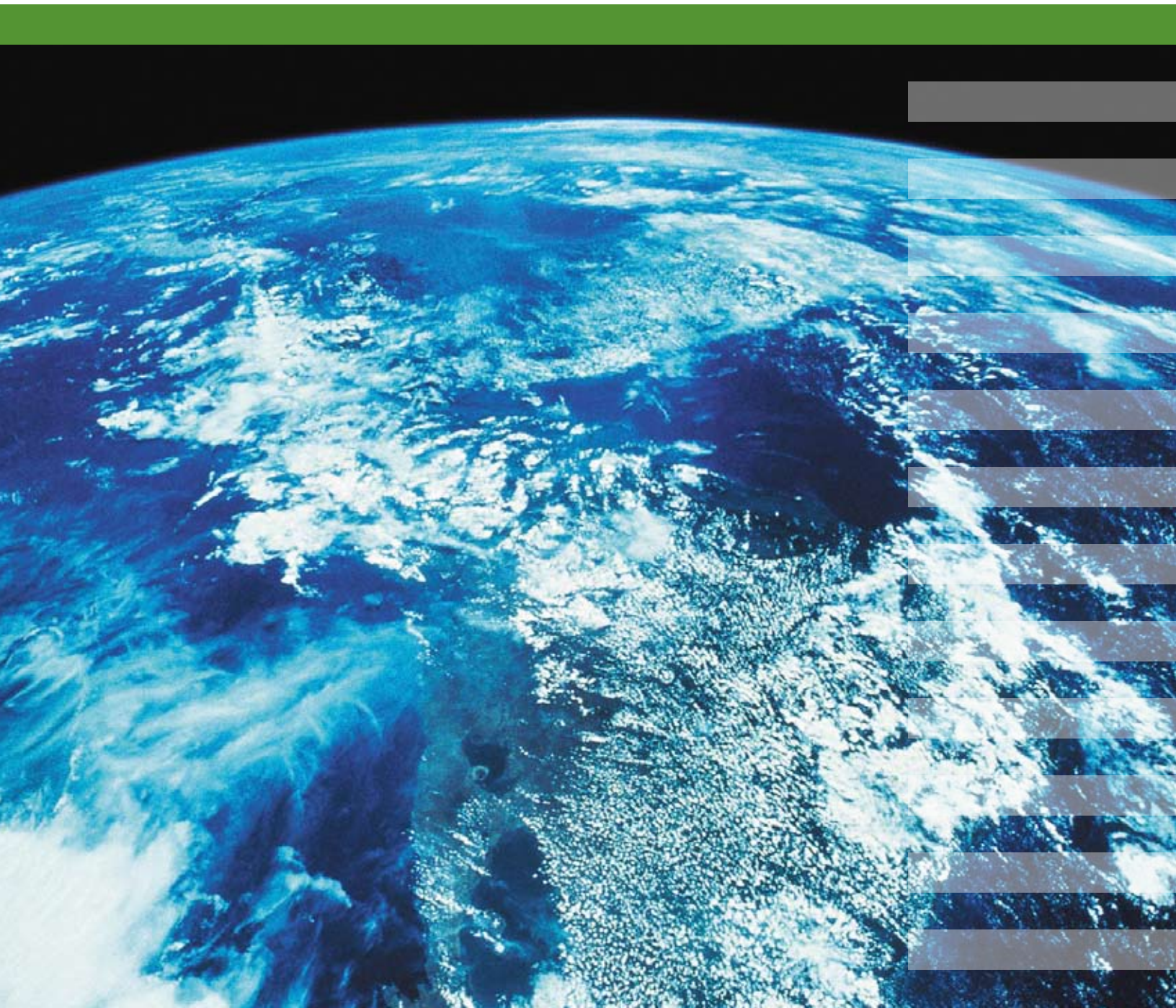


Transforming global logistics for strategic advantage in emerging markets

June 2006

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Supply Chain
Management



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Executive summary

Given the expanding complexities of global operations, information about logistics costs and capabilities is crucial to evaluating whether and how to leverage emerging markets as a means for increasing profit margin. Globally, there has been a trend to source from or manufacture in low-cost jurisdictions and emerging markets. This trend, however, is often offset by increased logistics costs and delivery times, along with a growing number of complexities that need to be managed. Senior management has begun to realize that lowering unit procurement costs does not translate directly to lower per-unit total landed costs – the total costs associated with importing goods or parts from distant emerging market locations.

