

Tax Structure and Supply Chain Network Optimization in India

Designing an optimal supply chain configuration that can meet the expected growth rates is a challenging task, especially in India. While customers demand improvements in each aspect at ever-lower prices, producers and distributors in India are facing increasing competition in nearly every product category. The traditional methods of supply chain design and management do not always apply in the Indian context, owing to its complex tax regulations, non-standardized transportation, uncertainties across the value chain, and low rate of technology adoption. Nevertheless, those companies who have embraced these complexities and designed their supply chains in India to efficiently move products from sourcing through fulfillment are reaping the rewards of the market size and growth potential that India offers.

Complex Tax Structure:

To say that India's tax regime has a significant impact on supply chain design is an understatement. Transaction taxes (import/entry, manufacture and sale of goods and provision/receipt of services) have a direct and tangible impact on the cost of goods or services. The taxation structure in India is complex, with products typically being taxed twice: once by the central government and then by the respective state governments.

The **Central Sales Tax (CST)** effectively encouraged many companies to operate a warehouse in each state rather than pay CST while shipping to customers or stores across state boundaries.

Excise Duty, a structure of selective regional exemption, complicates logistics design by creating a skewed manufacturing footprint in India. Companies are likely to resort to deploying production operations in regions which offer exemptions to excise duty in spite of incurring higher logistics costs, time-to-market and working capital.

Further, the impact of varying **Value Added Tax (VAT)** structure in different states, customs exemptions in **Special Economic Zones (SEZ)**, **Service Tax** and corporate tax make supply chain design and optimization all the more challenging.

As the tax and regulatory issues in India evolve, manufacturers and distributors must adjust their footprint and supply chain strategies, requiring greater flexibility and awareness than in most other markets.

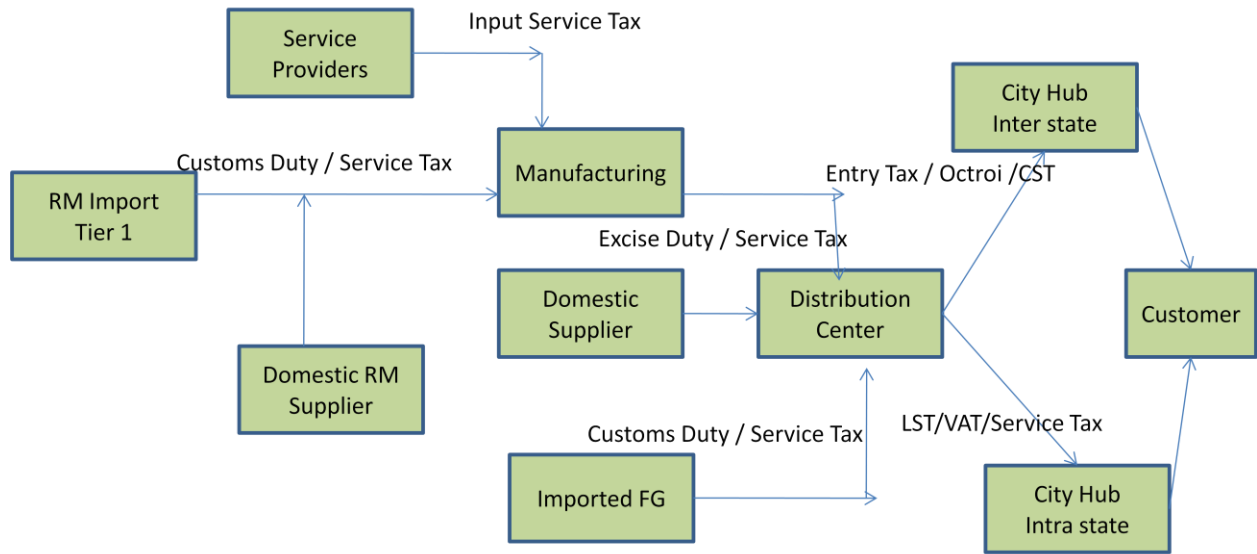
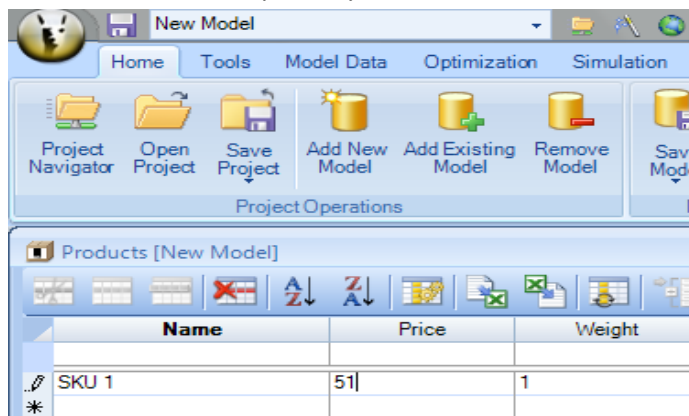


