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Shaping Global Operations*

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Modelado de operaciones globales
Moldar operações globais

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Managing the global production network is becoming more complex. The critical issue is no longer where to produce a product but where to perform individual production tasks. Latin American companies are at both ends of this process. They face this issue for producing their own products and services for the large Latin America region and as host sites for outsourced operations by other companies—particularly those with "near-sourcing" strategies for serving the US market. In this paper I present a framework which helps charting the evolution of a firm's global operations network. The research is based on clinical analysis of four companies and examples from a few more (a particularly relevant one is the case of Zara). While the focus in this paper is not on any specific region of the world, the framework presented here can serve as a useful guide for Latin American companies. As Latin America moves beyond being a source for supplying commodities to the outside world, the issues of how to design, and fit into, a global production network will deserve more attention from senior managers in this region.

La gestión de las redes de producción global se está convirtiendo en algo muy complejo. El problema fundamental ya no es dónde producir un producto, sino dónde llevar a cabo las distintas tareas individuales de producción. Las empresas de América Latina se encuentran en ambos extremos de este proceso. Se enfrentan al problema por producir sus propios productos y servicios para toda la región de América Latina y por ser sede de operaciones subcontratadas a otras empresas (concretamente, aquellas con estrategias de proximidad para dar servicio al mercado norteamericano). En este artículo se presenta un marco de trabajo que ayuda a esquematizar la evolución de las redes de operaciones globales de una empresa. El estudio se basa en un análisis detallado de cuatro empresas y en ejemplos de otras tantas (caso especialmente relevante es el de Zara). El artículo no se centra en ninguna región concreta del mundo, ya que el marco de trabajo presentado es extrapolable a todas las empresas de América Latina. A medida que esta región va más allá de ser una fuente de suministro de materias primas para el resto del mundo, los problemas de diseño, ajuste y redes de producción global merecen una atención más pormenorizada por parte de los directivos de la región.

A gestão das redes de produção global é algo que está a tornar-se mais complexo. A questão fundamental já não é onde produzir um determinado produto, mas sim onde levar a cabo as tarefas de produção individuais. As empresas latino-americanas encontram-se em ambas as extremidades deste processo. Deparam-se com esta questão na produção dos seus produtos e serviços para a vasta região que é a América Latina e na qualidade de locais de produção para operações de subempreitada atribuídas por outras empresas (principalmente as que recorrem a estratégias de "near-sourcing" para servir o mercado dos EUA. Neste artigo, apresentamos uma base que ajuda a esquematizar a evolução da rede de operações globais de uma empresa. O estudo baseia-se numa análise detalhada de quatro empresas e em exemplos de mais algumas (um caso particularmente relevante é o da Zara). Enquanto que o ponto de focalização deste artigo não está numa região do mundo específica, a base aqui apresentada poderá ser um guia útil para as empresas latino-americanas. Numa altura em que a América Latina vai mais para além de ser apenas uma fonte de fornecimento de comodidades para o mundo exterior, a questão de como conceber e encontrar o seu lugar numa rede de produção merecerá uma maior atenção por parte dos gestores de topo desta região.

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1. Introduction

Managing the global production network is becoming more complex. The critical issue is no longer where to produce a product but where to perform individual production tasks. A decade ago, a toy maker might have moved the production of its toy robot to China; today, if it has moved with the times, it is more likely to have its plastic body produced in Malaysia, speakers in Korea, motors for legs in Taiwan, voice recognition software in the US, assembly in China, and finishing, inspection, packing and storage for worldwide distribution in Dubai or Panama.

Coordinating all this is not easy. Some companies make a mess out of it and turn their global production into a function that hinders their agility and performance; others turn it into a formidable advantage.

There are no simple explanations for the differences between the two groups. You find both types in the same industry. Seemingly similar production networks—similar in their global spread of factories, degree of outsourcing, and logistics systems—work well in one company but not another. Delve deeper, and you find that the production networks in most companies are results of a series of incremental decisions through the years, each justified by convincing arguments and extensive cost analysis. So there must be something in the cumulative effect of these decisions—not the individual ones. The answer must lie in the differences in higher-level strategies in these companies.

