

by
Ronald Haddock
ronald.haddock@booz.com

booz&co.

Integrating China Into Your Global Supply Chain

*Lessons Learned from Global
Supply Chain Integrators*

Booz & Company is a leading global management consulting firm, helping the world's top businesses, governments, and organizations.

Our founder, Edwin Booz, defined the profession when he established the first management consulting firm in 1914.

Today, with more than 3,300 people in 57 offices around the world, we bring foresight and knowledge, deep functional expertise, and a practical approach to building capabilities and delivering real impact. We work closely with our clients to create and deliver essential advantage.

For our management magazine *strategy+business*, visit www.strategy-business.com.

Visit www.booz.com/cn to learn more about Booz & Company in Greater China.

CONTACT INFORMATION

Ronald Haddock is a partner with Booz & Company. He has over 18 years of work experience in consulting and in management, and focuses on assignments in strategy, organizational design, operations restructuring, performance improvement and turnarounds. He can be reached at ronald.haddock@booz.com.

Originally published as:

Integrating China into Your Global Supply Chain: Lessons Learned from Global Supply Chain Integrators, by Christoph Bliss and Ronald Haddock, Booz Allen Hamilton, 2008.

Integrating China into Your Global Supply Chain

Lessons Learned from Global Supply Chain Integrators

For too long, many companies have exhibited tunnel vision in their approach to doing business in emerging markets, such as China, India, Brazil, and Russia. Some have seen them purely as venues for low-cost sourcing; others have considered them rapidly expanding pools of customers who are attracted to imported goods. But a new breed of company that we call global supply chain integrators (GSCIs) has recognized that these markets are more than just low-cost source markets or the mega-growth markets of our age: At a minimum, they are both.

The predominant example, of course, is China, with its established manufacturing base and a huge population that is steadily growing more affluent. However, the number of companies that have truly integrated their supply chains to take advantage of this opportunity is still small. Few companies have truly both understood and implemented strategies that leverage the game-changing nature of China in the global economy. But those that have are already reaping the benefits, and can offer key lessons to companies that want to follow in their footsteps.

The Players on the Field

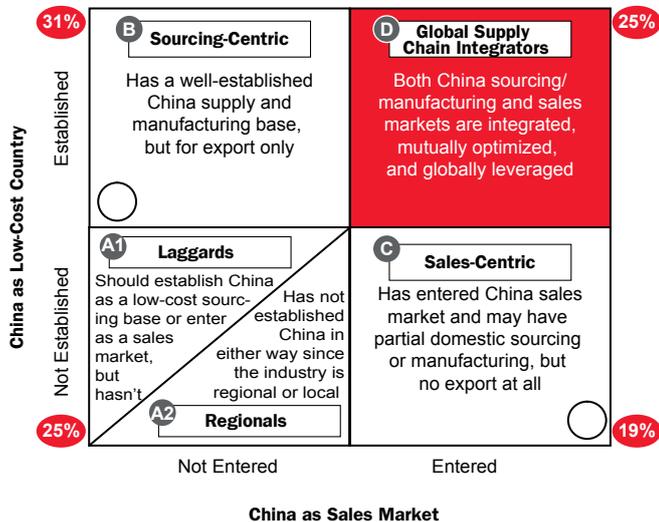
Many multinational companies (MNCs) pursue sourcing and market growth opportunities in China separately, without integrating them; alternatively, they do not see the full potential in China, and therefore suboptimize around narrow objectives.

While driving their “China sourcing” programs, for example, procurement managers are usually well aligned with the objectives of manufacturing, logistics, and quality assurance. However, in many companies they all too frequently fail to work with sales and marketing to consider how best to evaluate the total benefits that a China presence could offer their companies. On the other side of the coin, marketing and sales managers are often blinded by the promise of selling to potentially hundreds of millions of customers, without considering how major sales success in China could impact the global sourcing practices and manufacturing operations of their companies through the additional volume that this would provide.

Based on Booz Allen Hamilton’s work with hundreds of companies in China over the past dozen years, we have seen four types of multinational companies that are either operating in China or have the potential to do so (see Exhibit 1, page 2).

- *Type A: Laggards and regional companies.* Both laggards and regional companies have neither established China as a low-cost country for sourcing nor entered to pursue sales opportunities, though for different reasons. Some regional companies—such as those operating in the European trailer industry—are inherently local in nature, and thus selling in China is not economically feasible or desirable. Alternately, some companies may choose not to source in China because of unfavourable labor vs. cost thresholds—those that make axles, for instance.

Exhibit 1
Companies' Strategic Roles in China



○ Hybrids = Companies that have a combined buy/sell approach, but without being a global integrator

x% % of survey respondents in each category

Source: China Manufacturing Competitiveness 2007-2008; Booz Allen Hamilton

However, there are also laggards—companies that could benefit from both sales and sourcing opportunities in China, but simply have not executed strategies to do so.