Figure: Tax Supply Chain in India

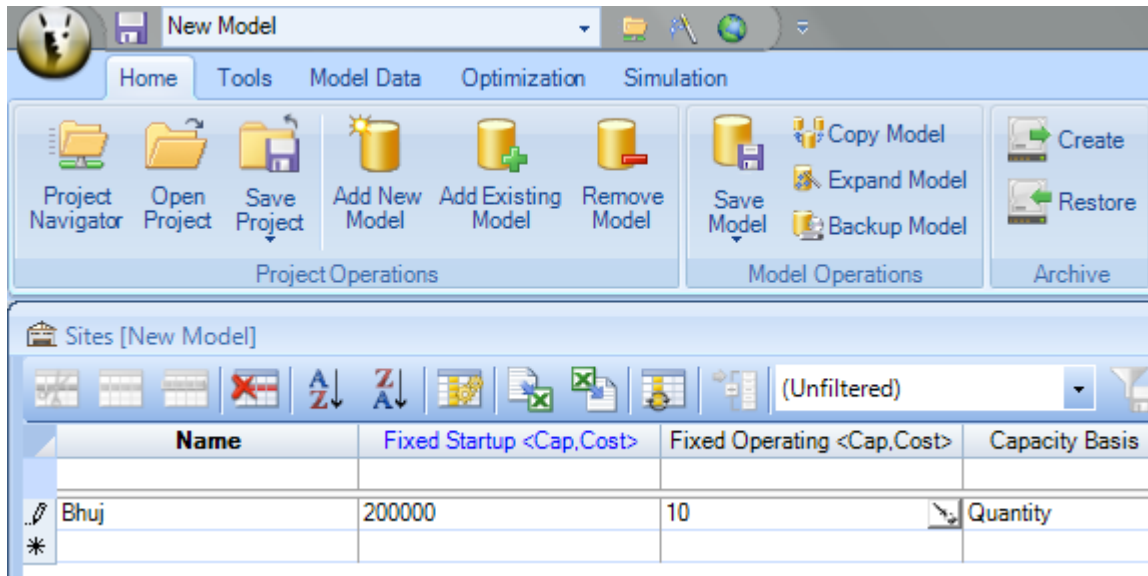
Modeling taxes and duties:

Supply chain network optimization tools like **Supply Chain Guru™**, can help model all taxes in the supply chain. The software can then help the organization take a decision that can help in lowering costs even in this complex tax structure.

The complex taxation environment in India skews the network footprint towards fiscally beneficial locations. All the different taxes and duties need to be modeled differently for a network optimization exercise. For instance, excise duty can be added to the modeled product cost with exempt locations incurring only input cost. On the other hand, income tax, levied on plant-level incomes, should be minimized separately in the overall objective function.