But what are these higher level strategies for crafting the firm's global production network? The objective in this article is to answer this question. Specifically, it proposes a framework for clarifying the strategic options for directing the evolution of these networks. It is based on clinical analysis of four companies and examples from a few more. The rich literature in management of multinational enterprises--in particular, the network theory (e.g., Ghoshal and Bartlett 1990), evolutionary theory (e.g., Zandar and Kogut, 1993) learning organization (e.g., Hedlund, 1994) and knowledge transfer (e.g., Grant, 1996), all of which view the multinational organization as a web of inter- and intra-firm relationships—provide the conceptual foundation of this framework. A common theme among these theories is that multinational organizations can benefit greatly from transferring resources and competencies developed in different locations within their company, Another conceptual foundation behind this framework is from the literature in industrial networks (e.g., Karlsson 2003) and manufacturing networks (e.g., Shi and Gregory, 1998). This literature, among other things, focus on how advances in information and communication technologies and increased pace of globalization have made it easier for firms to access the capabilities of other firms.

I should add at the outset that what is presented in this article is only one out of many steps in this long road. There are many issues in managing a global production network that are not addressed here. Still, the framework is a useful tool for senior managers who wish to clarify the direction for the evolution of their company's global production networks.

In Latin America, with its large regional market and proximity to even the richer US mar-

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ket, the framework can be particularly useful. The drivers for global expansion of production networks affects Latin American companies just like companies elsewhere; but in addition, Latin American companies are in a unique position for being strong players in the so called "near sourcing"[1] strategies by companies that serve the US market. As Latin America moves beyond supplying mere commodities to the outside world, the issues of how to design, and fit into, a global production network will deserve more attention by senior managers in Latin American companies. The framework presented here is designed to help that discussion.

2. Models of production networks

There are two seemingly irreconcilable models for building production networks. One advocates staying footloose—that is, continuing searching the world for a better factory inside or outside the company and moving production there as soon you find one; the other advocates developing deep roots—making long term commitment to each production site and giving it the resources to reach its full potential.

Both models have their own logic. Those in search of more agility in an increasingly uncertain and volatile world usually argue for more footloose networks; and those who want more stability to develop unique production capabilities, ironically to cope with the same uncertain and volatile world, argue for more rooted networks. The first group wants to leverage capabilities of others and conserve own resources for other functions like design and marketing; second group wants to use own production and supply chain capabilities as a competitive weapon.

Companies often move unwittingly towards one of these models, especially the footloose model. They make incremental decisions without fully appreciating their cumulative and unintended consequences. There are always impressive cost-benefit calculations and presentations to support each decision, but, paradoxically, often the more elaborate these presentations, the more likely they are to take the attention away from the big picture and the long term strategy.

It is not unusual to see companies in the same industry moving in opposite directions. While Philips, the giant Dutch electronic company announces its intention to sell or close one-third of its 150 factories worldwide, its competitor, Samsung, continues to pour billions into its factories. Of course both companies are convinced they are right: Philips sees decreasing importance for owning its production, Samsung more. "If we get out of manufacturing, we will lose" says Samsung's CEO and vice chairman, Yun Jong Yong.

Both models can be successful. IKEA has succeeded with the footloose model and Intel with the rooted model.

1. "Near-sourcing" refers to the cases where the outsourced operation is to a site in close geographical proximity—for example, when a US company outsources production to a company in Mexico instead of China.

2.1. IKEA's Successful Footloose Manufacturing Network

With a network of 1300 suppliers in 53 countries, IKEA, a Swedish furniture company with €14.8 billion sales in 2005 and growing at 15% annually, works overtime to find the right manufacturer for its 9500 products. Simplicity, a tenet of Swedish design, helps keep costs down. IKEA's 12 full time designers in Almhult, Sweden, along with 80 freelancers, work hand in hand with in-house production team to identify the least costly suppliers with appropriate capabilities.

This is a trial-and-error process and the search never stops. IKEA uses it 46 trading offices in 32 countries to look for new suppliers. Most are in Europe, but IKEA is adding suppliers from other regions, particularly Asia. In 2005, China, with 18% of all its purchases, tops the list, followed by Poland (12%), Sweden (9%), Italy (7%), and Germany (6%).

Although IKEA is constantly adding new suppliers, it still builds close working relationships with its existing ones. It helps them in many ways, ranging from securing raw materials to coping with political and economic upheavals. For example, after the fall of the Berlin Wall, it set up a new company, Swedwood, to participate in the privatization of its suppliers in Eastern Europe. Today Swedwood has evolved into an IKEA supplier with advanced production facilities of its own in nine countries, mainly in Eastern Europe.