The complexities of managing logistics in emerging market locations ultimately add to the total landed costs of the associated goods. Therefore, the process of redesigning supply chain operations to establish logistics management capabilities in emerging markets is a fundamental dimension of a long-term business strategy. Components of this strategy should include a focus on end-to-end integrated operations design and sound process discipline. Further, this focus should include a means to achieve flexibility, responsiveness and resiliency to enable more effective competition in today’s environment of increasingly dynamic global business conditions.

To leverage opportunities in emerging markets, companies must transition or expand from managing logistics in a limited number of local geographies to managing them in emerging market geographies worldwide – in a very efficient, agile manner that supports the responsiveness and flexibility associated with an On Demand Business.

Companies can leverage specific approaches to transforming their global logistics capabilities and better support the business goals of lower cost sourcing or fulfillment by taking advantage of emerging market jurisdictions. IBM’s own experience in transforming its logistics operations offers some insight into the performance benefits gained from a strategic focus on logistics. The capabilities developed during our own transformation effort now enable us to realize benefits associated with emerging market operations.

Highlights

- *Companies are rarely able to staff logistics resources fast enough to support ramp up in emerging markets*
- *Effective logistics strategies are integrated across the entire supply chain*

Global supply chain management — a rapidly changing environment

Because of competitive pressures in the global marketplace, companies are rapidly migrating to low-cost sources of labor and materials, which are typically located in countries that also represent emerging market opportunities. But the speed of this change may bring challenges associated with escalating shipping costs and increased supply chain risk, and these challenges could exceed a company's internal skill and resource capacity.

If you are adopting global sourcing practices, you may not yet have the foreign trade experience necessary to manage regulatory compliance and related global supply chain management complexities. For example, multiple, autonomous business units within an organization can contribute to a fragmented logistics process as well as create missed opportunities for leveraging economies-of-scale. Individual business units may also lack the necessary economies-of-scale needed to establish a competitive foothold and gain sufficient influence in emerging markets.

Balancing inbound and outbound supply chain logistics requires a comprehensive strategy that incorporates all the key functions of a supply chain to accelerate or expand sourcing from emerging markets. This horizontally integrated approach also helps you make strategic decisions regarding partnerships, shipping and other factors, to help ensure that savings from global sourcing are not eroded by increased logistics costs. Even more significantly, such a strategy can enable you to go beyond sourcing to position your organization to leverage your logistics capabilities to sell and distribute products within those emerging markets.

Challenges to leveraging emerging markets in supply chain cost management

As you expand your geographic reach of global sourcing into emerging markets, you will likely encounter a growing number of supply chain and logistics challenges, many of which directly or indirectly contribute to a large portion of total landed costs. Each issue can be grouped into one of two categories: tangible or intangible.

Highlights

- ***Physical infrastructure limitations create bottlenecks to the free flow of goods***
- ***Longer shipment cycle times directly contribute to higher cost***

Tangible challenges of working in emerging markets include obvious things such as the limited physical infrastructure of roads, bridges, harbors and airports. Other limiting items include the communications infrastructure needed to support the necessary IT connectivity. As constraints due to infrastructure bottlenecks represent a clear challenge, government agencies are more aptly able to focus on these items because the benefit for improvement extends beyond just the business sector. Enhancements to physical infrastructure help the greater population of the emerging marketplace and contribute to modernizing an entire region or industry.

Physical infrastructure improvements tend to have greater visibility and political momentum, and often involve just a few government agencies. For example, the current infrastructure expansion in China as described by EFT Research in late 2005:¹

- Between 2005 and 2008, more than US\$70 billion per annum will be spent to create 75,000 new miles of expressways
- Forty-three airports have been added since 2001, a major focus for expansion
- By 2010, China plans to double the number of shipping port berths from the 34,000 currently in use and will spend approximately US\$6 billion each year to do so
- Between 2005 and 2020, China will build 25,000 km of new rail lines at a cost of US\$250 billion.