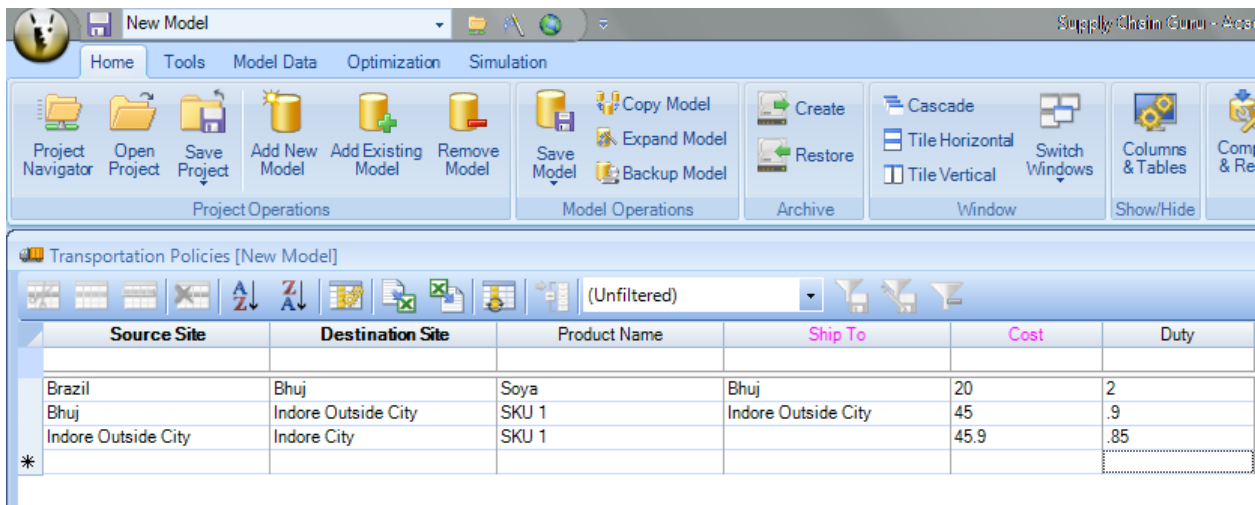


Alternatively, income tax could be loaded on to production costs after careful examination of various plant-level cost elements.



In transportation and warehousing, CST, VAT and Octroi play an important role. Modeling CST, a tax on inter-state movement of goods, requires knowledge of source and destination locations and whether a lane is inter-state or intra-state. In order to overcome this tax, manufacturers typically move goods to a warehouse in each state as internal stock transfer and sales that take place are then shown as intra-state transactions. However, the impending phase-out of CST by March 31, 2010 would enable shift to centralized distribution networks.

Since the Indian government is moving towards a uniform VAT across all states, ideally it should not have an impact on the future supply chain footprint.