- *Type B: Sourcing-centric companies* have well-established China supply bases, but they are primarily designed for export. Type B companies' sales operations and capabilities are limited to nonexistent; those that do have a small sales operation may, in the ultimate example of inefficiency, source in China, complete production in their home country, and then re-import to China. The typical companies in this segment are European or U.S. producers of high-end consumer electronics or mobile equipment.
- *Type C: Sales-centric companies* have had successful market entries in China in the past, in some cases resulting in significant sales volumes, which are either served out of their home country operations or by small domestic operations in China. These companies do not have major exports from China into the company's global operations. Typical

examples are some top-branded European car manufacturers.

- *Type D: Global supply chain integrators* have China sourcing, manufacturing, and selling activities, in addition to innovation activities, and these are integrated, optimized, and leveraged globally. This is an elite class of companies; it frequently includes smaller or medium-sized companies that, by necessity, had to take an integrated approach from Day One in China, launching a series of complementary initiatives that collectively have a company-wide impact that the boards of some larger organizations may have considered risky. Others may have started out as Type B or Type C companies and graduated to an integrated approach.

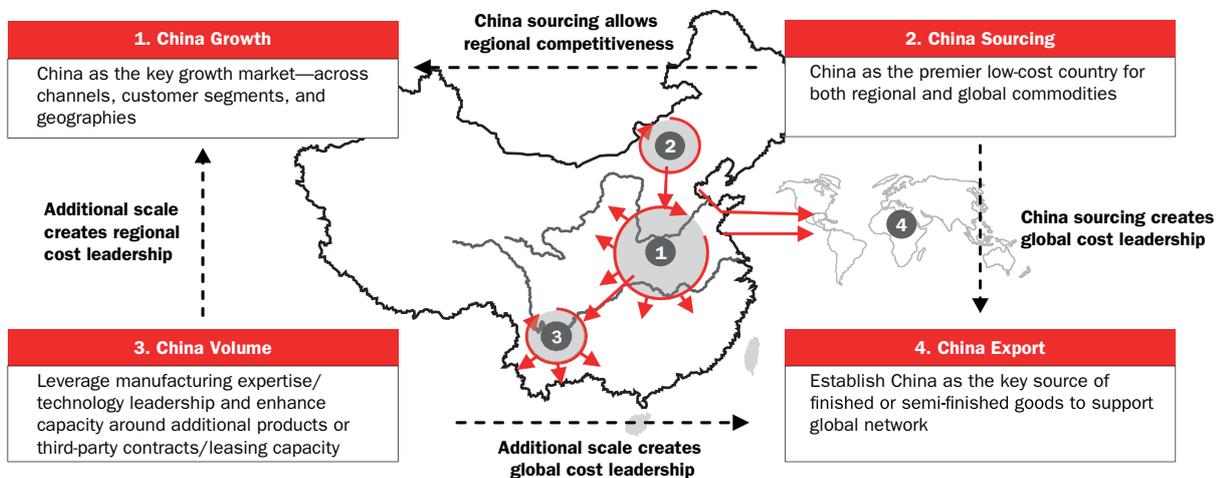
A good example of a global supply chain integrator is Hansgrohe, a German plumbing products company that became part of U.S.-based Masco Corporation in 2002. This company operates a dual-mode operation in China that supports sales in dozens of cities in China, plus supports its global operations network by producing some products in China and exporting to other countries. The company still imports some high-end products into China, but this makes sense. The basic products produced in China are labor-intensive, whereas the premium products from Germany, which require significant innovation and are capital-intensive, benefit less from factor-cost advantages in China, such as labor.

In another example, many vehicle manufacturers are in the process of building or extending dual-mode operations, including Toyota, Nissan, and GM.

At face value, the basic logic of integrating the global supply chain seems obvious. Yet a limited number of companies have demonstrated a real understanding of the concept, let alone implemented it. A recent survey conducted jointly by the American Chamber of Commerce in Shanghai (AmCham Shanghai) and Booz Allen indicates that only a quarter of the survey respondents actually exhibit the characteristics of a global supply chain integrator, while half still leverage only the sourcing operation or the sales operation, and the last quarter are hardly in the game at all.

Exhibit 2

The Interdependent Elements of a Dual-Mode Operation



Source: Booz Allen Hamilton

Putting It to Work

Sales and sourcing operations are interdependent; they can be combined to create truly dual-mode operations (see Exhibit 2).

The performance improvement benefits for companies that realize early on how to become global supply chain integrators can be substantial. Although it is difficult to compare the benefits of becoming a GSCI across industries, a high-level profitability analysis on GSCIs versus non-GSCIs has yielded some interesting results and insights as to the potential value. Based on our survey, companies that operate in China for both its local market and sourcing opportunities have shown average profitability of 30 percent versus only 18 percent for other companies. Additionally, there are other important differences in the types of management actions across GSCIs and non-GSCIs. To illustrate the point, let's look at two examples.

Volkswagen was an early entrant into China with a great deal of success in the market, due in no small part to the company's advantage as one of the first movers in the industry. It succeeded in localizing production, as well as most sourcing, and localized the China management team itself. However, it was slow to react to increasing global product convergence, fueled by global mergers and

acquisitions in the auto sector, and the resultant opportunity to globalize its supply base. The result? It suffered major share losses in China as it continued to sell aging products while competitors introduced attractive, new vehicles with more modern technology into some of the same segments. At the same time, due to the disconnect between its sales, sourcing, and production operations, the company was unable to leverage China as a low-cost sourcing base for vehicles produced in Europe.