IKEA's suppliers are an integral part of its unique and clever system. IKEA designs its products in standard modules and procures similar pieces used in different products from the same suppliers—for example, flat table tops and bookcase shelves are bundled together and ordered to one supplier and the legs, columns, and other cylindrical wooden pieces to another. Then, in its own warehouses, IKEA sorts out the different boxes by models, and since the customer does the final assembly, it sells the pieces in the very boxes that come from suppliers.

It's a brilliant use of footloose manufacturing. IKEA simplifies what it needs from factories, hence has many potential bidders and gets competitive prices, and does not reveal design of its new products to its widespread and leak-prone supply network. That it then sells its bulky products in stackable, easy to transport "flat pack" boxes that allow customers to carry them home without a truck and pay less because they do the assembly themselves, make the system even more brilliant.

2.2. Intel's Rooted Manufacturing Network

Intel has had to cope with not only the familiar Moore's Law, but also with the less-familiar Rock's Law. Gordon Moore, an Intel co-founder, back in 1965 predicted that the number of transistors on a microprocessor would double every 24 months. Arthur Rock, Intel's first chairman, predicted that the cost of tools required to manufacture semiconductors would double every four years. Both have been right in the last 40 years.

Any company facing such compelling "laws" would perhaps be weary of investing in manufacturing. And if it did, you would expect to see it close old factories and open new ones

frequently. But not Intel. Intel has been the largest investor in plant and equipment in the industry over the last decade, and instead of closing its "old" plants, it continues to "retrofit" and keep them up-to-date. Results: a network of 15 viable manufacturing sites, 6 in the US and 9 outside the US,

This is a deep rooted manufacturing network. Each of these factories has received substantial capital investments every year and from time to time a large infusion of funds (sometimes billions of dollars) for major upgrades. The factory in Penang (Malaysia), for example, received substantial investments in 1988 (when it was opened), 1994 and 1997; the Irish plant in Leixlip in 1993, 1994, and 2004; the Costa Rican plant in 1997 and 1999; and so on. Same pattern is observed in the US plants: $2 billion in 2002 in the New Mexico plant to upgrade its equipment, $345 million in 2005 to upgrade the plants in Colorado and Massachusetts, etc. Clearly, once Intel chooses a manufacturing site, it puts a deep stake into the grounds with the intention of staying for the long run. It gives the factory the requisite resources, new knowledge, and training to survive and succeed.

While other companies faced with pale versions of the Moore's and Rock's Laws are turning away from investment in manufacturing and adopting a more footloose model, Intel continues to boost its deep-rooted manufacturing network. It demonstrates that, contrary to the popular view, manufacturing can be a critical competitive weapon especially when products and processes change quickly.

2.3. How to Choose?

The problem arises when a company adopts a model by default. In particular, those that end up with a footloose network--and there seems to be more of them in recent years--often get there not by a deliberate strategic choice but through a series of ad hoc decisions. They may shift production from one of their factories to another half way around the world to shave off production costs; they may decide to use contract manufacturers to fill a temporary gap in the production capacity or launch a new product quickly when there is yet no internal production capability; they may see an opportunity to reduce production costs, avoid investment in manufacturing, and show a quick improvement in return on capital employed if they outsource production. Perhaps they have no other option: their production volume is too small to justify building a devoted factory or they simply don't have enough resources to add production capacity.

Each of these decisions may be justified in isolation. However, together they can put the company on a slippery slope that pushes it further towards the footloose model. And the process is often irreversible.

Smart companies watch the evolution of their manufacturing networks carefully. They may choose to become more footloose, more rooted, or build a judicious combination of the two networks with clear demarcation lines. But whatever they do, they do with a clear long term strategy. They avoid the potential perils of moving unwittingly towards footloose manufacturing.

A. Attractions of footloose production

Several trends are making footloose production more attractive these days:

a) Increasing incentive to outsource production

Contract manufacturers are competing more fiercely than ever to convince the original equipment manufacturers (OEMs) give up manufacturing. Consider the cell phone industry: Hon Hai, Flextronics, Compal Communications, BenQ Corp and Arima Communication, five giant contract manufacturers, made over a third of the 800 million handsets sold in 2005. They offer lower production costs, partly because they can benefit from economies of scale and moving down the learning curve quickly, and partly because they accept small profit margins. They compete intensely for the OEM business and some of them have suffered losses in recent years.