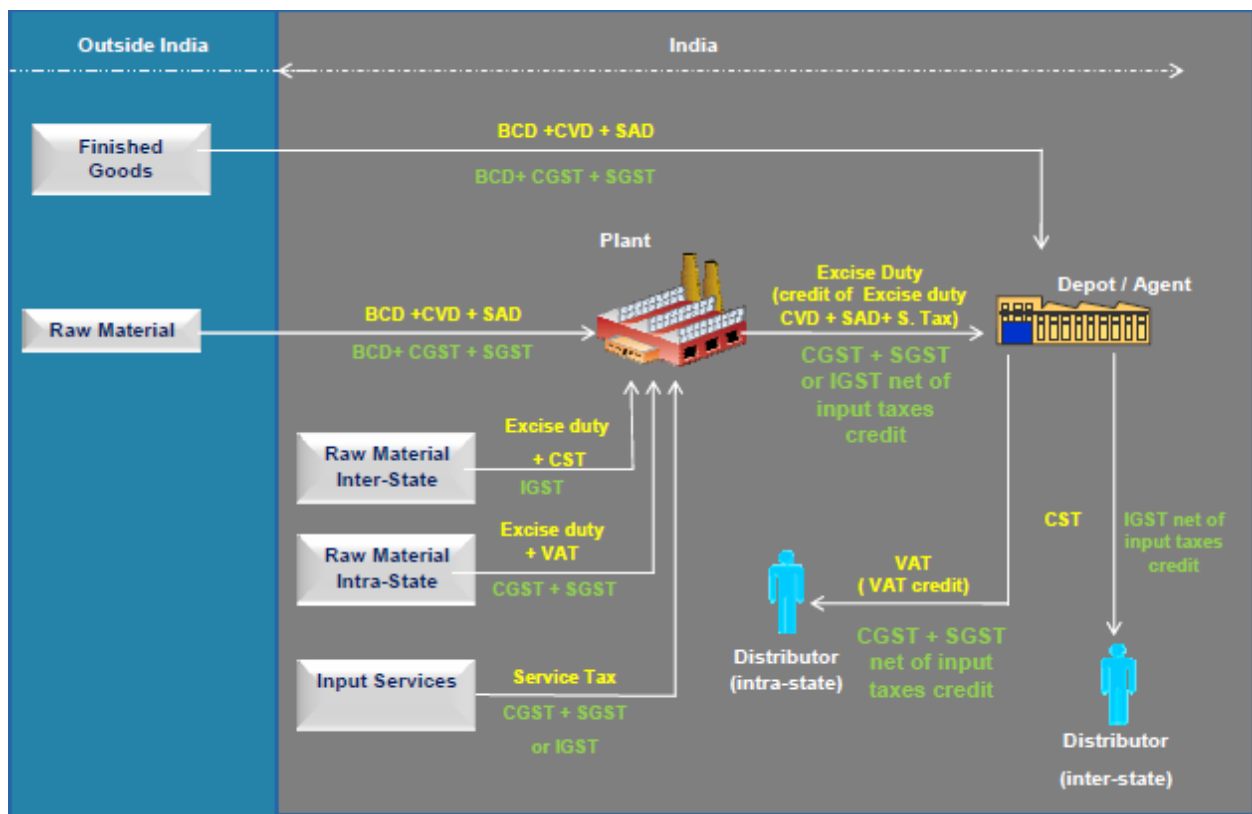
Octroi, a tax levied on entry of goods into a town or city, forces manufacturers to locate warehouses outside city limits and move the goods into the city only when actual sales take place (to avoid paying

taxes on inventory inside city limits). Thus, Octroi may lead to addition of a tier in the supply chain and consequently higher costs. However, Octroi has been phased out in most Indian states.

Use of network modeling softwares like Supply Chain Guru™ can incorporate all the complexities of the tax structure and still suggest the most optimal network.

Effect of GST on Network Models

Rationalization of excise duty rates and the expected implementation of Goods and Services Tax (GST) could significantly tilt the cost-benefit equation of the manufacturing location decision for certain firms. For instance, for products with an MRP of Rs 100 and raw material costs of Rs 40 the net excise payable (assumed at central GST rate of 8% and discounting recoverable excise paid on raw material) would be ~Rs.1.60. Factoring in inbound and outbound logistics costs, excise exemption benefits might be overridden by logistical efficiency criteria, compelling firms to rethink their manufacturing and distribution strategy.



Implication for network design:

1. Distribution networks would shift towards the interstate sale model, eliminating the need for C&FAs and warehouses in each state.

2. Distribution networks would need to be redesigned to minimize total supply chain costs (primary & secondary logistics, warehousing and inventory holding costs) while maintaining service levels.

Getting ready for GST

Impact Assessment of GST must be studied on the following areas:

- Mapping the impact of GST on supply chain/business/margins
- Review of tax clauses of existing contracts and new contracts
- Identification of key decision areas
 - Indigenous procurement vs Imports
 - Manufacturing locations
 - Distributor/dealer networks and margins
 - Direct sales vs stock transfers
 - Warehouse & stocking points

Gazelle's Approach to supply chain impact analysis due to GST

We employ a two stage approach where we will model the as is supply chain and then run GST based scenarios to simulate the new supply chain. We will give our recommendations on the proposed supply chain network.

Gazelle's expertise

Supply Chain Network Modellers having more than 3 dozen network reconfigurations as experience

Tax and supply chain experts from academic institutes

Supply chain Network Optimization Software that is used by more than 250 of the world's largest organizations.

To study the impact of how the tax structure changes can affect your supply chain network, contact Gazelle at:

Kirit Goyal : 9868825252

Utpal Das: 9836309666

Mahesh Gangeswaran: 9790020075

