

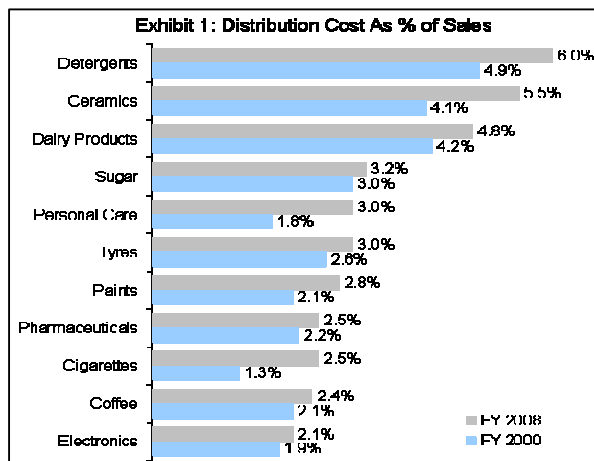
"Is your logistics network Y2K10 ready or caught in a time warp?"

The next wave of supply chain efficiencies is around the corner with the expected phase out of the central sales tax and other infrastructural improvements. Companies can achieve a bottom-line improvement of 0.7% - 1.0% of sales by restructuring their distribution network. Pankaj Gupta (Practice head-Consumer & Retail), Angshuman Bhattacharya and Paras Mehta of Tata Strategic Management Group analyze the fast changing regulatory landscape and evaluate opportunities for companies for the next wave of competitiveness enhancement.

The late nineties and the early part of this decade have witnessed entry of several multinational firms and the growth of large Indian firms scripting India's emergence from a regulated to a liberalized market. Traditionally, companies in India have structured their supply chains around taxation and incentives related considerations. First it was the backward areas incentive, followed by sales tax incentives and more recently, excise and income tax benefits in states like Himachal Pradesh, Jammu & Kashmir and Uttarakhand. While these benefits have traditionally influenced the choice of manufacturing locations, distribution economics have often been ignored in the process, leaving networks of many companies sub-optimal.

Exhibit 1 demonstrates that distribution costs as a percentage of sales in India have considerably

increased between FY 2000-08 across sectors. While this increase can be partly attributed to higher distribution penetration, rising fuel prices and increasing service level needs, it is also a reflection of the significance of taxation as a key supply chain design consideration. In a bid to contain distribution costs, supply chain executives continue to experiment with various initiatives to improve service levels and reduce costs. However, this is increasingly becoming an uphill task. While infrastructural improvements in the form of highway development, freight corridors and logistics parks would have a favorable impact on the cost of distribution, the next wave of dramatic improvements in the supply chain landscape in India could arise out of **central sales tax (CST)** phase-out and the consequent elimination of taxation considerations from supply chain network design.

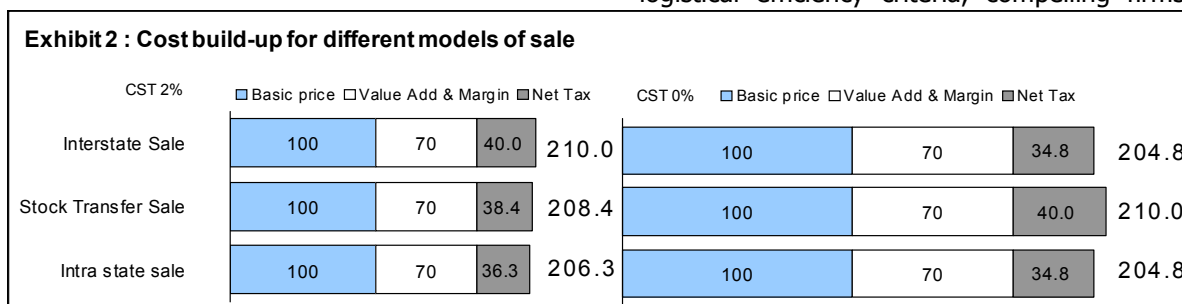


Current Scenario: Distribution Network Design Principles

To appreciate the impact of CST on the supply chain landscape in India, it is important to understand its impact on the distribution network decision for companies. *Exhibit 2* indicates that under the CST regime, inter-state sale has an adverse impact on the end price to the customer and hence the margins to the company. Companies have thus historically preferred the stock transfer/C&FA model. The stock transfer

model necessitates the presence of at least 1 C&F agent and warehouse in each state.