Others, besides contract manufacturers, also want to take over more production tasks for the OEMs. FedEx, UPS, DHL, Ryder, Maersk, and other so called "third party logistics providers" (3PLs) are expanding their services for the OEMs. They are managing OEMs' raw materials and finished goods stocks, packing, shipping, and even doing some of their light manufacturing. Suppliers, too, are doing more: they are managing the inventory of their products in the customers' factories (through so called "vendor managed inventory" schemes), and making more complete subassemblies.

Meanwhile, shorter product life cycles, faster changing technologies, more uncertainty about the future, and generally more market volatility are convincing senior managers that investment in manufacturing is becoming more risky. So they're more open to offers by contract manufacturers, suppliers, or 3PLs.

b) Increasing incentive to move production

Even when an OEM is not outsourcing its manufacturing, it is under increasing pressure to move production to low cost locations. There are always places with lower wages, lower taxes, more generous government subsidies and access to cheaper raw materials. According to one estimate, foreign companies opened 60,000 factories in China alone between 2000 and 2003. Other countries in South East Asia, Eastern Europe, and many other regions are also receiving record levels of manufacturing investments. Latin America fits in this category.

This massive movement of production is destabilizing the manufacturing networks in many companies. The threat of moving production to lower cost locations has placed a heavier burden on existing factories to justify their new investments, production quotas, product allocations, and, ultimately, existence. This burden often leads to a race to cut production costs, and, ironically, more incentives to move production to lower cost locations. These companies edge further towards the footloose model.

B. Hidden costs of footloose production

Footloose production has four significant hidden costs:

a) Atrophy of expertise

Production know-how is not static. Like everything else, those who do more of something learn to do it better, and if they really focus on improving their method systematically, they develop deep expertise. The incremental improvements in production know-how are usually in tacit form, embedded in the skilled employees in the factory. It is not easy to transfer tacit knowledge. An OEM that invests litt-

le in manufacturing and frequently shifts production between its factories would not only slow down the process of developing new tacit know-how, but after a while would lose whatever expertise that it might have had.

And that would also harm its design capabilities. Toyota designs better cars partly because of its deep knowledge of manufacturing.

b) Hurting morale

Imagine you're working in a factory at Hewlett-Packard, Motorola, Nokia, or Xerox and you hear that production of some of your core products has just been given to Solectron, a contract manufacturer. The next rumor is impending layoffs. How would that affect your productivity?

The adverse effects are real, but hard to quantify and rarely included in the analysis of outsourcing decisions.

Even frequent shifting of production between a company's own factories, in the hope of reaping a quick benefit, hurts morale. It creates an atmosphere of uncertainty and instability that persuades most valuable employees to leave (thereby accelerating the atrophy of the company's production expertise) and make those who remain feeling less secure and motivated.

c) Commoditizing the product

Contract manufacturers have a strong incentive to use common components, subassemblies, modules, or even finished products. They put subtle but enticing pressure on the OEMs to use more standard modules and assembly processes. In doing so, they accelerate the process of turning the product into a commodity, resulting in smaller profit margins for the OEMs.

The PC market is a good example. As more and more PCs are made by contract manufacturers, what was once a highly differentiated market has become a cutthroat commodity market. The thinner margins of commodity products put more pressure on the PC companies to cut production costs and more motivation to use contract manufacturers and standard components. The same thing is happening to low-end mobile phone handsets, digital camera, and many other products.

d) Helping competitors

Up to 2004, BenQ Corp., a Taiwanese contract manufacturer, used to design and manufacture mobile phones for Motorola. Then it began selling phones in the treasured China market under its own brand name. Motorola abruptly cancelled its order, with costly short-term problems for both BenQ (which had lost 20% of its order book overnight) and Motorola (which had to find a new production source for those models immediately). But Motorola also faced a long-term problem: it had fostered a new and potentially formidable competitor. In June 2005, BenQ acquired Siemens Mobile Devices (world's fourth largest handset maker) and since then it has expanded its market in Europe and elsewhere.

