply chain is called forth from this universe in response to the demand of the customer. Whereas the old factory ended with the customer, this process begins with the customer.

The Need for Orchestration

Modern management and control systems arose out of the vertically integrated factory. With more fluid value networks, the challenge is to control a supply chain or other value chain through partners that the company does not own. This is a daunting challenge as demonstrated by the many alliances, outsourcing, and offshoring engagements that have run into problems, often due to coordination and control issues. Studies find that half of all strategic alliances fail. Several recent studies have concluded that half the organizations that shifted processes offshore failed to generate the financial returns they had anticipated (Aron and Singh 2005). A study of outsourcing by Deloitte Consulting found that major stumbling blocks include governance, management attention, and change management (Deloitte Consulting 2005). Companies such as Nike, Wal-Mart, and McDonald's have found out the hard way that they are held responsible for what happens in the factories of their outsourced partners—no matter how far removed. This has led to increased scrutiny of working conditions, environmental impact, and other issues throughout the entire network. More recently, we have seen tragic problems with product quality leading to poisonings in products from pet foods to children's toys.

What is missing in many cases is orchestration. It is not enough to set up the network or contract with a partner. Without orchestration, many of the gains of networks and global collaboration can be lost because the resulting supply chains are suboptimized. Orchestration is different from managing a typical internal process. It requires a more fluid approach that empowers partners and employees, while maintaining control at the same time. Network orchestration is the design and management of networks that work together to achieve a common business process. In a networked and flat world, this has become an increasingly important competency.

Although we developed the principles of network orchestration in a manufacturing enterprise, they have broad applications across diverse industries and activities, from research and product development to services. These diverse networks include a business built by Olam International working with small and mid-sized farmers in 40 countries to orchestrate a network for agricultural products and food ingredients. There are research networks such as the Connect & Develop initiative of Procter & Gamble that have linked it with more than 1.5 million independent researchers around the globe, or the external networks that have helped Canadian-based GoldCorp significantly improve the yield of its mining business by orchestrating an eclectic group of experts outside the firm.

Companies have created marketing networks to orchestrate hundreds of thousands of buzz agents to get messages across and promote products. There are networks for innovation such as a system built around Nike and iPod to create an electronic personal trainer. Global sports leagues offer another example of the power of coordinated networks, and even the military is increasingly turning to networked models to meet the complex challenge of fighting modern wars and addressing global terrorist networks.

All these examples have one thing in common: They all are based on networks that come together to create a product or service. And they all require orchestration to keep these networks operating at their peak and prevent them from devolving into chaos. The principles of network orchestration can be applied to these networked enterprises in addition to supply chains and manufacturing.

Although Li & Fung is a large multinational, the opportunities for network orchestration are not limited to large global companies. These opportunities apply equally to companies large and small. In Hong Kong alone, there are at least 50,000 smaller trading companies that manage global (or at least regional) supply chains. They all do some form of network orchestration, although not as extensively as Li & Fung. In fact, the new technologies and other shifts of the flat world lead to a leveling of the playing field that makes it easier for small firms to participate in networks or to engage in network orchestration.

Implications of Network Orchestration for Strategy and Competencies

What the discipline of management was to the old vertically integrated, hierarchical firm, network orchestration is to the company working in the flat world. It is an essential capability for this world. Strategy for network orchestration focuses on competing "network against network," which means that the strategy for the firm is embedded in its strategy for the network. Competencies in this world increasingly are in the network rather than held tightly by the firm (as discussed by C. K. Prahalad in Chapter 2, "Creating Experience: Competitive Advantage in the Age of Networks"). This means the ability to connect to competencies may be as important as any firm-centric capabilities. This ability to connect and manage competencies in the broader network is a capability for network orchestration, which, along with learning, may be one of the meta-capabilities that is most important for a networked world.