This sequence of events brought Volkswagen to the realization that leveraging China as both a source and destination market to reduce costs through greater scale in production in China for the domestic and global markets, while refreshing its product line and upgrading capabilities in the organization in China, had the potential to address both challenges simultaneously. The company embarked on a turnaround effort and is now on a path to becoming a true global supply chain integrator. Had it focused its attention in this manner sooner, it would likely have reduced the lost opportunities that stemmed from its delay in becoming a GSCI.

In our second example, Masco, a global home and building products company, initially succeeded in sourcing commodities in China, growing from

Transitioning into a Global Supply Chain Integrator

Depending on their positioning, companies can follow certain strategies to become global supply chain integrators. For companies already globally sourcing or manufacturing for export out of China, the primary goal should be to gain additional scale benefits by capturing sales opportunities in the Chinese market itself. The key success factors in this case are differentiation, flexible business models, and third-party contract manufacturing.

A good example would be Wal-Mart, whose sourcing from China will reportedly reach US\$30 billion in 2008. Wal-Mart's China sales were substantially below this figure at the time of the study, yet Wal-Mart is rapidly adding new stores in China. Another example would be Home Depot, a major U.S. retailer of building products. Although its acquisition of China's Homeway, which was intended to grow Home Depot's share in the China market, is fairly recent, it has been sourcing large volumes of products from China for a long time, whether directly or through its legions of suppliers.

For companies that have high volumes of sales but limited production capacity in China, the main objective must be to fully leverage China as a low-cost country and to feed global delivery networks outside of China. The key success factors in this case are choosing the right ownership model, developing a cost-advantaged supply network through comprehensive footprint modeling, and deploying proactive risk-management practices across the entire implementation and relocation phases in China.

Many of the global luxury vehicle manufacturers, pushed by local content rules and pulled by rapid sales growth with increasingly affluent consumers, are undergoing this process. BMW and Mercedes-Benz both have aggressive footprint expansion plans in the mainland China market. Mercedes-Benz recently announced the establishment of operations in India in what would initially appear to be a sourcing-centric operation, but which has the potential to add sales capabilities and grow into a global supply chain integrator as India's demand for luxury-class vehicles grows.

approximately US\$100 million in sourced materials in the early 2000s to an estimated \$700 million or more by 2010. The company had also set up sales and marketing operations in China in the mid-1990s, but because sales operations were not focused on the same product categories as the sourced products, there was relatively limited potential for synergies. As the growth potential in China became more evident, however, it realized the opportunity that a dual-mode operation in China could offer and sought to build on this.

The company's current agenda includes moving toward more of a dual-mode operation in China under a unified organizational entity to encourage stronger collaboration. Had the company's initial plans included operations in China that were company-owned and controlled, it may have invested in a

factory with optimal assets for a dual-mode domestic-export mission, building an advantaged cost position for China and export much earlier on. The company's opportunity cost was arguably in lost market share in China and slower growth in its competitive position in the company's primary developed markets, the U.S. and Europe, due to some lack of competitively sourced products.

Although sourcing can indeed be treated separately, dual-mode setups often get a company to make earlier investments in serving more than one market, given the need to keep a factory in China busy. Once this capital is invested, top management will give more attention to getting the best answer for the company versus the more limited approach that a purely functional sourcing manager may take.

How GSCIs Can Optimize Their Supply Chains Out of China

Sourcing-centric (Type B) and sales-centric (Type C) companies must first determine China's full potential for their businesses and whether the strategic and financial costs of making the shift to a dual-mode operation is justified. For most companies in global or regional industries, the answer is usually yes, with one caveat. Changes to what products are made and sold in various markets are frequently necessary; in the case of bulky products that cost a lot to ship, companies must stay aware of whether final assembly for China-produced products can be postponed until the product is close to its destination market. Kitchen cabinets, which can be flat-packed and shipped in containers, are a good example. Many kitchen cabinets today are manufactured in China, but assembled in Mexico or in the United States for the North American market. In general, however, our survey results suggest that manufacturers that operate at the right zone on the continuum between selling all products locally and exporting all products globally tend to show better average profitability, in this case 36 percent for GSCIs versus 21 percent for sourcing-centric companies and 6 percent for sales-centric companies.

The global integrators we have observed are, on average, larger than companies that are Type B and C models, given generally higher levels of management capabilities in understanding and exploiting the game-changing status of China. They also tend to have had the resources to act on the opportunity much earlier.

Over time, these companies have been in a better position than most new entrants to identify the real opportunities for dual-mode missions and to act on them. A recent addition to the growing list of GSCIs in China is Goodyear, which now produces some of its most advanced tires in China for the domestic and overseas markets while leveraging China as an increasingly important geography for exports. In an effort to accelerate growth in China, Goodyear has rapidly built a franchise network of aftermarket outlets selling tires and a range of other products and services related to aftermarket car repairs and

services. From fewer than 100 outlets a few years ago, Goodyear is projected to have approximately 1,000 franchises by the end of 2008. The large domestic network provides the local reach to exploit the full potential of the dual-mission setup Goodyear has now established (see "Goodyear as a Global Supply Chain Integrator", page 5).