Other contract manufacturers--like Flextronics, Solectron, HTC, Quanta, Premier Imaging, and Compal--are also moving into a potential collision course with the OEMs. Many contract manufacturers are adding more services, from product design to managing the entire supply chain, starting from procuring raw materials to delivering the finished goods to end users. They are getting bigger and more knowledgeable. Even if they don't enter the market with their own brands, they can help other companies that compete with their OEM customers. After all, they are in the business of solving manufacturing, design and

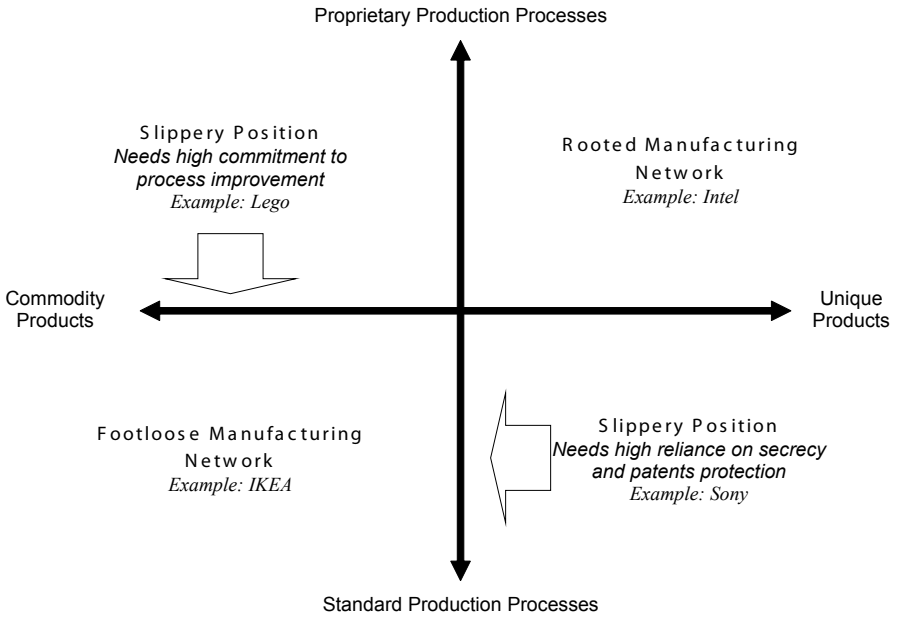
supply chain problems for more than one company.

While the electronic sector, with cell phones, laptops, high-definition TVs, MP3 players, digital cameras and other products, is further down this road, other sectors are not far behind. Household appliances, toys, pharmaceuticals, automotive components, furniture, textiles, and other sectors are also moving further towards the footloose model and, in the process, creating third party entities that can help their rivals or potentially become their direct competitors.

3. Clarifying the Long-Term Options

We need a systematic approach to cut through the complexity of all these tradeoffs and see when footloose manufacturing can fit the long-term strategy, when it can hinder it, and when it must be watched very carefully. We suggest a simple framework as a starting point. The framework is based on two fundamental attributes of the product: uniqueness of its design and exclusivity of its production process.

Figure 1: When to Be Footloose, When Rooted



In a nutshell, moving towards a footloose model is appropriate only when the product is turning into a commodity and the processes used for its production and delivery are becoming more standardized and widely available. In any other case this move can create long-term problems.

The logic is straightforward. The requisite know-how to produce a commodity product is usually highly codified and easy to transfer from one factory to another, inside or outside the company. Therefore, a footloose manufacturing network can work well. IKEA, for example, uses standard and widely available processes for production of its products. The products are simple assembly of easy to produce modules. Many suppliers around the globe have the required equipment and capability, and IKEA can pick and choose among them. (See the sidebar, "Simplify and Expand the Pool of Good Suppliers: IKEA's Successful Footloose Manufacturing Network.")

Can Intel, Toyota, or BMW copy IKEA's footloose manufacturing model? No—at least not for their core products. This is not just because they need more sophisticated suppliers who should be willing to make large dedicated investments, but more fundamentally, because they compete through producing unique products with proprietary production systems. They have distinctive capabilities in their factories, and since much of the accumulated know-how behind these capabilities is tacit, they cannot transfer them from one factory to another easily. They need the stability of the rooted manufacturing networks to succeed with such strategy[2].

Most companies have products that fall somewhere between the extreme cases of IKEA, and Intel. They have products that are somewhat unique and production processes that are partly proprietary. Normally, that translates to operating close to the diagonal on this framework.