The net effects of current infrastructure limitations in China and other emerging markets are longer-than-expected lead times and greater variability in shipment cycle times. These factors have a direct impact on owned inventory levels and the overall cash-to-cash cycle time – both of which drive the need to tie up more working capital in the supply chain. These shipment cycle time delays, which can be typical, are often offset by shifting to expedited, or premium freight service levels. However, these shifts to faster service levels are what significantly erode the expected savings in procurement and sourcing.

Highlights

- ***Numerous “hidden” logistics costs can quickly erode procurement savings***
- ***Strong supplier relationships and in-country operating experience greatly mitigate business risk***

While tangible infrastructure and expansion challenges within emerging markets often get the most press and visibility, it is the intangible items that create the greatest headaches for global logistics managers. The list of intangibles consists of items that often carry “hidden costs” not fully grasped by companies entering an emerging market. Included are all the tariffs, duties, taxes, customs declarations processes, security and compliance requirements, and the daunting task of dealing with government agencies and multiple third parties in a foreign language. The complexity is exacerbated by variables that can constantly change and remain in a near-fluid state.

Managing day-to-day events is complicated by the need to factor in multiple working locations, distant time zones, multiple handoffs of products and associated information, different national holidays, language and cultural barriers, and the ongoing regulatory changes. For example, effective January 1, 2006, the Ministry of Commerce of China updated numerous regulations for export-processing zones, while at the same time Chinese customs issued new regulations for bonded logistics parks that support export-related handling activities.

Understanding how such changes impact your supply chain requires in-country operating experience and deep collaborative relationships with logistics services providers who manage daily in this dynamic environment.

Not to be overlooked is the significant influence that culture and management style can have on implementing and managing a logistics operation. For example, some of the fundamental differences prevalent in the Far East: confrontation avoidance, top-down decision making and agreements formed through handshakes with less regard to contractual specifics are the norm. While the Western approach to dealing with supply chain partners and vendors is to collaborate and pursue a win-win outcome, that attitude rarely prevails in many emerging market locations. Do not underestimate the impact of negotiating style and approach for dealing with suppliers found in different business cultures. In emerging market countries where rule of law can be erratic, establishing sound relationships with known entities is critical.

Highlights

- *Use of technology should support flexibility and integrate with all needed supply chain partners*
- *Technology enablement must be grounded in process discipline and minimize supplier switching costs*

Getting a jump on technical obstacles to integrated supply chain management

Leveraging emerging markets as both product source and product destination can be a dynamic response to global market pressures; however, many companies are not well positioned to take advantage of these opportunities. The key objectives for the technical aspects of managing logistics in emerging markets are to build flexibility into the design, develop a core competency to bring logistics suppliers on board in a seamless fashion, and to enable meaningful information capture that supports continuous improvement. For example, effective supply chain management depends on visibility into the status and location of in-transit materials and products, but many companies do not have these systems in place. Fortunately, many technology-based solutions are available from a range of providers. Nearly all transportation companies offer some type of shipment status or information-sharing system accessible through their Web sites. In addition, there are dozens of advanced logistics planning and execution software applications that companies can install and use themselves.

While there is no comprehensive solution that effectively serves all industry verticals and logistics partners across the supply chain, it remains critical that companies efficiently integrate multiple applications across diverse trading partners. Even with an integrated value chain that seeks to leverage leading applications, true visibility into order and shipment status across the logistics chain depends on tightly defined processes and the ability of all logistics partners to exchange and provide timely status reports on materials in transit. Managing logistics within and outside of emerging market locations can make these processes even more challenging – the increase in variables makes consistent execution and the timely exchange of information very difficult to achieve.

Meanwhile, the very nature of an emerging market means that the number of logistics services providers with the appropriate experience is limited. And switching logistics providers can be very expensive. So part of the challenge becomes finding partners who either have the appropriate experience or have established networks and partnerships with reputable local providers.