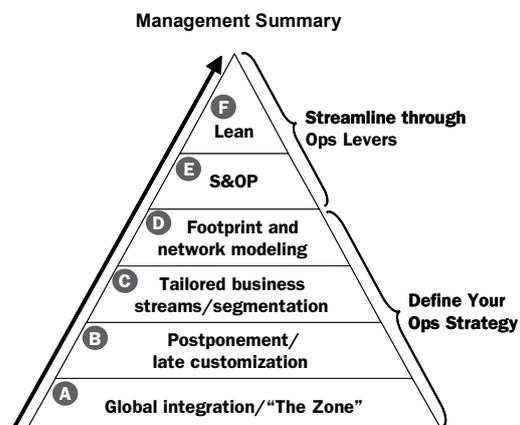
Portrait of a Global Supply Chain Integrator

For one European manufacturer of high-end consumer electronics, GN Netcom, the key remaining challenge to successfully becoming a global supply chain integrator was developing logistics capabilities to support global linkages into and out of China. The company had successfully established a plant in Shenzhen that was supporting three regional distribution centers (DCs) in Europe, the United States, and Asia. Furthermore, it had successfully established Tier One and Tier Two supplier bases in China, representing the vast majority of total sourcing spend. Finally, it had reached domestic sales volumes in China that represented an estimated one-third of global sales volumes.

The company had clearly established the mind-set necessary to become a GSCI, which is the first step in disseminating that approach throughout a

Exhibit 3

Booz Allen Hamilton Framework for Successful Global Supply Chain Integration



Source: Booz Allen Hamilton

Goodyear as a Global Supply Chain Integrator

Goodyear is a leading global tire manufacturer that has had a presence in China since 1994. Between 1995 and 2002, its global sales stagnated, with a compound annual growth rate (CAGR) of less than 1 percent. But since its massive reinvestment in Dalian, China, in 2002, the company has positioned China as both an important growth engine and a global supply base. From 2002 through 2006, Goodyear's global sales CAGR was marked by an impressive 10 percent growth. These global successes of Goodyear arguably began with its full leverage of value-creation opportunities in China and its understanding of the corresponding challenges that followed.

China, having surpassed Japan in 2006, has become the second-largest auto market in the world, and is on its way to challenging the United States' position as number one. Fully aware of the latent scale and dynamics of the auto market in China, Goodyear has designed its operations strategy to take full advantage of China's opportunities in both growth and sourcing. The initial focus for Goodyear in China was on supplying tires for new cars to vehicle manufacturers. As

the market began to shift, with more growth in the aftermarket, Goodyear rapidly built its presence from fewer than 100 aftermarket outlets to a franchise network of more than 1,000 outlets in an effort to capture surging demand.

Goodyear's awareness and proactive pursuit of the duality of China's opportunities has helped it outperform its key competitors both in market coverage and revenue. Within 10 months in 2005, Goodyear had established 300 outlets, whereas Michelin was only able to establish about 200 in two years. Average revenue per store had also increased by 30 percent from 2005 onward, as Goodyear recognized the increasingly globalizing customer needs, and upgraded its outlets strategically to offer full and tailored services. This was an effort to go beyond merely capturing sheer volume to creating additional revenue streams.

In addition to growing sales in China, Goodyear also leverages China as a sourcing base for both its local and global operations, because the labor and material cost arbitrages available in China often allow companies to establish the required cost competitiveness to dominate not only the local but also the global market. The success of this strategy is reflected by Goodyear's US\$35 million annual cost savings as well as other top-line gains obtained through sourcing raw material, equipment, and finished goods from China.

How Goodyear Overcame the Challenges of Becoming a Global Supply Chain Integrator

Becoming a global supply chain integrator is about much more than merely sourcing from China and selling in China. Beyond the challenges of logistics and supply chain management common for most aspiring GSCIs, the ability to overcome challenges in product quality and management processes is critical to how successful a company can be. Goodyear's key differentiator from many other companies that source and sell in China is its demonstrated capability to manage these challenges.

Quality has been an issue for companies sourcing and exporting from China, as many Chinese suppliers still do not consistently adhere to agreed standards. Goodyear's answer to this challenge is to build lasting partnerships with its suppliers, and sometimes suppliers of suppliers, to help them reach its standards. Thanks to these measures, Goodyear's Dalian facility is now capable of producing high-end and high-value tires that receive Goodyear's highest rating in quality audits for global markets.

The same logic applies to the challenge of management process in China. According to our survey, far less than 50 percent of the respondents have applied manufacturing best practices. Unlike a local

company operating only within a small region, a global supply chain integrator operates worldwide and requires sophisticated manufacturing processes to make the fully integrated supply chain reliable and flexible. In this respect, Goodyear again leverages its network of partnerships, strictly enforcing process control and process auditing in its operations and those of its suppliers. This effort has resulted in the company's China operations receiving the highest process quality rating across all Goodyear facilities worldwide.