Networks Need Orchestration

In spite of the mythology, not all networked enterprises are grassroots democracies, as they are sometimes portrayed. As Nambisan and Sawhney point out in Chapter 9, "Network-Centric Innovation: Four Strategies for Tapping the Global Brain," some networks have more centralized control whereas others have more diffused leadership. The orchestration involved in a symphony orchestra is obviously different from that for a jazz quartet. But even a group of jazz musicians in a jam session has a leader. Sometimes this orchestration is shared by members of the network, and it may even be largely embodied in a set of rules that guide the relatively autonomous actions of members of the network. Even political democracies are carefully orchestrated through primaries and elections. They sometime need ad hoc orchestration when this system breaks down, as was the case with the 2008 elections in Kenya or the 2000 U.S. election race between George W. Bush and Al Gore, which was referred to the U.S. Supreme Court. Human networks that produce some deliberate product, service, or other outcome often require some type of orchestration.

Wikipedia, for example, while democratic, is not a completely open playing field. A network of some 13,000 writers and editors keep an eye on entries to ensure they are kept current and accurate. Editors weed out nonsense pages, prevent the malicious rewriting of history, and ensure continued development. The architecture of the community, which often is forgotten in celebrating its populist origins, is largely responsible for ensuring that Wikipedia and other open source projects don't disintegrate into chaos. There is active orchestration of this network to ensure that it produces something of value.

A core set of Wikipedia entries has been "protected" so they no longer follow the celebrated "anyone can edit" policy. These are entries such as "Albert Einstein," "George W. Bush," and "Adolph Hitler" that were particularly susceptible to vandalism or "drive-by nonsense," in the words of founder Jimmy Wales. There is also a 14-member arbitration committee that serves as the court of last resort for disputes about entries. Wales ultimately has the last word on difficult issues (Hafner 2006). For open source software collaborations such as Linux, a governing body ensures tight oversight and control of the work of the diffused community of programmers.

The success of a community depends on its design, its governance, and the processes around which it is organized, as well as its motivating power to engage its

members and attract new ones. There is no autocratic CEO of Wikipedia, but there is a system for generating and vetting entries that helps to improve the network and ensure that it operates according to a set of core principles. In a supply network, this role of governance and design of processes and motivation is played by the network orchestrator. The orchestrator ensures that the collective "wisdom of the crowd" is tapped, and the network thinks and acts more wisely than any individual member.

Social networks such as MySpace and YouTube, on the other hand, which are less designed to produce a collective product, have less of a need for this governance and orchestration. They are channels and marketplaces, facilitating interactions or transactions. They are valuable in their own right, but because they are focused less on creating a collective deliverable from the network, they have less need for network orchestration. As networks such as YouTube are used to create a collective product, however, they demand more orchestration. For example, when CNN sought to solicit questions by YouTube for a debate among U.S. presidential candidates, the broadcaster stepped in to structure the process and make the selection from the many submissions. Arriving at meaningful questions for the presidential debate required some level of orchestration that goes beyond simply sharing a favorite video with a friend.

Where there is a network coming together to create something, some player or group of players often has to play the role of orchestrator. It could be the company itself, its partners, or a dedicated outside orchestrator. This role of designer and orchestrator of the network is a new role and a new capability, which is often overlooked. But it is perhaps the most important capability for competing in a flat world.

Three Roles of Network Orchestration

What do network orchestrators do? The network orchestrator plays three primary roles related to the focus, management, and value creation of the firm and network, as shown in Figure 17-2. Each of these roles is the expansion of the role of a manager within a more limited fixed factory or traditional firm.
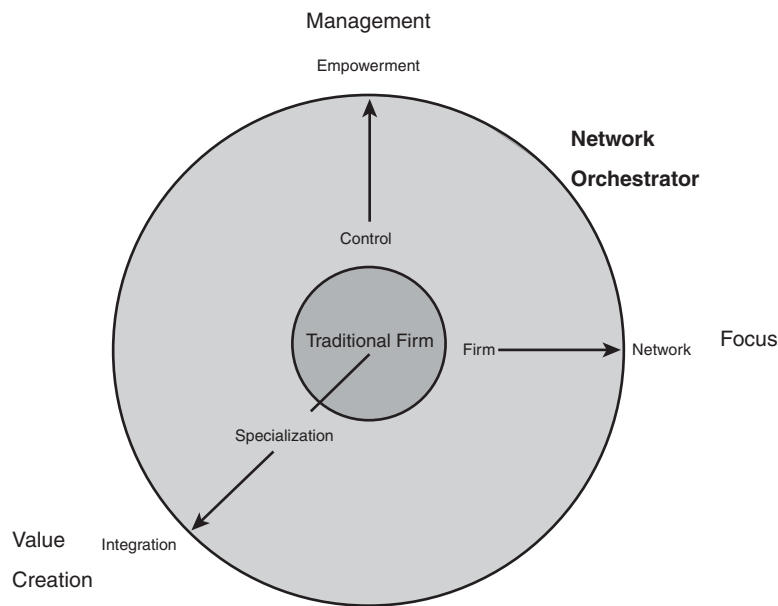
Management