But they could also be off the diagonal. A digital camera, a toy, or a tennis racket with unique features that are produced by standard production methods from standard components are examples of situations that fall below the diagonal. The temptation to go for the footloose model (for example outsourcing production to contract manufacturers) is great in these situations. But that would accelerate commoditization of these products because it helps others learn about the specific components, suppliers, and methods needed to produce similar products. A firm that wants to operate in this zone (like Apple producing its iPods by an undisclosed contract manufacturer) must rely heavily on secrecy, exclusivity, heavy investment in patent protection and aggressive pursuit of copycats. Otherwise it'll have to get into long-term and deep partnerships with a few carefully selected contract manufacturers, which in effect is akin to building a rooted manufacturing network.

Footloose manufacturing is even more dangerous for those that operate above the diagonal. Companies like Nucor and Chaparral that make commodity products (for example, steel rebars and profiles) with highly proprietary production processes operate in this zone. These companies have been successful but to stay in this position, they must keep up their relentless pace of process improvement. That can be done only in a rooted production network. Instability and meager investment in factories would erode the foundation of such strategy.

Lego, the Danish toy maker, also operates in this zone. In an industry where footloose manufacturing is the norm, Lego has maintained a rooted model for many years. It produces about 20 billion units of its famous "brick" (a small plastic cube) per year in its factories in Denmark, Switzerland, USA, and, recently Czech Republic. It also has a factory in Germany to make plastic moulds and in South Korea for brick decoration and packaging. When Lego esta-

2. See the article, "Making the most of foreign factories," Harvard Business Review, September-October 1997, for more details on how to plan and implement such strategies.

blishes a new factory, like the one in Czech Republic, it integrates it quickly into its global network and maintains its rooted model.

Lego's factories are not in low-cost locations. The temptation to move production of a simple product like the brick to lower cost locations or outsource it altogether must be unremitting, and Lego might yield to this temptation one of these days. All other toy makers either buy these kinds of products from suppliers or make them in factories in low cost locations. But so far Lego has managed to go against this trend by relying on proprietary production know-how and continuous investment in its factories. Its superior production know-how (which ranges from technical matters in mould design, plastics, and precision assembly to managerial ones in scheduling, order fulfillment, die maintenance, and processes reliability) has served Lego well for a long time in improving quality, enhancing product design capabilities, and keeping costs in control.

Operating in the zone above the diagonal demands such high levels of unwavering commitment to developing proprietary production methods. Companies without such deep and lasting commitment are likely to find it hard to stay in this zone. New production methods inevitably leak outside and, to stay ahead, they must constantly invest in new capabilities. That is a hard sell when products are commodities and there are suppliers who, at least initially, are willing to accept a smaller margin to get the job. This is a zone with a very slippery slope towards footloose manufacturing.

4. Choosing the Right Mix

For an OEM that competes with highly differentiated products that can only be made by proprietary production methods, the choice is clear: it must develop a rooted model. Of course, it can still use contract manufacturers but only temporarily and for filling a short-term gap. And when it does, it should ensure that the ad hoc nature of the relationship is transparent to all parties, especially its own senior managers and those who work in its factories.

Firms that don't offer highly differentiated products have a choice. If, like IKEA, they don't want to compete on the basis of proprietary production processes, they can adopt a footloose model[3]. However, if they do, then, like Lego and Nucor, they need to build a rooted manufacturing network.

Most other companies should consider a mix of the two models, but must be careful to use each model appropriately. Zara, the Spanish clothier with 750 stores in 56 countries, shows how such a hybrid model can work. (See sidebar, "Zara's Hybrid Model").

