The Impact and Dynamics of Centralization in Supply Chain Decision-Making

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Summary: This thesis examines the relationship between centralization in the supply chain organization of companies, cost structure and the factors prompting companies to either centralize or decentralize their supply chain organization.

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KEY INSIGHTS

1. Strategic functions are centralized and operational functions are decentralized, while tactical functions tend to be centralized or decentralized depending on the business context.

2. The two most important factors for centralizing or decentralizing in any function across industries were customer requirements and cost considerations; Strategic functions were centralized for cost considerations and operational functions were influenced by customer requirements.

3. Companies that have a hybrid structure, where strategic functions were centralized and operational functions were decentralized, were able to achieve the lowest cost.

Introduction

Companies adopt different structures for their supply chain organization. While one company might retain supply chain decision making at the corporate level, another might delegate supply chain decision making to the business units. Since supply chain organizations are critical to corporate success it is important to understand the dynamics that shape supply chain organizational structure – should companies centralize the decision making in their supply chain organizations so that decisions can be made centrally or should they decentralize their decision making so that supply chain decisions can be made locally? Our research examines this question in greater detail.

In order to understand the current practice in the industry, we conducted a web based survey of companies representing consumer (CPM) and industrial products manufacturers (IPM), logistics service providers (LSP), and retailers (RET). The survey can tell us what companies are practicing today. But are these practices optimal? To answer this question, we examine the results by evaluating the dynamics in organizations and developing a model that integrates our analysis. We test our model using two case studies and derive conclusions on the basis of our results.

Centralization and Strategic Importance of Functions

For our research, we categorized supply chain functions into three broad groups – strategic, tactical and operational as defined in Table 1. Such a
categorization will enable us to explore centralization in the supply chain organization at a granular level.

<table>
<thead>
<tr>
<th>Functions</th>
<th>Strategic</th>
<th>Tactical</th>
<th>Operational</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timeline To Plan/Execute</td>
<td>Long - Yearly</td>
<td>Medium - Quarterly, Monthly</td>
<td>Short - Daily, Weekly</td>
</tr>
<tr>
<td>Impact on Business</td>
<td>High</td>
<td>Medium</td>
<td>Low</td>
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<td>Risk</td>
<td>High</td>
<td>Medium</td>
<td>Low</td>
</tr>
<tr>
<td>Examples</td>
<td>Long-term Capacity Planning</td>
<td>Transportation Planning</td>
<td>Order Fulfillment</td>
</tr>
<tr>
<td></td>
<td>Sourcing</td>
<td>Inventory Planning</td>
<td>Order Management</td>
</tr>
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<td>Short-term Demand Planning</td>
<td>Manufacturing Planning</td>
<td>Shipmen t Handling</td>
</tr>
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<td>Internal Improvement</td>
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Table 1: Framework for Supply Chain Functions Grouping

The survey results showed us clearly that strategic functions are centralized and operational functions are decentralized, while tactical functions are either centralized or decentralized depending upon the business context for our respondent companies.

Factors Influencing Centralization

We also evaluated the factors (among supply conditions, customer requirements, government regulations, competitive situation, cost considerations, and capacity constraints) that influence companies to centralize or decentralize their supply chain functions. The factor analysis showed us that:

(a) Cost was the key driver for centralizing strategic functions and customer service was the key driver for decentralizing operational functions for our respondent companies.

This result is intuitive though not obvious because strategic functions are applicable to the entire organization but not tailored to a business unit and hence, it made good economics to centralize strategic functions and operational functions by their nature are customized to a particular need. Once again, it made good economics to decentralize operational functions.

(b) Industrial product manufacturers and consumer product manufacturers were influenced by similar factors. However, industrial product manufacturers had cost as a dominant factor, while customer requirements dominated the structure design for consumer product manufacturers.

Industrial goods are typically made to specifications and hence tend to focus on costs whereas consumer goods manufacturers have to compete among other players to gain mindshare and a cost focus might not give them adequate competitive advantage.

(c) “Customer requirements” was a critical driving factor for logistics service providers.

Logistics being such a competitive industry the popular differentiator for companies in this industry is “customer service”.