This complexity of managing global supply networks is tied inevitably to the challenge most difficult for many aspiring global supply chain integrators: logistics capabilities. Supply networks that crisscross the entire globe are often not easy to manage, given their scope and interdependency. The situation is exacerbated in China due to its distance from many major markets, its relatively inadequate infrastructure, and its delivery unreliability. Goodyear recognized the importance of these issues and attempted to battle them using flatter, more integrated channels and considering alternative means of transportation (e.g., railway vs. trucks) to reduce lead times and costs. This approach resonates well with our experience in rectifying the logistics malfunction found in many companies in China.

company's operations and a basis for future decisions (see Exhibit 3). However, although the company had become a role model in establishing dual-mode operations, it had not yet redesigned its logistics and supply chain operations to support the dual-operating mode. This resulted in major logistics and supply chain problems: Overall lead times were up to 22 weeks, which was a major problem in an industry with an average product life cycle of 45 weeks. The company had high inventory levels, with yearly inventory turns below 10; it also had frequent out-of-stocks and high obsolescence costs. Lastly, it had very high transportation costs, due to the need to use air transport for boxed shipments as well as many expedited air shipments in order to meet lead-time requirements.

All in all, this company achieved world-class unit production costs by buying and selling in China, but had below-average performance on landed costs due to a poorly designed and managed China supply chain. Effectively, this company was flying "boxed air" around the globe, and all it got from these high transportation costs were frequent out-of-stocks and lead times of 22 weeks. What went wrong?

An analysis of the logistics malfunction revealed three root causes, which, based on our experience,

are fairly representative of a wide range of GSCIs operating in China:

One-size-fits-all. The overall supply chain setup, as well as the logistics systems, lacked segmentation around planning for varying predictability and stability of products—resulting in supply chains that were over- or under-engineered for the majority of products. As a rule of thumb, one-size-fits-all, "mixed-mission" supply chains, which are focused on optimizing different objectives across cost, quality, and time, are typically very costly and notoriously difficult to run.

Coupled operations. Analyzing the overall value chain—including the three regional DCs, the Shenzhen plant, and the Tier One and Tier Two suppliers—revealed extensive interdependencies for both information and the materials flows. This was being caused by a lack of break points or "decoupling points," such that any material requirements in the distribution centers required planning actions along the entire supply chain. Due to the boxed shipments, SKUs were defined at a very early stage in production and packaging, thereby taking away any supply chain flexibility in the distribution centers. As a result, the entire supply chain required extensive upfront operations scheduling as well as long execution and delivery times.

Underdeveloped sales and operations planning (S&OP) systems.

An analysis of the overall S&OP setup revealed planning systems that were mainly based on push-to-forecast principles—i.e., the expected demand triggered production of finished goods, semi-finished goods, and even Tier One and Tier Two components. The result was highly inflexible planning processes, which were difficult to control in the actual execution and delivery phases of the supply chain. The company either couldn't support short-term campaigns by major customers, resulting in significant lost sales, or these campaigns could only be fulfilled through costly ad-hoc rescheduling.

All in all, this situation represented a common logistics malfunction of a global supply chain that was not fully integrated.

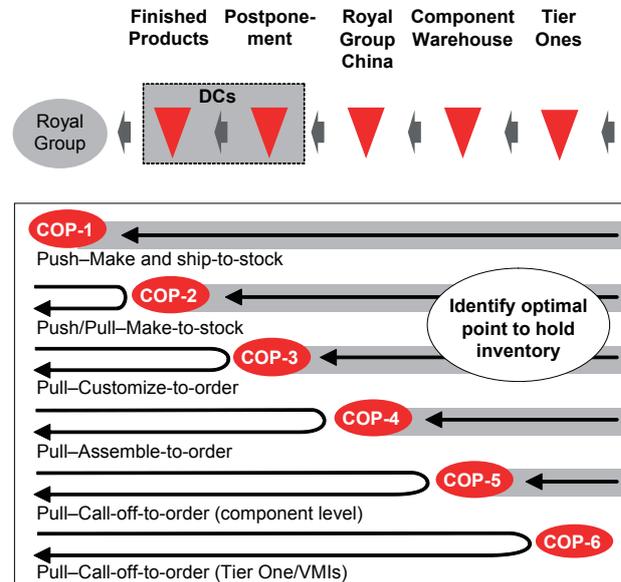
The team fixing this supply chain followed three clearly defined steps to turn the production system of an aspiring GSCI into a world-class global logistics network.

Step 1: Decouple and postpone. GN Netcom's first step was to focus on shifting the so-called cross-over points (COPs) backward. Cross-over points in the value chain are those points where non-customer-specific parts or sub-assemblies are assigned to a specific customer or an order. The objective is to push those cross-over points as far as possible toward the beginning of the value chain; the farther back in the supply chain the inventory can be stored, the lower the inventory carrying cost. Having COP far back in the chain also implies a switch from pushing to forecast toward pulling to real demand (see Exhibit 4).

The main lever for achieving those decoupled cross-over points was late-stage customization—i.e., shifting product-, country-, or customer-related specifications to the end of the supply chain. When customization takes place later in the chain, companies have a higher degree of flexibility to cope with changing market demands and a lower risk of obsolescence.