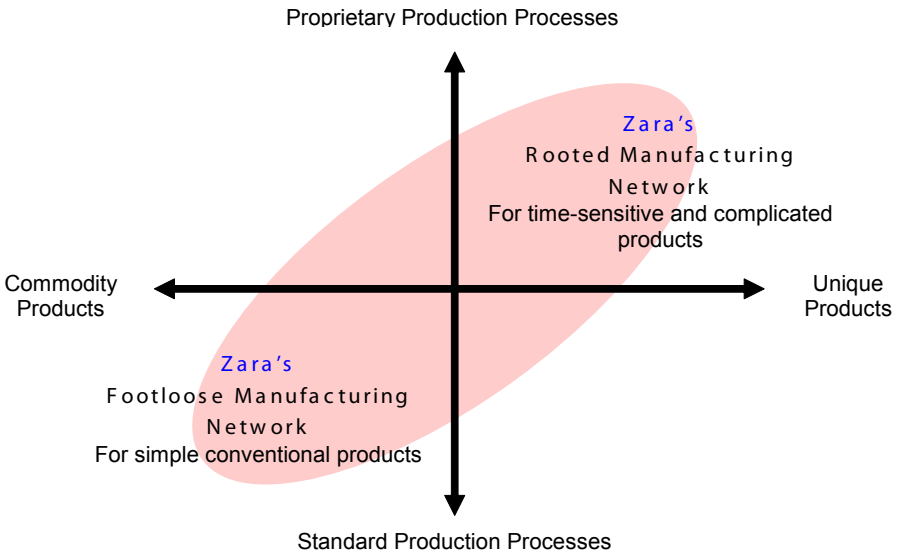
Zara is on the forefront of "fast fashion." It uses a rooted network for the more complicated and time-sensitive products—like women's suits in seasonal colors—and a footloose model

3. For an excellent description of how to manage a footloose manufacturing network, see "Fast, global, and entrepreneurial; Supply chain management, Hong Kong Style," by Joan Margetta, Harvard Business Review, September-October 1998. The article describes how Li and Fung, a Hong Kong based company that supplies apparel, toys and other products to big retailers successfully manages a highly footloose global manufacturing network.

for the simpler and predictable items, like men's shirts in classic colors.

This policy looks logical and senior managers in many companies say that's what they do. But look closer and you find that most are doing the reverse: they send the difficult, unpredictable, complicated products to contract manufacturers and outside suppliers and keep the predictable, simpler products for their own factories. Perhaps the usual key performance indicators for factories—production costs, productivity, capacity unitization, return on assets, and so on—are to blame. Zara, on the other hand, is careful not to do that. Its senior managers realize that footloose and rooted models serve different strategic purposes and keep them separate. If Zara made its factories match the production cost of its suppliers, it would soon disrupt its well-functioning rooted model.

Figure 2: Zara's Judicious Use of Both Models



Other companies also use footloose and rooted models side-by-side, but often not like Zara. Many expect their own factories to match the cost of outside suppliers, pushing them to keep simple and predictable products in-house and outsource the complicated and problematic ones—exactly the opposite of Zara. Such companies can easily slide into footloose manufacturing.

Zara's enviable accomplishment is in keeping these networks focused on different strategic targets: the footloose network on reducing production costs and filling temporary and seasonal capacity gaps, and the rooted network on developing unique production capabilities that support its fast-response supply chain system.

5. Avoiding the Slide

An abrupt move to footloose manufacturing can send a shock to the organization but at least it is visible and a conscious decision. The real danger of footloose manufacturing, as mentioned earlier, lies in the fact that it can creep up through a series of *ad hoc* decisions. A firm may slide into it without a deliberate or long-term strategy.

What are the danger signs? One of the early signs is when the company starts to move towards the commodity end of its market--relying more on competing on price than on other things like quick and reliable delivery, superior quality, opportunity for customization, or introducing products with more innovative engineering and design features. If the role of manufacturing is reduced to minimizing the direct production costs, it is hard to maintain a rooted model.

Another sign is when production of the new or more complicated products are outsourced. If it is not brought back into the company after a short period, alarm bells should sound.

Another, more worrisome, sign is when in addition to production, other functions like engineering, procurement, design, and distribution are also subcontracted out. The rapid transformation, currently underway, of contract manufacturers into so called “original design manufacturers” (ODMs) shows that this is a real threat. It can lead to untenable strategic positions. There are already examples where it is more appropriate to consider that it is the ODM that is outsourcing its marketing to the OEM than the OEM subcontracting its design, production and distribution!

The most ominous sign is also the most subtle one. Decisions that shape the manufacturing network in a company, ultimately, reflect the prevailing mindset of its senior management. Those who move towards the footloose model, deep down, believe that proprietary capabilities in manufacturing are not significant sources of competitive advantage in their businesses; those moving towards the rooted model believe they are.

It is not easy to detect a mindset. But in the end, the best way to avoid the slippery slope of footloose manufacturing is to convince the senior management that manufacturing can be a formidable source of competitive advantage. If needed, like Zara, you can use a hybrid model: footloose to differentiate on cost and rooted on other dimensions. But make sure to draw clear lines around each and avoid putting them in direct competition with each other. Don’t use the same performance indicators for the two networks.

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