Localizing Sourcing Volumes in China: Insights from the Automotive Industry

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Executive Summary
For almost a decade, China has been known for enormously promising growth figures as well as cheap and seemingly endless labor resources. One of the key industries involved in the tremendous market has been the automotive industry. Due to lower logistics and factor input costs, nearly all international car manufacturers have decided to invest in the People’s Republic and to serve the emerging market from local production sites. Operational efficiency, as well as governmental regulation, however, forces manufacturers to search for China-based component suppliers. The OEM has to decide: develop completely new Sino suppliers or defer to multinational companies? Developing the optimal supply base has become a strategic issue, especially since high quality requires partnership-oriented sourcing structures. This PRACTIX report describes how an international car manufacturer has successfully developed a local supply base by convincing its established partners to accompany its internationalization.

Background: International High-Quality Brand
AEC — “Automotive Excellence Company” — has been successfully producing high-quality passenger cars (mainly sedans) since early in the 20th century. AEC’s current sourcing characteristics are the result of almost nine decades of industry development; ever-increasing product complexity, product variety, and moreover, continuously shortening time-to-market pressure have led to the outstanding importance of suppliers in the automotive value chain.
Increasing R&D intensity has raised fixed costs and thus made AEC concentrate on its core competency: developing the overall car concept, assembling the end product, and managing the brands. The result has been that only 28 percent of total value was created directly by AEC in 2004. AEC, as well as other OEMs and higher-tier suppliers, are becoming closely intertwined — a trend that has become typical for the entire automotive sector.

Defining the Overall Sourcing Strategy: The Dilemma of Cost and Quality

Automotive sourcing strategies, and therefore the approach of an OEM to its supply base, vary according to the OEM brand strategy. The decision to focus on cost or on quality, still one of the most important strategic questions, in practice usually comes in line with a more collaborative and “developing-the-supplier” approach by the quality-focused OEM. Respectively, in the cost-focused OEM’s supplier-selection process “squeezing out the supplier” will be more typical.

In this case, AEC has established a worldwide high-quality brand that demands, from its own organization as well as from its supply base, the utmost dedication to quality. Reflecting the current trend of outsourcing anything but core competencies, AEC over the years increased its sourcing scope to not only parts, but to whole systems coming from suppliers.

Market Entry in China: Factor Input Cost Savings and Governmental Regulation

At the beginning of the 21st century, AEC — as well as other OEMs — decided to enter the Chinese market in order to serve the growing sales potential from a Chinese production site. Starting with small volume, annual capacity will soon have reached its maximum at several tens of thousands of vehicles. Why has AEC set up local production? Two reasons have been identified: costs and taxes.

First, organizations such as AEC can considerably increase their operational efficiency by entering local sourcing markets such as China: profits increase from cost savings from lower factor input costs, especially labor cost. Logistics costs — as well as bound working capital — are reduced by shortening supply distance and lead time. Having local suppliers increases operational flexibility and thus creates optional value. Later on, upon successful development of a local supply base in the respective sourcing region, home supply base costs could even be reduced by imposing competitive pressure on established home suppliers. These decisions however, have to be aligned with the overall sourcing strategy.

As for the second reason, the Chinese automotive market is currently protected by an 80 percent tax on vehicles imported from abroad or produced in China with less than 40 percent local added value. (In spite of the WTO accession, import taxes will remain at 25 percent after July 2006.) This tax burden raises market prices in China and reduces the competitive cost pressure on OEMs producing locally. Once a manufacturer exceeds 40 percent local content and is released from the import tax, it can significantly undercut prices of international competitors and still realize high sales margins. As a result, companies manufacturing in China are in search of China-based suppliers, i.e., fully-Sino companies (with 100 percent Chinese ownership) as well as multinational joint ventures.

How can international OEMs reach or even exceed the 40 percent requirement, especially taking into account China’s WTO accession and its impact on import tax development? The establishment of a local supply base can be segmented into two phases:

1. International suppliers set up local production sites.
2. Fully-Sino suppliers are identified.

Figure 1 shows how the OEM’s interaction with local suppliers increases over time.
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First Phase: International Suppliers Set Up Local Production Sites
Since the beginning, AEC’s purchasing staff has not sought completely new suppliers in China, because all affected components would then have had to be re-checked for safety and functionality — a costly and time-consuming process. Being a high-quality manufacturer relying on a partnership-oriented sourcing strategy, AEC hesitated to approach local suppliers in order not to displease its established home supplier relationships.