inbound and outbound logistics costs, excise exemption benefits might be overridden by logistical efficiency criteria, compelling firms to



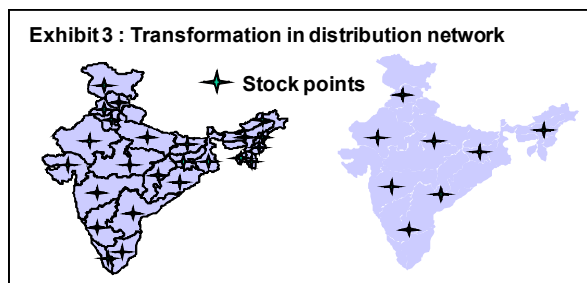
Key Assumptions:

1. VAT=12.5%
2. Excise duty=8%
3. Percentage of inter state purchases: 60%
4. Manufacturing value addition: ~70%

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 re-designed to minimize total supply chain costs (primary & secondary logistics, warehousing and inventory holding costs) while maintaining service levels.



The above phenomenon has led to higher number of stock points resulting in higher supply chain costs and consequent complexities associated. An analysis of the scenario with CST equal to 0% demonstrates that the advantage of the stock transfer model over the interstate sale model diminishes as CST reduces to zero. This implies that after CST phase-out, distribution network design would move out of the bounds of taxation considerations and be purely a function of logistical efficiencies. Hence, CST phase out in the year 2010 would create one big market without inter-state distortions, creating an attractive opportunity for companies to generate supply chain efficiencies.

Moreover, 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

Expected Impact on supply chain costs

Reduction in the fixed cost of warehousing due to lesser number of warehouses

With every reduction in the number of warehouses, there is a reduction in fixed costs like manpower, systems, ERP licenses, material handling costs etc. Consolidation of warehouses would also lead to improved control due to favorable transportation contracts and lower capital investments. Our analysis indicates that national players could achieve a 15-20% reduction in warehousing costs by transitioning to an inter-state structure.

Reduction in inventory holding costs

As the number of stocking points reduce, aggregation of demand over larger catchments, results in lower demand variability and hence lower safety stock. Depending on the lead time demand, companies could achieve an 18-30% reduction in inventory holding costs for the desired service level.

- **Reduction in primary distribution cost**
Lesser number of warehouses would lead to reduced primary transportation distances. Greater volume consolidation would result in the usage of larger trucks ensuring higher economies in primary distribution.

- **Potential reduction in secondary distribution**

Consolidation of warehouses could theoretically have an adverse impact on the secondary distribution costs due to part loads or smaller trucks over longer distances resulting in higher costs. These concerns could be addressed through efficient milk runs, use of hub and spoke transshipment/cross docking models

The net savings from distribution costs could be to the tune of 12-20% of the primary and secondary logistics costs

- **Other benefits**

Besides the direct benefits, there are significant benefits associated with reduced complexity, transaction costs and redundancy

- Extent of purchase of raw materials from the state of manufacturing
- Degree of value addition to the raw materials

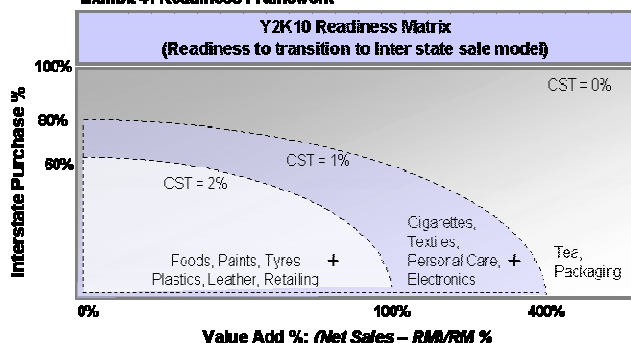
Exhibit 4 summarizes the implication of the regulatory changes for companies in different sectors at different stages of CST phase out. At a CST of 2%, interstate sales would be more attractive as compared to stock transfer and sale, for companies with less than 100% value addition and less than 60% share of interstate purchase. A large number of sectors like food, paints, leather etc could benefit from transitioning to the interstate sale model at CST of 2%. At a CST of 0%, all sectors would benefit by transitioning to the interstate sale model from the currently prevalent stock transfer and sale model.

Emergence of multimodal logistics

Improving infrastructure is radically transforming the transportation landscape in the country from uni-modal to multi modal logistics. While road infrastructure, serving ~65% of country's freight movement, is witnessing improvements with the golden quadrilateral and north south east west highway projects, the rail freight network in India is on an expansion spree.