Highlights

- *A spectrum of logistics service providers exist around the globe*
- *Selecting the right long term partner can spread out needed investment costs*

Managing and mitigating the risks associated with emerging market logistics

In order to address the challenges of leveraging emerging markets as a cost-reducing, and eventually, a profit-boosting strategy, companies are finding that they need to develop a strategy for managing logistics that can support multiple service-level requirements. As one element of such a logistics strategy, you need to determine how, where and to what extent the services of logistics suppliers should be engaged.

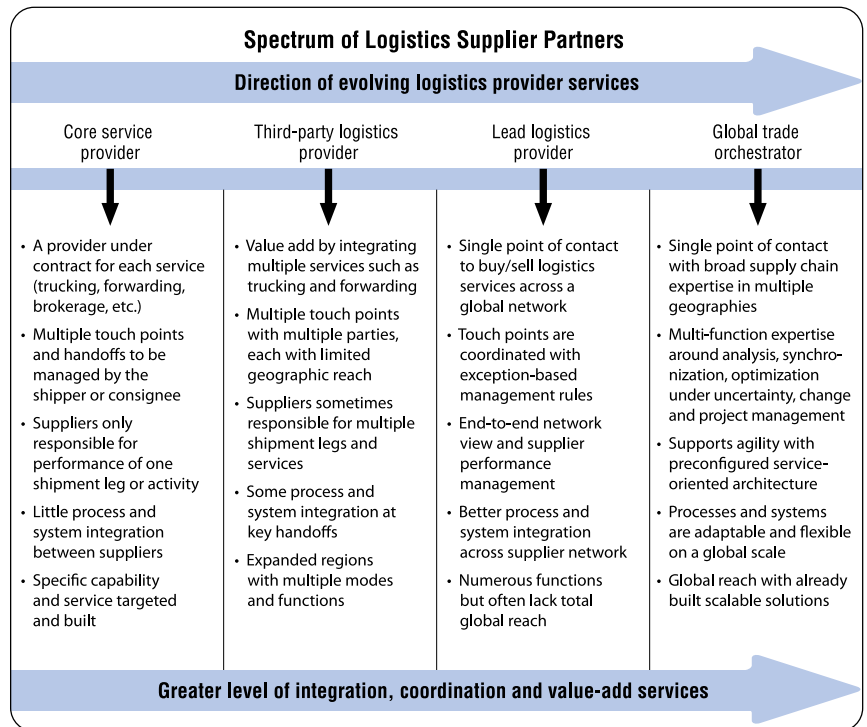
There are several logistics management options to consider before you enter a new or emerging market. One end of the spectrum involves developing extensive multifunction logistics talent within your company, and then managing specific tactical activities and numerous contracts with logistics suppliers that provide narrowly defined services within a specific region or country. In this scenario, pitfalls include the time it takes to develop or recruit the necessary level of logistics talent and leadership, and the administrative cost of managing dozens, if not hundreds, of logistics suppliers.

The other end of the spectrum involves leveraging already established and proven capabilities of a few logistics service providers – or even one – who can orchestrate the many activities, dependencies, and relationships across a global logistics network. Companies taking this approach are able to react to new and emerging opportunities in a shorter, more cost-effective time horizon. Figure 1 summarizes the spectrum of relationships with logistics partners.

Highlights

- **Complex shipper requirements are driving providers to offer more integrated services with global scale**

Figure 1: Logistics service provider options



While core asset-based logistics providers are critical to logistics execution, there continues to be a competitive desire among service providers to offer strategically integrated solutions with a global reach that include already established relationships in key emerging market locations.

As companies decide which model to pursue and which logistics service provider(s) to engage as potential long-term partners in an emerging market, there are a number of factors to consider:

- Experience with integrating logistics across the supply chain and related business functions such as direct procurement

Highlights

- ***Logistics outsourcing requires a strategic approach in line with the overall business strategy***
 - ***Total cost optimization requires that supply chain infrastructure and processes be aligned***
- Demonstrated ability to lead supply chain transformation in phased initiatives that align with current and future customer requirements
 - An understanding of the unique characteristics of the emerging market(s) where you are considering expanding sourcing activities or establishing operations and distribution capabilities
 - Familiarity with your industry vertical and the nature of your supply chain requirements
 - Proven capabilities to advise on, support and manage international trade and customs regulations
 - The capacity to offer robust middleware as an enabler of cross-functional IT integration with multiple supply chain partners
 - The experience and capacity to act as an information broker between you and your supply chain partners
 - Infrastructure and business process designs that are highly scalable and redundant
 - A track record of solid financial health and sound corporate governance.

