

Realizing the Economic Potential of Logistics Clusters

BY YOSSI SHEFFI



As the book explains, the broader economic impact of logistics clusters is generally underestimated.

LOGISTICS CLUSTERS – communities of enterprises that share logistics resources and know-how – have become important building blocks of global supply chains. But they also create jobs and catalyze economic growth – roles that have not been explored in detail, until now.

A new book, *Logistics Clusters: Delivering Value and Driving Growth* (MIT Press, October 2012), provides a detailed account of how logistics clusters have evolved, their critical role in supporting the growth of global supply chains, and the economic benefits they bring.

These groupings of logistics-related business activities have proliferated across the globe. They tend to thrive in places that are near major markets or in strategic locations, such as ports and airports. In most cases, they offer easy access to multi-modal freight networks.

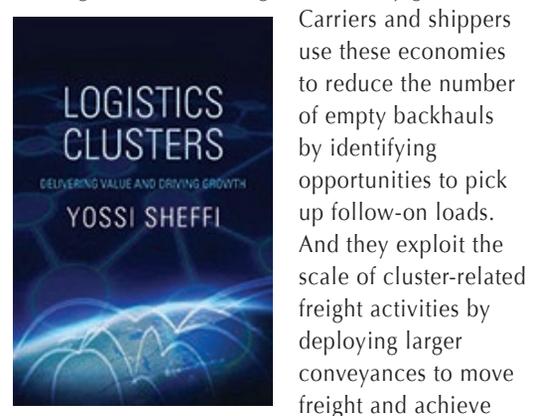
Third-party-logistics providers (3PLs) are prime users of these facilities. Many 3PLs have located in clusters, and/or use them to distribute goods on behalf of their shipper clients. Other organizations commonly found in these communities are transportation and warehousing companies, the logistics operations of industrial firms, and enterprises that derive most of their business from logistics-related activities.

The resource-sharing concept that underpins logistics clusters is not new. For instance, in 14th century Florence, Italy, a colony of artists leveraged their collective expertise to create works of art. More-recent examples include the cluster of high-tech firms in Silicon Valley, California, and Hollywood's world-famous movie industry.

In general, however, logistics clusters have attracted less attention than their counterparts in other industries, particularly in high-profile sectors such as bioengineering. As the book explains, the broader economic impact of logistics clusters is generally underestimated, even though certain governments worldwide, notably the Chinese and Germans, have invested in them.

One reason for the success of the logistics-cluster model is its self-reinforcing nature. As clusters develop, they offer more incentives for companies on a number of levels.

For example, logistics clusters achieve economies of both scale and scope by virtue of the large volumes of freight traffic they generate.



Carriers and shippers use these economies to reduce the number of empty backhauls by identifying opportunities to pick up follow-on loads. And they exploit the scale of cluster-related freight activities by deploying larger conveyances to move freight and achieve

higher vehicle utilization. Moreover, as the freight volumes in and out of logistics clusters grow, transportation service levels improve due to higher frequencies and more direct operations.

As a result of these efficiencies, logistics clusters are able to lower transportation costs and improve customer service, advantages that attract more companies. And as the member base expands, so costs diminish even further and service levels continue to improve, luring more companies to the community.

Logistics clusters also offer advantages based on the interchangeability of transportation and logistics assets. Rail cars, containers, trailers and airplanes come in standard sizes and shapes regardless of what company owns and/or operates them. These assets can be shared by enterprises in the cluster. Warehousing and cargo-handling equipment can be pooled in the same way. Similarly, it is possible to share best practices and knowledge in the logistics space.

Benefits like these enable companies to

Continued on page 20

grown substantially. Distribution of this traffic throughout Britain is dependent on high-quality rail links to the southern gateway ports, such as Southampton and London. This adds a competitive edge

to rail relative to inland road freight and coastal feeder container shipping.

A program of government investment over the last and next five years is in place in order to make the network fit

for longer trains and those carrying the increasingly common 9'6" ISO shipping containers on standard height wagons. One of the curses of Britain's railways

Continued on page 22

CLUSTERS continued from page 17

compete more effectively. Markets have different demand patterns; while some companies may be scaling down, others are looking to add capacity. The ability to share assets and provide operational flexibility helps buffer the community against these variations in demand.

Another key role played by logistics clusters – and one that is often underestimated – is that of job creator.

The port of Rotterdam, for example, employs 55,000 people directly and 90,000 indirectly. The Memphis International Airport in the U.S. supports 220,000 jobs in the local economy, 95 percent of which are tied to cargo operations. In fact, more than one in three jobs in the Memphis area is linked to the airport. There are many more examples of this remarkable capacity for generating employment opportunities.

Moreover, the jobs are varied and not beholden to the fortunes of any one industry, because logistics clusters attract multiple types of businesses. The employment profile of a typical

cluster includes blue-collar jobs in sectors such as warehousing, white-collar positions in various managerial and IT roles, and a mix of skilled jobs associated with a range of value-add services. These value-added jobs come from the various activities that are attracted naturally to logistics clusters, such as returns management, repairs, retail-display preparations, and many others. These activities are performed either by logistics service providers (such as UPS's fixing Toshiba laptops in its Louisville hub) or specialized providers that settle in the clusters (such as Flextronics performing repair operations in Memphis). Such activities provide technical jobs in the logistics cluster, adding to the employment opportunities.

Of particular importance in the current economic and political climate is that these jobs are sustainable; it is not easy to outsource local distribution work to offshore contractors. Cluster-based postponement operations, for example, delay the final assembly of products as late as possible in the production cycle, in order to take advantage of demand forecasts that are more timely and accurate. It follows that these operations must be completed in close proximity to end markets.

Since these jobs remain in the host country, employers need skilled workers to fill the positions, and many companies devote resources to building the educational facilities needed to meet the demand for talent. The availability of top-notch training and education programs helps to attract individuals – and employers – to the locale, another feedback loop that fuels the growth of these clusters.

An area of expertise that is gaining in importance is environmental sustainability, and logistics clusters are becoming innovators in this field. This is driven, in part, by the volume of traffic that flows in and out of clusters. Loads can be consolidated, for example, a strategy that reduces the number of vehicle movements in distribution networks and shrinks the carbon footprint of supply chains. In addition, many of these clusters have become environmental-innovation hubs, supporting the development of alternative-energy transportation.

These benefits, coupled with the increasing complexity of global supply chains, point to a bright future for logistics clusters. They can help both the private and public sectors to meet the demands of globalization, to deliver operational flexibility, and to create new ways to stimulate economic growth. One of the main aims of the book is to highlight these possibilities, and to help build a consensus for more investment in logistics clusters.

Yossi Sheffi, an international expert in supply chain management, is Professor of Engineering Systems at MIT and Director of the MIT Center for Transportation and Logistics.

This article was originally published in the December 2012 issue of 3PL Americas. It is reprinted here with permission.



The Shipper ADVOCATE — Future Issues

The Shipper ADVOCATE provides Canadian and international news and information for Canadian shippers and other industry stakeholders. Many articles that go into the magazine are related to regulations, issues and conditions that are current at the time of publication. We set our lead stories for upcoming issues well in advance of publication and we welcome articles on all transportation-related topics for each issue.

The lead stories (and editorial deadlines) for upcoming issues are:

- Fall 2013 – Innovations in Bulk Freight Transport (November 1, 2013)
- Spring 2014 – Canada's Ports – Key to Economic Success (April 1, 2014)

Proposals for articles can be submitted to Bob Ballantyne at ballantyne@bellnet.ca.