Empowerment

Network

Orchestrator

Control

Traditional Firm   Firm ——————→ Network   Focus

Specialization

Value   Integration

Creation

Figure 17-2   Three roles of network orchestration

The movement from a traditional firm toward the network orchestrator requires a shift in focus from the firm to the network, a shift in management from control to empowerment, and a shift in value creation from specialization to integration. Since few companies are "pure" network orchestrators, the world is not completely flat, and companies need to be concerned about their shareholders, employees, and other stakeholders at the center, companies typically need to strike a balance somewhere between the inner circle and the outer one.

Role #1, Design and manage networks—First, the network orchestrator needs to shift focus from viewing the firm as the center of the universe to looking at the network. Companies don't compete against other companies. Networks compete against networks. Two retail stores on opposite corners in New York City may appear to be direct competitors, but this is an illusion. They are not competing against each other in isolation. Each store has a supply chain stretching from its shelves out to the world. The best supply chain will win. Before a customer walks into the store, often the game is over based on the superior supply chain. The best supply chain is drawn from a robust universe of suppliers. It is no longer possible to compete by looking at a company in isolation from the network. The orchestrator creates the broader network and then draws supply chains from it.

Role #2, Control through empowerment—Second, with a dispersed network, the orchestrator needs a different form of leadership and control. In a world in which orchestrators do not own the means of production, what holds this network together? In contrast to rigid control systems used to manage factories, the network orchestrator relies not just on rewards but also on a combination of empowerment and trust, as well as training and certification, to manage a network that it does not own. In addition, the orchestrator empowers its own managers and suppliers to act entrepreneurially. In contrast to command and control systems, the orchestrator works like a guest conductor in an orchestra. The conductor may not have the ability to hire or fire people but coordinates a highly skilled set of independent musicians. Empowered end consumers demand more customization and flexibility, which makes it more challenging to orchestrate networks, but can also create opportunities for companies that have the flexibility to meet these rising demands. Consumers want more transparency from networks and more control over both the end product and the processes used to create it.

This empowerment is created through using "loose-tight" relationships with suppliers that are used to design supply chains around customers. For example, Li & Fung sets a target of having at least 30% of the business of a given supplier but not more than 70% (the 30/70 rule). Li & Fung also establishes units headed by "Little John Waynes" who can act entrepreneurially within a large organization, creating a "big-small" company. Loose relationships and tight controls allow the orchestrator to take responsibility for the whole chain, even though it doesn't own it. Finally, Li & Fung uses a planning process built around three-year stretch goals to balance stability and renewal.

Role #3, Create value through integration—Finally, orchestrators have a different way of creating value. Value in the traditional firm came from specialization, honing skills in specific areas, protecting trade secrets, and keeping out rivals and even partners. Value comes from fighting for a piece of a limited pie and protecting specialized core competencies. Value in the flat world, in contrast, comes from integration, bridging borders as well as leveraging the company's value and intellectual property across the network. This integration means spanning the separate steps of the supply chain to create and capture more value after the product leaves the factory. For a typical $4 stuffed toy, the in-factory costs might be $1 and the ex-factory costs might be $3. In a world in which almost every penny has been squeezed from factory costs, the "soft $3" may be the most attractive target for finding value. In addition, value is created by spanning borders between functions within the company, such as identifying new opportunities for marketing and sales in emerging markets where manufacturing is sourced—to "sell to the source." Orchestrators need to know when to open the doors wide to create value as

integrators and when to produce value by focusing on the specialized resources of the firm.

The three roles of orchestrators are interconnected and work together. The more dispersed networks become, the more there is a need for empowerment rather than direct control. The more empowerment if given to suppliers and customers, the more managers need to look across the network rather than focusing on their own firms. The more organizations move toward orchestration, the more they need to be able to build and capture value across the network rather than within the firm. All together, these three roles move companies from the center circle of the figure to the broader outer circle of the networked enterprise.