A global logistics view in alignment with a top-down business strategy helps to avoid a piecemeal logistics contracting or outsourcing management approach that could exacerbate the challenge of integration and shipment visibility. Your approach to outsourcing should help you develop a responsive, plug and play, logistics management capability that will support your entry into emerging markets. This is also a key capability for enabling an adaptive global supply chain footprint and competitive advantage.

To further support this goal, it is important to consolidate and align your supply chain management infrastructure, processes and procedures to reduce costs and improve efficiency. Leading logistics providers now have the resources and expertise to help you design your network and make location decisions that optimize the tradeoffs in cost, service level and risk; but you should be aware that such companies may also be driven by their own business goals. When you receive advice about which emerging markets to target, ask yourself whether this advice is aligned to your business goals, or whether it reflects the logistics supplier's own growth strategy.

Highlights

- ***Many shippers overlook the numerous details when launching operations in emerging markets***

It is very important to look for an objective logistics partner who can establish clear business performance metrics and accountability for the entire ship-to-deliver cycle. This includes activity from the shipping dock in the source country through each leg and mode of shipment. Such information should be a key part of the overall supply chain performance management dashboard – your logistics service provider should be able to supply you with a range of data and performance metrics such as on-time delivery, damage rates, error rates, cost/sales percentages and related financial metrics that drive continuous improvement efforts.

IBM Case Study — overcoming emerging market implementation hurdles

Strong global partnerships with leading logistics suppliers are a highly valued asset when it comes to entering emerging markets. IBM offers a case in point. Several years prior to the sale of our personal computing division to Lenovo, IBM shifted PC fulfillment operations to low-cost jurisdictions and emerging market locations. IBM had been conducting business in China for many years, which provided a leverage point for establishing the necessary legal entity and business model to support a manufacturing operation that could act as a global fulfillment center for a limited line of products.

Setting up shop in one of China's free-trade zones offered proximity to key suppliers and abundant availability of low-cost labor during a time of intense, industrywide cost pressures. But from a logistics management perspective, the implications seemed daunting. IBM needed to design and implement the capability to ship from a factory in Shenzhen to customer locations in the United States, Europe and the rest of Asia. This effort required robust process design with multiple logistics suppliers, not to mention the trade-management-related complexities associated with exporting from a free-trade zone to numerous other countries – most of which had their own unique entry and customs-related procedures.

Highlights

- ***Repetitive execution of common activities cannot be taken for granted in emerging markets***
- ***Solution design should be end-to-end and integrate all needed parties and processes***

In the high-tech industry, the supply chain must be responsive and fast. In logistics, this means pre-clearing shipments through customs while flights are in-transit. The most minor of data inaccuracies on the commercial invoice or shipping manifest during the entry process can delay shipments for hours. While an import delay of only a few hours may not seem drastic, the result can be a missed cutoff time with the in-country ground service delivery provider. This means an entire day can be added to the shipment cycle time.

IBM found that design and implementation challenges resided at the most basic levels. The infrastructure and necessary processes just for getting the trucks from the manufacturing site to the Hong Kong airport caused delays. The frequency and timing of the flight schedules became the hard constraint that all other cutoff times were forced to meet. Getting the necessary level of lift capacity during the high-volume, end-of-quarter seasonal peaks required frequent communication and forecast updates with freight forwarders. Continuous design improvements were needed to reach the necessary process and system integration needed between the freight forwarder, broker and customs agents in the designated country.

For small shipments, IBM took advantage of integrated services provided by UPS and FedEx, both of which have ground and air assets for multi-leg shipment continuity. More problematic were larger shipments requiring multiple third party logistics organizations in a series of freight and information handoffs. IBM believes that a core logistics objective should always be to design and implement an integrated end-to-end solution that includes a process and technology design spanning all involved parties, from the shipping site to the final customer delivery location.