Instead, in order to streamline the supply chain and to reduce lead times, AEC has decided to convince its international suppliers to establish facilities in China. Suppliers might first shift selected elements of their value chain to China e.g., to establish an assembly shop close to AEC’s site. In particular, technically simple but large components with a high share of human labor can provide significant cost and time savings when assembled in regional proximity. On the one hand, going to China and setting up component production facilities requires significant financial investment from the supplier side, which some might not be able or willing to make. In many cases, small production volumes do not justify high OEM-specific commitment. On the other hand, the supplier’s market entry in China is facilitated by the presence of a well-known and dependent customer. In some cases, the OEM might even agree to support its supplier financially — for instance, by financing the necessary machinery park in China. From the perspective of the supplier, this is a sign of long-term commitment and might increase the attractiveness of entering the local Chinese market.

Nevertheless, this practice does not guarantee all of the potential benefits. Some first-tier suppliers only move minor shares of their value chain to China and import semi-finished components from their international facilities. Thus, the cost-saving potential is not completely exploited. “Truly local sourcing” would imply building up a major share of the supply chain
in China in order to benefit from logistics and factor input cost savings as well as the lead-time reduction. In this case, the local supply chain would include a broad portfolio of Chinese and international suppliers (first-, second-, and third-tier) of which some would have to set up separate R&D departments for the Chinese market. In fact, Chinese component suppliers have a desire to deliver to international brands because well-known customers could lead to a reputation enhancement, spillover effects, and image improvement for Chinese suppliers.

**Second Phase: Fully-Sino Suppliers Are Identified**

In the long run, AEC may decide to include selected Chinese suppliers into its international supply chain. In this case, suppliers in China would not only deliver to the Chinese-based factory but to AEC facilities all over the world.

Obviously, such a degree of supplier integration into the global supply chain goes beyond assembly and delivery. R&D, as well as simultaneous engineering, is a must for high-quality suppliers. Quality and logistics processes must be much more sophisticated in order to feed a worldwide production network on time. It remains to be seen whether many fully-Sino suppliers can keep up with established international competitors in these disciplines. The respective timeframe is highly dependent on the specific-supplier requirements, as well as on the effort raised by AEC to bring up potential suppliers in China. It can take five or even 10 years to make a Chinese supplier an appropriate partner.

From the OEM perspective, introducing Chinese suppliers would impose competitive pressure on established suppliers that may not be in line with the overall strategy of quality focus and co-operative supplier partnerships. Local sourcing may then not be reasonable, especially in case of a small-volume market entry offering only limited economies of scale.

**Choosing Components for Local Sourcing**

Once AEC had decided to transfer 40 percent sourcing volume to China-based suppliers (i.e., local production sites of established international suppliers), appropriate components have to be selected. This choice is determined by several criteria.

A component’s complexity determines the related R&D investments, production set-up costs, and the necessary second-tier effort. Thus, component’s complexity correlates with possible mass production scale effects. The more standardized a component, the higher the chance to find a supplier already having established production sites in China. As a result, highly complex and individually designed parts are less attractive for local production in smaller volumes. On the other hand, particularly complex products of high financial value can create a significant share of local content.

In order to meet the 40 percent local content requirement with the fewest suppliers possible, components with a high financial share of the end product are currently preferable for local sourcing. Seats, trim panels, and exhaust systems have proven to be a good start. These components are put together manually from several subcomponents and, once assembled, can be large, heavy, and/or highly damageable. In this case, significant cost savings can be reaped by shifting the assembly step to China and thus shortening supply distance. In this case, subcomponents are imported from established second-tier suppliers outside China.

**Sourcing Risk in China: Shortages and Plagiarism**

As shown so far, local sourcing can significantly increase one’s operational flexibility and has a large theoretical cost-saving potential. Nevertheless, many foreign manufacturers hesitate to replace their established suppliers with Chinese suppliers. It has proven to be difficult for newcomers to assess the risk of depending on a Chinese supplier. What factors make it risky to use Chinese suppliers?
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Shortages of key components are a threat to the continuous production flow. In particular, companies sourcing just-in-time require reliable suppliers. Drawing on international suppliers once a local supplier has dropped out is costly and time-consuming. Shipments from Europe to China still take three weeks, and short-term air-freight is expensive. It is difficult for international OEMs to assess the service level of a Chinese partner in advance. A potential supplier’s ownership structures as well as its track record are often blurred.