Exhibit 4

Decoupling and Postponement at GN Netcom



DC = Distribution Center

COP = Cross-over point, where the pull chain and the push chain meet

Source: Booz Allen Hamilton

A key approach for achieving late-stage customization and creating highly flexible supply chains is postponement—i.e., delaying the complete production or assembly of an end product for a different geography and a later time.

There were multiple and immediate benefits to applying postponement strategies:

- More responsive supply chain and improved customer service levels, as the practical lead times to customers were shorter than in the case of true one-off orders
- Massively reduced transportation costs due to the ability to create bulk shipments instead of boxed shipments
- Decreased risk of stock-outs given shorter practical lead time
- Lower inventory levels due to safety stock pooling
- Stabilized upstream supply chain due to mellowed demand-signal variations

- Transformation of some difficult “repeater” SKUs to easier-to-manage “runners,” based on the ability of postponement to reduce practical lead times
- Installation of independent vendor-managed inventories (VMIs) along plants (managed by Tier One suppliers) but also on suppliers’ sites (managed by Tier Two suppliers), thereby significantly reducing time to customer in the “last mile.”

Step 2: Establish tailored business streams (TBSs) using segmentation and differentiation across SKUs.

The initial step for GN Netcom in establishing tailored business streams was to properly segment the end products based on differences in their inherent variability, predictability, and annual volumes. We characterized these segments as “runners,” for SKUs with highly predictable and recurring demand; “repeaters,” for SKUs with frequent, but not necessarily stable, demand; and “strangers,” for one-off SKUs whose recurrent demand was low or nonexistent and whose future demand was therefore difficult or impossible to model.

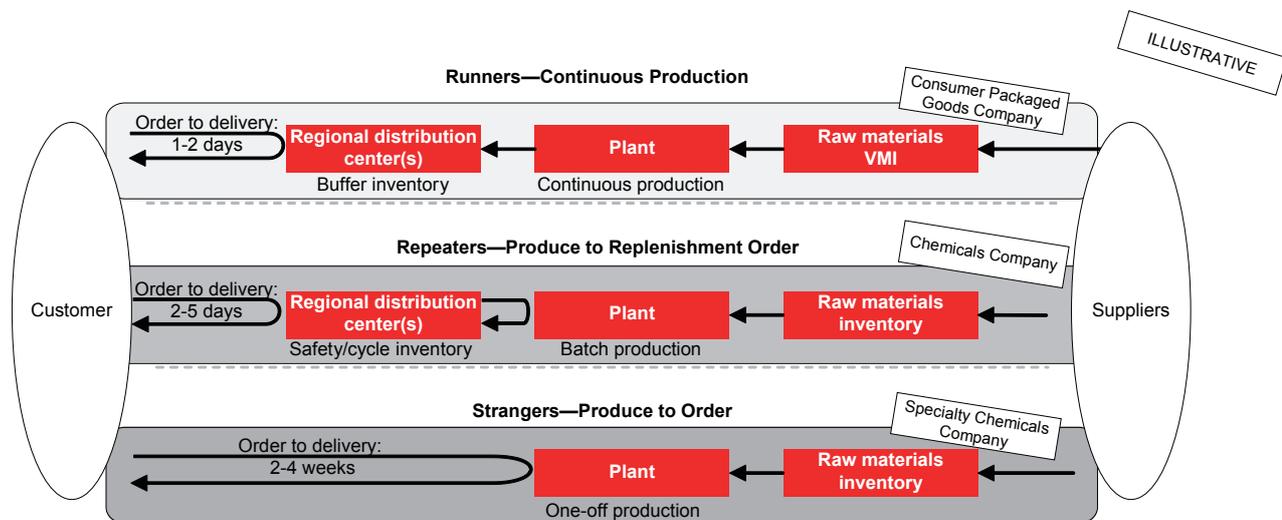
After identifying the relevant clusters, the company needed to design differentiated supply chains, optimized by segment, both for manufacturing design

and logistics systems. For example, runner supply chains, with continuous production cycles and steady demand, were based on planning, ordering, and scheduling routines. The repeater supply chains were based on flexible batch production and consumption-based planning, with ordering and scheduling routines within a defined frozen period. Finally, stranger supply chains were built around a produce-to-order, one-off approach (see Exhibit 5).

The logistics system to support these different supply chains was also developed by segmenting different needs across different logistics, procedures, and processes. The key factors considered were differences in the following (see Exhibit 6, page 7):

- Assembly characteristics
- Inventory replenishment
- Material capacity planning
- Scheduling and sequencing
- Orders/call-offs (in the case of kanban—signal cards that are used as part of a system of continuous supply of components, parts, and supplies).