Other emerging-market implementation hurdles faced by IBM

China is not the only major emerging market with strategic significance to the IBM supply chain and global business model. For many years, IBM has sold and distributed products in East European countries. Over the past two years, IBM has expanded operations in countries such as Hungary and the Czech Republic.

Highlights

- ***Logistics management in emerging markets requires intense collaboration up and down your supply chain***
- ***In-country experience should be leveraged whenever possible to facilitate the transition***

IBM's most recent effort included going live with assembly and fulfillment operations with an OEM partner in Hungary. Prior to making a decision about the final location, IBM conducted a network optimization study. Its purpose: to understand the tradeoffs between fulfillment costs, logistics costs, inbound transit times from supplier locations, and outbound transit times to customers throughout Europe.

The longer transit times and greater variability were key to understanding if entering the Hungarian marketplace to seize the benefit of lower fulfillment costs was an optimal supply chain decision. The distance from the manufacturing site to the primary airport in Budapest is a three-hour commute on a two-lane highway. For time-sensitive orders, this long transit time effectively pushes back the cutoff time for shipping to around noon, a loss of nearly a half day. Once the decision was made to operate and ship finished products from Hungary, several supply chain and logistics design points became important to the overall cost-reduction strategy.

Here are some key elements that helped enable logistics management for IBM in an Eastern European emerging market location:

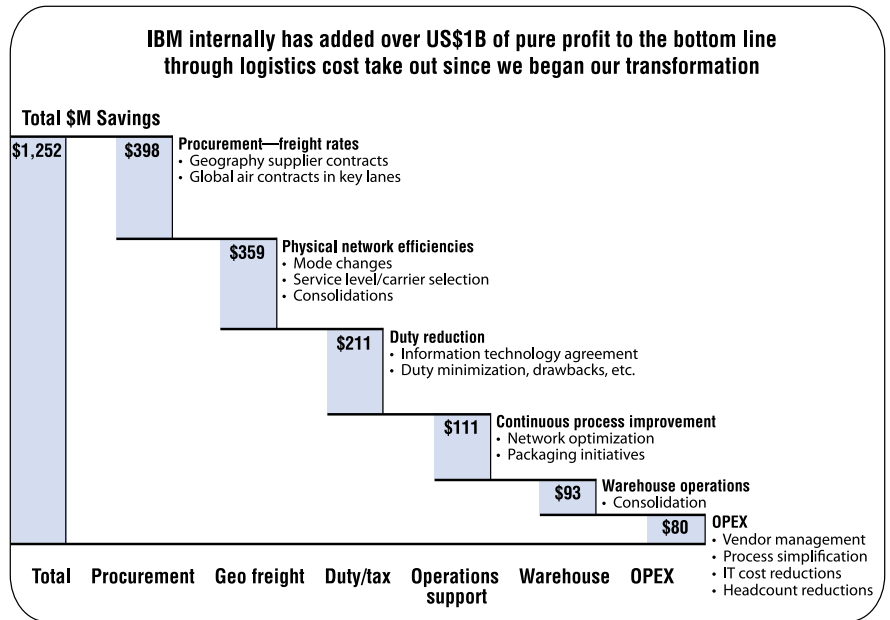
- Extended vendor managed inventory (VMI) programs and pricing agreements with OEM partners to ensure purchase-order flow continuity and control
- Extended IBM's logistics contract agreements to components suppliers on inbound lanes in order to mitigate rising logistics costs and transit time variability
- Formed strong partnership with logistics service provider to allow for vendor on premises activity – service supplier resources and systems that manage the flow of finished goods off the back dock
- Utilized the network of experienced logistics management professionals in the European region to ensure operational communications and continuity within the same time zones
- Took advantage of IBM business presence in-country and local resources to ease the language, culture, and knowledge barrier during transition and initial set up.

The above examples reflect IBM's ability to efficiently enter and enable logistics operations as a strategic component of our global business operating model.

