

## Landed Cost Optimization (LCO) : The next wave in supply chain cost reduction

Kishor Gummaraju  
 Senior Consultant  
 Domain Competency Group  
 Infosys Technologies Ltd.  
[kishor\\_gummaraju@infy.com](mailto:kishor_gummaraju@infy.com)

### Abstract

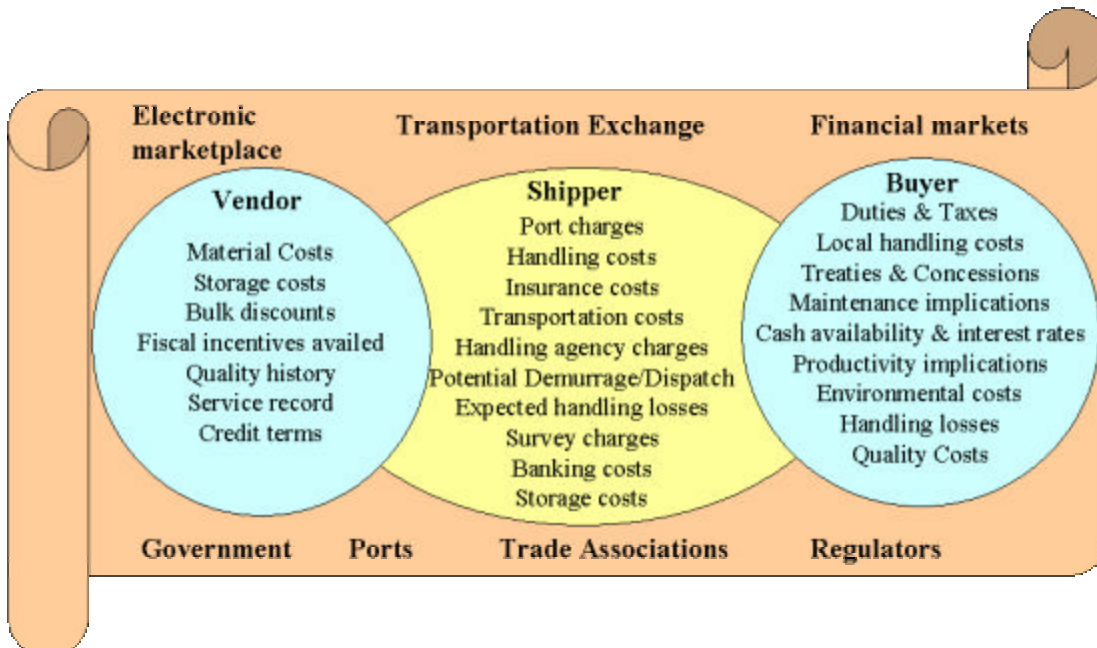
In the emerging global scenario of increasing cross-border trade and dynamic regulatory environment, the need for a comprehensive sourcing decision support tool is inherent and implicit. The primary objective of the buyer is to buy the required product at the lowest total cost, inclusive of all material, taxes, transportation and resource costs. The current day tools available with the buyers attempt to solve the requirements only partially. Procurement tools need to be capable of looking at the procurement activity with the objective minimizing the Total Landed Cost, at a desired service level. In addition to identifying the lowest cost sources of procurement, the tool must, help the buyer perform a lifecycle costing of the product, enable the buyer to identify "potential" sources of procurement and also provide a platform for negotiations. This paper identifies the capabilities required by a tool, which enables the buyer to minimize the landed cost of procurement.

### Introduction

How many times have you found a Procurement Manager claiming credit for identifying a new cost effective source for goods, on account of favorable tax/exchange rates prevailing in the market? How often do you find the logistics manager being lauded for reducing transportation costs by identifying a new port to offload / load the goods? These occurrences would be fairly common in any manufacturing / trading organization. They would also be considered as desirable in the context of a continuous improvement philosophy. However there is another way of looking at these achievements. The delay in identifying the new means of procurement is actually an opportunity cost, which is not captured by any conceivable accounting system.