Exhibit 5
An Example of Tailored Business Streams



Source: Booz Allen Hamilton

Exhibit 6

Operational Implications of Tailored Business Streams

Product Category	Runners	Repeaters	Strangers	
Production Characteristics	<ul style="list-style-type: none"> Continuous production 	<ul style="list-style-type: none"> Batch production 	<ul style="list-style-type: none"> One-off production 	<ul style="list-style-type: none"> Lifetime batch production
Inventory/ Replenishment Characteristics	<ul style="list-style-type: none"> Safety/cycle stock Call-off point Possibly kanban controlled 	<ul style="list-style-type: none"> Safety/cycle stock Reorder point Possibly min/max controlled 	<ul style="list-style-type: none"> No stocks 	<ul style="list-style-type: none"> Lifetime stocking in the hubs
Material & Capacity Planning	<ul style="list-style-type: none"> Lead time is determined by the maximum given by tooling, capacity, and material 	<ul style="list-style-type: none"> Nonbinding four-week forecast with frequent changes on SKU mix 	<ul style="list-style-type: none"> No planning 	<ul style="list-style-type: none"> One-off plans
Scheduling & Sequencing	<ul style="list-style-type: none"> Three-month capacity booking One-month frozen time period One-week sequencing on SKU level 	<ul style="list-style-type: none"> Two-month capacity booking 	<ul style="list-style-type: none"> Based on order Up to 12 weeks' delivery time 	<ul style="list-style-type: none"> One-off schedules
Orders/Call-Offs	<ul style="list-style-type: none"> Call-offs out of hubs (decentralized) 	<ul style="list-style-type: none"> Bundled orders 	<ul style="list-style-type: none"> Dedicated sales order 	

Sources: China Manufacturing Competitiveness 2007-2008; Booz Allen Hamilton

For repeaters, the focus is on bundling orders into logical batch sizes. Switching over in the runner segment to consumption-based planning, scheduling, and manufacturing systems usually generates both supply chain stability and improved logistics costs. Finally, strangers, which are one-off production orders, should be planned where they can be fit into production planning with minimal disruptions for runners and repeaters.

Step 3: Fully integrate the global distribution network.

Finally, the company remodeled the global distribution network, including regional postponement and pack-out facilities, where the piece-parts of full orders were assembled. This reflected the decoupled and segmented supply chains implemented in Steps 1 and 2. This process included evaluating alternative bulk vs. boxed cross-over points, which define at what stage of the supply chain to keep inventory, as well as modeling different assembly and packaging operations in the regional DCs, such as doing final assembly and quality testing in DCs, as opposed to in production plants. Applying a heuristic approach, the company calculated basic distribution network scenarios and then locally optimized the costs of inventory versus lead times. In this specific case, a network design incorporating one plant, one hub, and global postponement proved to be superior as it

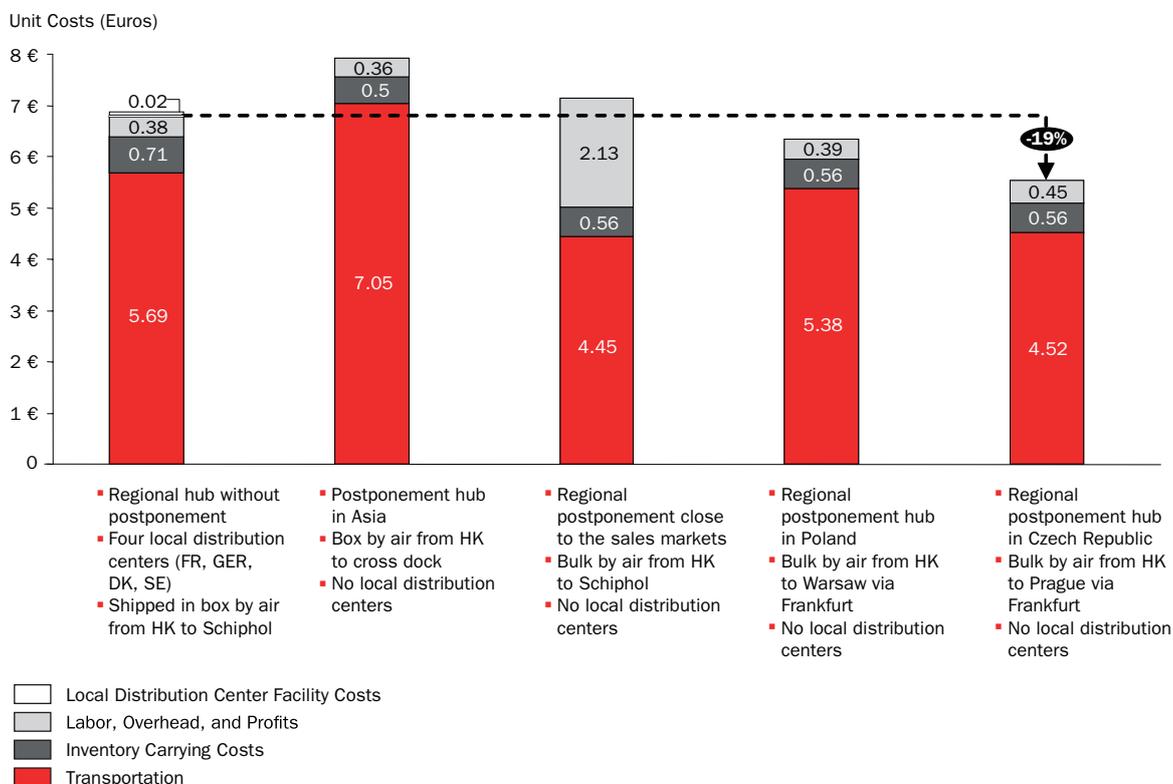
provided the best balance across lead times and cost to serves.