Striking a Balance

Network orchestration is a multiplier that increases the reach and effectiveness of the organization. It is not a replacement for sound planning and control processes that are currently employed by multinational corporations. These processes are still needed within the organization, and some existing processes can be used with minor modifications. Network orchestration extends standard business processes to a broader network but also requires skills that are distinctive to network orchestration. By doing so, it magnifies the reach and impact of the organization, and increases its flexibility.

The world is not completely flat, and one of the roles of the network orchestrator is to balance the flat and round worlds. For example, in global manufacturing, there are many bilateral trade agreements that create mountains or superhighways for manufacturing supply chains. These bumps in the flat world create a shifting terrain and market imperfections. As with any such imperfections, this presents opportunities for companies with the flexibility to design their businesses around the new realities. The orchestrator needs to come up with the best customer solution given the current landscape and then adjust that solution when the landscape shifts tomorrow, as it will. The orchestrator needs to keep one eye on the possibilities of the flat world and one eye on the very textured realities of the unflat world.

In orchestrating networks, companies also have to balance a focus on the long-term with a short-term interest in maximizing value. For example, it might be advantageous for a network orchestrator to provide financing to a partner in the network. This entails a short-term cost for a loan that might not be something a bank would offer, but it improves the overall functioning of the network. It might allow for the factory to have

longer lead times in fulfilling an order, reducing overtime and decreasing shipping costs. This benefits the network overall, and so could justify the investment by the orchestrator. Because the focus is on competing network against network, sometimes the orchestrator will have to sacrifice its own short-term interests to optimize the network—which benefits itself and its partners in the long run. In this case, the orchestrator also knows the risks better than an outside bank, so it can more effectively make such investments.

The Need for Orchestration

With growing concern about environmental impact, working conditions, and product quality, this network orchestration has become more important. Although some see missteps in global outsourcing and offshoring as a sign to pull back and bring more work back home, we need to be careful not to throw out the baby with the bath water. Global networks have created tremendous opportunities and efficiencies that have benefited consumers around the globe. The real lesson in these missteps is the importance of network orchestration. Networks don't run themselves. They are not just designed on paper. Henry Ford didn't just design his factory and then walk away. It required active management to make it work. The same is true for modern networked enterprises. The management required is different from that described by Alfred Sloan and Peter Drucker in the early days of General Motors (which is facing its own challenge in competing against more nimble rivals such as Toyota in a networked world). What is required today is network orchestration.

In the round world, the most important question in developing a supply chain or process chain was to determine *where* it would be handled. As in real estate, the rule was "location, location, location." The costs of moving goods around and tracking information were so high that geography was the first concern. This was an age when toys and garments were made in New York City, close to their market. But as coordination and logistics costs have fallen due to new technology and innovations such as shipping containers, geography has become less important.

There is a new concern, which is not just where but "what do to" and "how to do." After the "what" is determined, companies can find the best place in the world to do it. This is the question at the center of global outsourcing. But the question for network orchestration goes further. It is not just sourcing products but rather designing global processes. What is the best possible way to get this particular job done, the best path through a network of global possibilities? The total quality movement within the factory

focused not only on doing things right, but on doing the right thing. Similarly, the network orchestrator looks at more than cost and efficiency. The orchestrator is focused on designing the best possible processes across a global network for delivering the right product to the right place at the right time at the right price.

Many enterprises in diverse settings have begun to recognize the need for network orchestration. This is a meta-competency for a networked world. If your company is part of a network, the questions to ask are, Who is orchestrating? If there is no orchestrator, should you create or play this role? How can the principles of network orchestration—focusing on networks, managing through empowerment, and creating value through integration—be tailored to your own situation? If you don't see your company as part of a network, are you viewing your world too narrowly? Have competitors already created networks that are competing against you? Will you be able to survive in this world?

Competing in a flat world means more than contracting with a company in Bangalore or Shanghai. It requires active orchestration and a different approach to the business. The principles of network orchestration that have been described apply to any organization that is part of a network and needs to seize the opportunities presented by an increasingly flat world. Because networks require orchestration, skills in leading or participating in networks are becoming critical for success.

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