Highlights

- *Expanding logistics operations in emerging markets was only one element of an overall strategic logistics management transformation at IBM.*

Figure 2: IBM logistics cost savings 1995–2004



The cost savings illustrated in Figure 2 were realized during a time when IBM was entering emerging market locations to enable an integrated global footprint. The largest portions of savings were in procurement by utilizing fewer core service providers, and the physical network design efficiencies of operating in key emerging market locales.

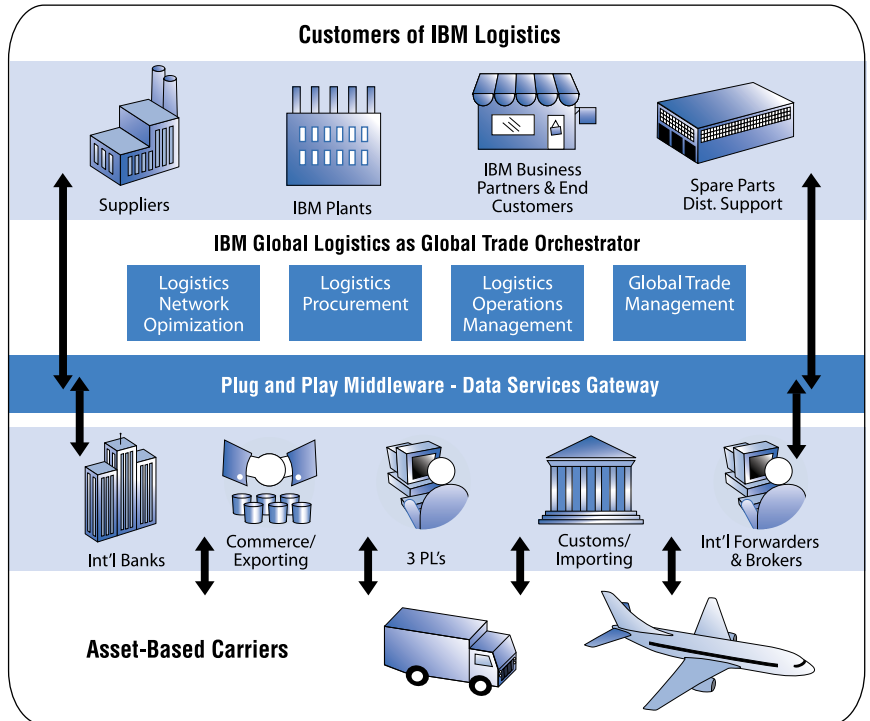
Realizing competitive advantage from logistics transformation

You can prevent rising costs and complexities from eroding the benefits of your global sourcing strategy. The advantages of a strategic approach to logistics are broad and can result in a significant increase in shareholder value. In fact, managing logistics costs, service-level lead times and overall supply chain security is critical to your marketplace competitiveness.

Highlights

- *Logistics management in emerging markets should be a strategic component of your business strategy*
- *Leading logistics service providers effectively integrate functions, processes, and business partners*

Figure 3: IBM Global Logistics Operating Model



The IBM model for managing global logistics highlights its capabilities as a Global Trade Orchestrator. IBM is able to scale this capability for both internal divisions and external customers.

The key to managing global logistics is to enable your company's supply chain with the capability to efficiently unplug from one location or operating scenario, and enter a new or emerging market location. This capability will be both a strategic requirement and a competitive advantage, as long as worldwide business, economic and socio-political variables remain dynamic.

Enabling this strategic capability requires cross-function process design, technology integration, and subject matter expertise ranging from network optimization, logistics contract and operations management to global trade and compliance management. This level of orchestration and collaboration is very scalable when merged seamlessly with a global governance model and strategically oriented leadership.



For more information

To learn more about strategies for transforming your global logistics capabilities and about the solutions and expertise offered by IBM, please contact your IBM representative or visit:

ibm.com/services/bcs/supplychain

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Thanks to the following logistics management colleagues who have provided input for this paper: John Drury, Julie Tracy, and Colin Taylor of IBM, and David Briles of the Lenovo Group.

¹China Logistics: Challenges and Opportunities, ERT Research, November 2005, p. 17

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