The ideal environment would be one, which would enable the buyer to take a consolidated view of the procurement scenario at any given point of time, so as to enable her to arrive at the optimal buying decision. The figure below outlines a number of variables and entities that constitute this integrated landed cost view.

### INTEGRATED LANDED COST VIEW



It is important to realize that changes in any element of the cost structure of the item being procured could alter the procurement decision. For instance:

- The Cost Insurance & Freight (CIF) rates quoted on the electronic marketplace very often do not include the duties imposed subsequently by the port of receipt. In such a case the least cost alternative selected may not be the best one since the procurement from one of the vendors could be subject to a special tariff, like an Anti Dumping Duty.
- The local transportation and storage from the port to the factory could be handled by the buyer. This is information, which no electronic marketplace would know of. However the same could have implications on the procurement and transportation decisions.
- A buyer may decide to buy Sulphur from US, based on offers from an electronic marketplace. However Iran could be a better and cheaper source of Sulphur with no representation on the marketplace. The buyer would need to have information about such sources from where and estimated costs at which it would be economical to procure.
- A certain grade of rock phosphate may be cheaper in terms of the landed cost but could result in increased maintenance costs and higher handling costs. This information needs to be factored into the computation of the landed cost for the product.
- A supplier of Ammonia may be offering attractive credit terms after factoring the cost of funds, cash availability, exchange rates and forex premia. The buyer may not realize the same unless a detailed computation is carried out.

Most of the current day electronic marketplaces are capable of providing a very limited view based on the data supplied by the vendor. This could be an FOB rate, a CIF rate or a Landed Cost as dictated by the marketplace. This is however very sub-optimal.

It is necessary to focus on minimizing the total cost of procurement by having a focus on the individual cost elements. This focus on the individual cost drivers would ensure an efficient purchase consistently. There is a lot of optimization that could be done by getting a specialist logistics service provider to provide the transportation service and separately negotiating the insurance contract, as against getting a consolidated quote from the vendor. The issue could get even more compounded in cross-border transactions, involving countries with differential tariff structures based on bilateral agreements, and multiple currencies of transaction. The problem now is thus of choosing the mix of services such that the overall cost is minimized (service quality considerations presumed to be met).

Given this need for minimizing the overall cost of procurement it is necessary to have a tool, which would enable the buyer to consistently make the best buying decision. The Landed Cost Optimizer is one that would go a long way in facilitating the same.

#### **The Landed Cost Optimizer (LCO) :**

The optimizer tool would need to have the following features:

- Capability to identify the lowest cost supplier of the product. This is a given feature of most electronic marketplaces
- Capability to identify the least cost mode of transportation given real time data availability of shipping rates. This is available in a number of transportation exchanges as well as in some electronic marketplaces which are integrated with transportation exchanges
- Information access to the handling costs at the various ports. This is available with Global Logistics Service providers
- Up-to-date information on the taxes, duties, regulations, quotas, bilateral agreements between nations etc. This is also could be available with the Global logistics service providers. For instance Worldtariff.com, a FedEx Trade Networks company provides up-to-date information on taxes and duties across the world.
- Up-to-date information on the insurance, storage and other charges involved in shipping.
- Ability to work with multiple currencies and provide a real time access to information regarding the same.

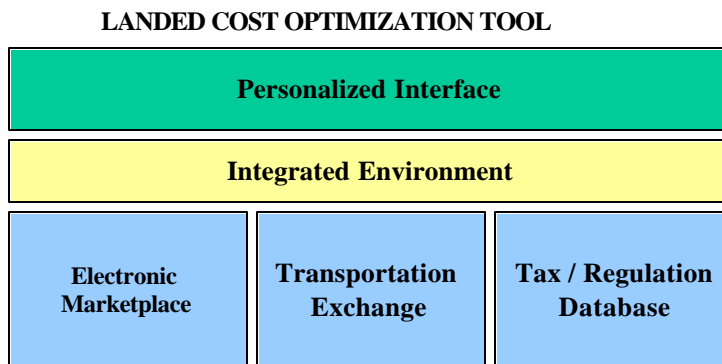
The above would prove to be very useful as a tool to facilitate the identification of the least cost procurement option. However there is always a negotiation aspect to a purchase, and the same should never be neglected. In order to be able to negotiate well the buyer needs to have accurate information of the entire selling environment of the vendor. This would help her try and push costs further down. The tool would hence need to:

- Calculate the equivalent basic price / Free on Board (FOB) of the product based on the lowest landed cost. This could be done by back-calculating the costs based on the known tax rates and the known transportation costs. This feature would be useful since all the elements external to the vendor would have been optimized, and the buyer would have a potential cost figure that she could use in negotiations.
- It should be capable of accessing information about all potential suppliers, including those who are not members of the electronic marketplace. The tool would need to suggest, based on available information, potential vendors with whom the buyer should try to initiate a discussion if it does indeed make economic sense to do so.
- In addition the tool should also be capable of suggesting possible incentives that the vendor would be availing off, in the form of tax breaks and subsidies. This would prove to be additional information, which could be very effectively used during the course of the negotiations.

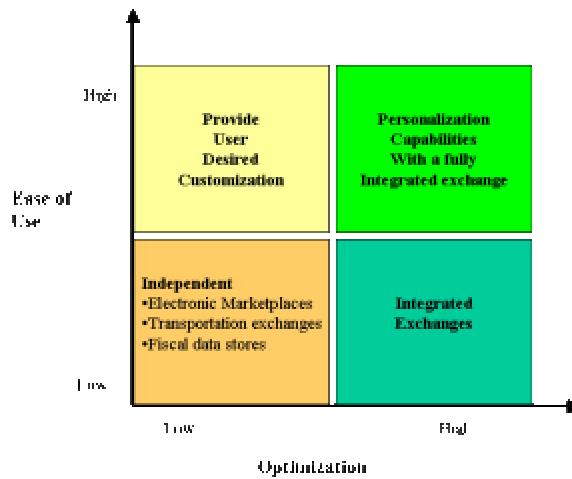
Not all the costs of the supply chain could be visible to the service provider. There would always be certain set of costs, which could be particular to the buyer. For eg. the buyer could be storing the raw material at a storage yard, and using her own transportation to move it to the factory in time for production. The tool would also need to have the following features to ensure extensive usability:

- Capability of being personalized to enable the buyer (as shown in the figure below) to introduce additional factors affecting the procurement. These could involve the factors that affect the lifecycle costs, decisions based on the credit terms and interest rates available etc.
- Ability to generate all the required documentation and reports to facilitate the trade.

The internet, electronic marketplaces, the transportation exchanges and the available fiscal databases provide the basic infrastructure essential to build the Landed Cost Optimization tool. It would be required to integrate these available platforms and provide the required personalization interface, as shown in the diagram below, to develop the optimization tool.



The tool would thus significantly add value by transforming the current day electronic marketplaces into Personalized Integrated Marketplaces, with high fit to the customer requirement.



**Who could provide this service ?**

The key to providing this service is that the service provider has:

- Access to up-to-date information on the regulatory and fiscal aspects of trade
- Infrastructure to enable access to low cost transportation
- IT infrastructure to provide the facility

Thus the large logistics service providers seem to be the best placed to provide these services, on account of their familiarity with the regulations, procedures, taxes, transportation industry and above all the available infrastructure. They would need to integrate with the available marketplaces and their own transportation exchanges and fiscal databases. This would be a logical extension to their business objective of delivering the right product, to the right place at the right time.

**Conclusion**

LCO, although not a new concept, has not yet been implemented on account of the lack of availability of real time up-to-date information. Most of the current day systems do attempt to facilitate the process of buying at the least cost. However, they do not enable the buyer to make a more intelligent decision by optimizing every element of the cost, due to the lack of integration between the various available tools. LCO as a concept is making a beginning with some products. It has however still not evolved completely, and will in the near future be a specialized offering by large logistics service providers. The service would prove to be an imminent success on account of the potential it has to reduce costs for the in reducing supply chain costs.