Conclusion

Even companies that have successfully integrated their sales and sourcing operations still have challenges ahead of them. A very common challenge is building sufficient scale for effective global supply chain integration. Wanxiang, the number one auto parts manufacturer in China, has pursued multiple means to maximize its scale and therefore cost advantages to compete globally. When it enters a new market, Wanxiang begins by actively leveraging third-party distribution to broaden its reach within the shortest possible time. External partnerships are collaborative and focused on acquiring the talent and technology that are conducive to scale efficiency and volume enhancement. These combined efforts have been instrumental to Wanxiang's impressive sales growth of more than 30 percent since 1999.

But for most companies, there are often three other main areas in which they can best leverage their China positions as global supply chain integrators: logistics systems, network design, and end-to-end supply chain management. The need for improvement in these areas is highlighted by the fact that extended supply chains into and out of China often stretch the capabilities of existing logistics operations and can

Exhibit 7 Cost-to-Serve Network Modeling



Note: Data slightly modified from original to preserve confidentiality.
Sources: China Manufacturing Competitiveness 2007-2008; Booz Allen Hamilton

even reveal the structural weaknesses in the home country's logistics. Indeed, the average scores for domestic and international logistics infrastructure in China are only 2.5 and 2.7, respectively, out of 5.0, based on the comments of our survey respondents. Further, many global supply chain integrators have yet to design lean, highly flexible logistics systems across the value chain such that the network is optimized. Many GSCIs recognize the opportunities inherent in a dual-mode approach, but have not yet developed well-planned logistics networks or the integrated supply chains that deliver on their potential. For example, only 16 percent of survey respondents report that they have applied postponement and segmentation methodologies to their logistics systems.

Building truly integrated supply chains and harnessing the full potential of China is not easy (see Exhibit 8, page 10). Although all companies don't necessarily need to become global supply chain integrators, especially in industries that are not global or regional

in scope or those in which products and supporting process capabilities and assets are highly specific to each market, in our experience, the benefits to successfully becoming one can be substantial and well worth the effort.

Exhibit 8

Practical Steps Toward Becoming A Global Supply Chain Integrator

Key Steps to Success	
1 Establish global supply chain integration mindset	<ul style="list-style-type: none"> Approach emerging markets from the outset with idea that ultimately, the greatest value-creation potential comes from full global integration of your full value chain over time
2 Assess total value creation potential	<ul style="list-style-type: none"> Assess the total potential value impact across all business and functional areas, e.g., including the future value of intangibles stemming from market presence Identify potential new sources of competitive advantage that can be developed in the emerging markets (e.g., new innovations, sources of talent, centers of excellence across functions) Take a team with broad functional representation on road show of emerging market; seeing is believing
3 Get broad stakeholder involvement	<ul style="list-style-type: none"> Ensure all key stakeholders inside and outside of your company boundaries are informed and aware of emerging market activities, and engaged in exploring the potential of the market across the value chain Set up an emerging markets senior steering committee to sustain broad involvement over time
4 Approach network and supply chain top-down	<ul style="list-style-type: none"> Design operations and supply chain activities from the perspective of global supply chain integration; only then, suboptimize for other functional objectives Designate shared, cross-functional teams for supply chain ownership (not just supply chain staff!)
5 Align resources and efforts	<ul style="list-style-type: none"> Ensure key resources across company are focused on the same end game and supporting near-term objectives; align incentive systems accordingly
6 Continuously upgrade and improve	<ul style="list-style-type: none"> Continuously adapt approach to the market as the market evolves and as your company grows in size and in resources Exploit new opportunities continuously

Sources: China Manufacturing Competitiveness 2007-2008; Booz Allen Hamilton

Also contributing to this article were Ken Zhong and Raymond Yeung and Ashish Ranjan.

Dr. Christoph Alexander Bliss passed away prior to the final publication of this article. Booz & Company recognizes with gratitude his numerous and significant contributions to the advancement of the topics of operations strategy and globalization.

BOOZ & COMPANY WORLDWIDE OFFICES

Asia

Beijing
Hong Kong
Seoul
Shanghai
Taipei
Tokyo

Australia, New Zealand, and Southeast Asia

Adelaide
Auckland
Bangkok
Brisbane
Canberra
Jakarta
Kuala Lumpur
Melbourne
Sydney

Europe

Amsterdam
Berlin
Copenhagen
Dublin
Düsseldorf
Frankfurt
Helsinki
London
Madrid
Milan
Moscow
Munich
Oslo
Paris
Rome
Stockholm
Stuttgart
Vienna
Warsaw
Zurich

Middle East

Abu Dhabi
Beirut
Cairo
Dubai
Riyadh

North America

Atlanta
Chicago
Cleveland
Dallas
Detroit
Florham Park
Houston
Los Angeles
McLean
Mexico City
New York City
Parsippany
San Francisco

South America

Buenos Aires
Rio de Janeiro
Santiago
São Paulo