In practice, the cost of purchased goods in China can even be higher than in traditional markets due to lower volumes (i.e., lower mass production scale effects) and inefficient production (due to lower labor experience, less infrastructure, higher communication costs, and second-class machinery or processes). In order to profit from lower local factor input costs, suppliers would presumably increase the proportion of human labor in their production but at the same time increase the importance of skilled labor. The importance of infrastructure should also not be underestimated in this context since transport within China can be time-consuming and the location of the OEM site usually is crucial for a smooth production flow.

When dealing with China, OEMs also fear plagiarism and the transfer of intellectual property to Chinese competitors. Specific know-how of international manufacturers (which they inevitably have to share with their suppliers) may be transferred to competing Chinese OEMs. In particular, automotive manufacturers fear Chinese car parts flooding the international spare parts markets at low prices. Indeed, spare parts are currently sold at significantly higher margins than the car itself and are a fundamental source of earnings for high-quality OEMs. Although a breach of contract may be prosecuted as in any other country, foreign companies often succumb in practice. Critical parts therefore have to be identified and excluded from local sourcing activities, or they must be produced in cooperation with selected trustworthy international suppliers running production sites in China. Precisely, critical parts are distinguished by the following:

1. High value of intellectual property, i.e., the attractiveness of a component for a competitor and potential earnings from spare parts markets,
2. Technical ease of copying (“copyability”), i.e., the easiness of imitation and production as well as sale into international spare parts markets.

Figure 3 presents intellectual property sensitivity and technical ease of copying in a matrix. For instance, external mirrors, headlights, and rims may be ranked as critical. These parts are regularly sold as spare parts and need to be protected against clandestine imitations.

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### COMPONENT LOCALIZATION

Three Criteria for Locally Sourced Components:

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<tr>
<th>Criteria</th>
<th>Description</th>
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<tr>
<td><strong>1. Size / Weight</strong></td>
<td>Big, heavy, and transport-sensitive components offer reduced transportation costs.</td>
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<tr>
<td><strong>2. Value</strong></td>
<td>Expensive components support local content achievement and offer cost of capital savings.</td>
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<tr>
<td><strong>3. Variety</strong></td>
<td>Components with a broad choice of varieties favor local production for lead-time reasons.</td>
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![Seats have been identified as ideal: Big, sensitive, and expensive but not too complex for local production](image)
China’s Future: Strategic Issues Displace Technical Ones

When setting up production in China, OEMs, especially those situated on a lower-quality requirement level, will tend to look for local suppliers. First, they are exposed to lower quality pressure. Secondly, production volume will be considerably higher, such that mass production scale effects can be realized. For quality-oriented brands, it may be wiser to concentrate on home suppliers having established facilities in China already or motivate them to enter the market. By this approach, operations can be set up quickly and professionally — the food will be at the market door. Then, while operations are running smoothly, enlarging the supply base to “truly local” suppliers can become an issue.

For the future, China’s expectations are quite positive. Experts forecast the annual production volume to be 10 million cars in 2010. OEMs financed with foreign direct investments will not only cover a significant share of this production volume but also attract international component suppliers and stimulate the technological advancement of local ones.

Additionally, Chinese manufacturers are becoming more and more professional by entering the low-cost segment of international markets. They will enhance the development of local component suppliers.

Technically, one can source almost anything from China. From an economic point of view, the initial investment becomes satisfied once it reaches a certain production volume. However, it may not conform to one’s sourcing strategy to scare off established suppliers with a Chinese supplier covering the local volume in the Chinese market. Furthermore, raising a Chinese supplier to international quality standards can be time-consuming — and possibly even dangerous: If Chinese suppliers have the capability to build products of high quality, the protection of intellectual property may be of paramount importance to foreign OEMs. China’s technological advancement might then turn out to be a threat. Another possible view would be that China’s “catching up” in terms of technological capabilities is inevitable anyway, and thus exploiting its factor input cost advantages should be pushed forward more vehemently.
SUMMARY
Golden Rules of Successful Supply Base Establishment

1. Pick the right components in terms of risk and cost-savings potential.

2. Apply a phased approach when entering the Chinese supply market.

3. Support established suppliers in their internationalization.

4. Increase truly local sourcing from Chinese suppliers over time to achieve full benefit from factor input cost advantages.

5. Pick and support the right Chinese suppliers, i.e., suppliers with a credible potential of development and improvement.

6. Openly and timely communicate China strategy to established suppliers to allow time to get ready for the Chinese challenge.