These developments along with the expected emergence of logistics parks are set to usher in a new era of rail based multi modal logistics in India. Our analysis indicates that through effective use of rail logistics, companies could further lower primary distribution costs by 20-30% over long hauls.

Exhibit 4: Readiness Framework



of operations leading to improved supply chain visibility

When to transition?

As companies move towards the zero CST regime, they could generate a significant cost advantage by realigning their distribution networks. While some companies would benefit from a shift towards interstate sale at a CST rate of 2%, others would experience the benefit at a CST rate of 0%. The timing of the shift would be a function of:

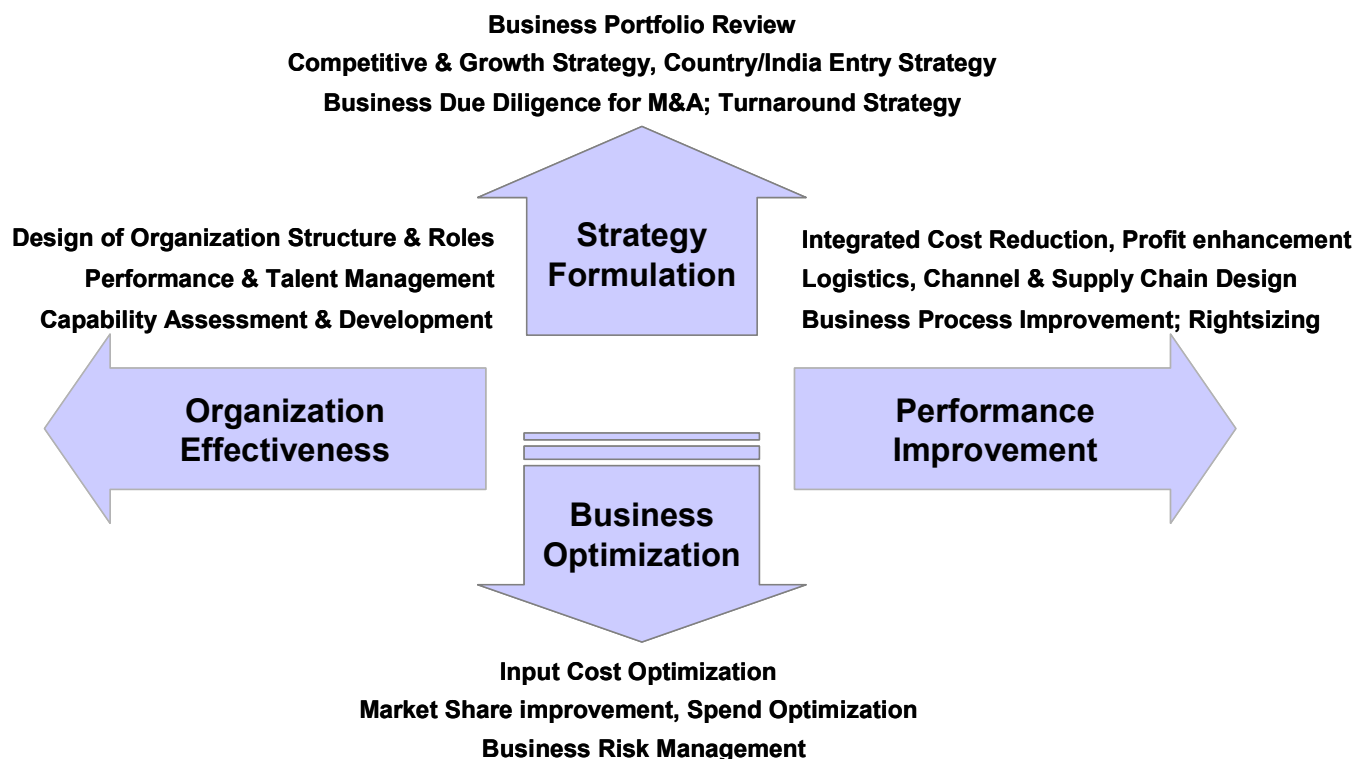
The way forward

Across sectors, companies would need to re-evaluate their distribution strategy to leverage on this opportunity. Companies could achieve an improvement in overall supply chain costs to the tune of 16-25%, translating into a bottom-line improvement of 0.7%-1% of sales from distribution alone.

By 2010, companies which are Y2K10 enabled could have a significant competitive advantage over companies with a time-warped supply chain.

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