Cluster Analysis on Centralization and Cost Structure

Our research also showed that companies that centralize their strategic functions and decentralize their operational functions, (which we call the hybrid structure), achieved the lowest cost.

We obtained this result by conducting k-means cluster analysis (k=3) of respondent companies on the basis of the centralization of their supply chain functions. We created three distinct groups based on whether they were highly centralized in their supply chain functions, named as “centralized cluster”, highly decentralized, named as “decentralized cluster”, or had a combination of centralization in strategic functions and decentralization of operational functions, named as “hybrid cluster”. Our analysis revealed that the hybrid cluster companies had the lowest cost.
The companies in the “hybrid” cluster tended to also have higher revenues. Centralizing the strategic functions enabled these companies to reduce costs, decentralizing the operational functions enabled them to improve their revenues and hence they were able to achieve a lower supply chain cost as a percentage of sales. Perhaps this approach enabled these companies to get the best of both the worlds by adopting a robust structure for their supply chain organizations.

**Dynamics of Centralization**

After evaluating the current practices in industry, we identified three key factors influencing centralization or decentralization of the supply chain organization in companies:

- **Cost**: companies striving to achieve a target cost based on competitor prices tend to centralize their supply chain functions to exploit the resulting economies of scale
- **Customer Service**: companies that want to provide a high level of customer service to their customers tend to decentralize their supply chain functions.
- **Control (risk and incentive)**: “control” is a soft factor, which can be explained through two key dimensions within the control factor: risk and incentive.

Any of these three factors, cost, customer service, or control, can dominate in an organization and the dominant factor would structure the supply chain organization to be either centralized or decentralized. These factors also influence the transitions and oscillations in the organization as priorities change or when products mature.

**Case Study 1 – Sourcing at the Leading Consumer Products Company**

To test out our model, we examine the case of a company, a maker of mobile computing cases and accessories. This company is based in Southern California and sources majority of its products from manufacturers in China. The different business units buy goods directly from suppliers in China and Taiwan. The company recognized the potential of integrating the sourcing function and resorted to centralize it to a central location. However it faced a number of challenges:

- Longer sourcing decisions and difficulties in maintaining the high level of customer service.
- Misalignment of incentives at the region created resistance from local business units.
- High transportation cost.

This resulted in a situation where the company had to discontinue the centralized procurement process and revert to the previous approach. The incentive misalignment can be thought of as a dysfunctional “control” factor in the organization, which was not aligned to the change in the corporate strategy. The “cost” factor was motivating the company to centralize; the “customer” factor was motivating the company to decentralize.

Without adequate processes in place the company was unable to convert a corporate strategy into reality – a classic illustration of transitions and misaligned processes in that organization.

**Case Study 2 – Shipment Handling at the Pharmaceutical Company**

As another evaluation of our model, we present the case of a leading pharmaceutical and animal health company that provides medical products and vaccines for livestock, pets and wildlife. The company has a very high market share with more than 60 to 70% in its top selling products. With fierce competition in the industry, high customer service level is a critical success factor. To accommodate the business needs, the company decentralized its shipment handling so that decisions can be made closer to the customers. This decentralization of shipment handling caused additional inventory holding and some redundancy, but the reduction of lost sales was attractive.

With this structure, the company was able to achieve high levels of customer service. At the same time to reduce costs, the company outsourced most of its
operational functions and even some part of its tactical functions. This enabled the company to make optimal decisions under multiple constraints and still achieve low supply chain costs.

This case is an excellent illustration of a company that has aligned processes to not violate any of the factors. The company is able to achieve high levels of customer service by decentralizing its operational functions, manage the "cost" factor by outsourcing and retain control at the centre. The company’s close partnership with its partner has enabled it to lower costs, build trust and yet achieve the level of control that is vital for a successful realization of corporate strategy.

**Conclusion**

Our research showed us that strategic functions are centralized for cost considerations, and operational functions are decentralized to improve customer service in our respondent companies. We also found out that companies that centralize their strategic functions and decentralize their operational functions are able to achieve the lowest supply chain costs as a percentage of sales. The results, however, cannot be generalized and any recommendation will have to take into consideration the unique business context of the company and environmental situation.