

IBM Institute for Business Value



Benchmarking study in Asia quantifies value from supply chain visibility and optimization

Overview

The IBM Institute for Business Value provides a business process benchmarking service that helps clients measure their current state and compare their performance against peers; these benchmarking services can be provided as part of a process transformation initiative or similar engagement.

A benchmarking program survey of logistics managers provided insights about their organizations' practices and performance. Statistical analysis of the data provides an indication of the benefits an organization can gain through supply chain visibility and optimization.

Introduction

Volatility and complexity are among the top challenges facing supply chain executives today. To manage in this environment, organizations need visibility into their supply chains in order to make decisions with accurate and timely information; and tools and practices to dynamically optimize the supply chain to create enterprise value.¹

A benchmarking study in Asia quantifies the benefits from supply chain visibility and optimization practices/tools. We surveyed more than 300 supply chain managers from a variety of manufacturing industries across Greater China, Japan, South Korea, Malaysia, Philippines, Singapore and Vietnam. The respondents answered questions about various practices, as well as their organizations' performance for specific supply chain metrics.

Our study results showed that supply chain visibility and optimization practices were associated with better order performance, shorter order cycle times, and inventory benefits including higher raw material turns, higher inventory accuracy and a reduction in value of missed sales opportunities.



We used statistical clustering methods to assign each organization to one of two groups based on its overall usage pattern for practices and tools. The “optimizers” generally had higher usage of the following practices and tools, compared to the “operators” who are simply executing their processes, largely without the aid of supply chain visibility and optimization practices (see Figure 1):

- Fact-based, predictive analysis and decision-making culture supported by real-time visibility into data across the enterprise
- Network planning and optimization tools
- Advanced planning and scheduling tools
- Transportation management systems
- Sharing with customers real-time, electronic demand and inventory data.

Group assignments performed using statistical clustering methods

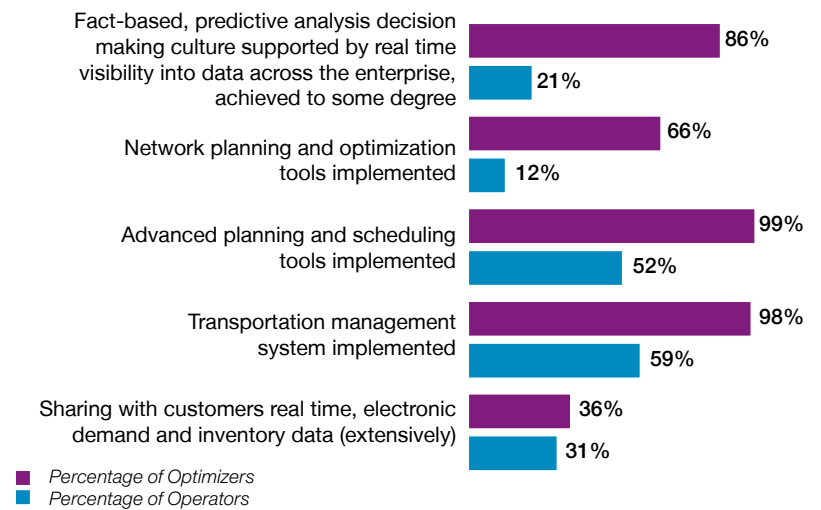


Figure 1: Use of key practices and tools within each group.

Value of orders not fulfilled due to stockouts or lack of production capacity, as percentage of revenue

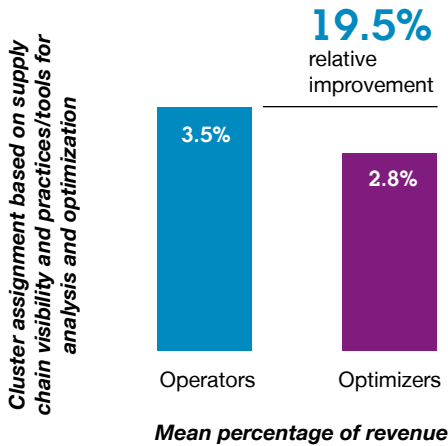


Figure 2: Sales loss from stockouts or lack of production capacity.

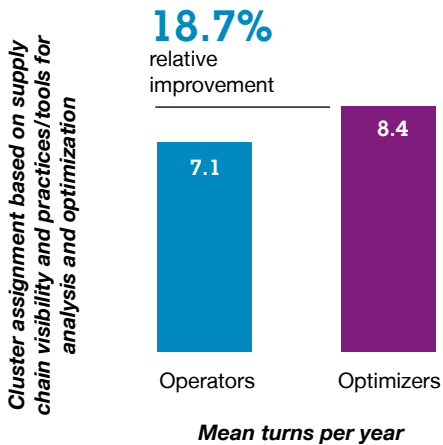


Figure 3: Raw material inventory turns per year.

After organizations were segmented into these two groups based on their overall usage patterns for practices and tools, we analyzed the metric results to find statistically significant differences in outcomes between the groups. The optimizers tended to have better outcomes for a number of key performance indicators.

The optimizers in our study reported an average perfect order performance of 88.9 percent, compared to an average of 87.4 percent for the operators. For order fill rate, the optimizers reported an average 92.0 percent, a relative improvement of 2.5 percent over the operators.

These modest improvements in order performance can make a difference in overall outcomes for an organization, reducing the costs of rework such as labor and replacement while increasing customer satisfaction and loyalty, or reducing sales loss from cancelled orders or lost customers. Each incremental improvement provides a gain from the standpoint of efficiency and productivity. But potentially the maximum impact comes from reducing the risk of losing valued customers – and instead increasing their loyalty through flawlessly executed interactions.

The optimizers in our study had fewer missed sales opportunities, with an average of 2.8 percent of sales loss as a percentage of revenue due to stockouts or lack of production capacity; this was a 19.5 percent relative improvement over the operators (see Figure 2). They also, on average, had more than one additional raw material inventory turn per year (see Figure 3), enabling them to free up more of their working capital for other investments.

For primary products, starting with order placement, ending when product is delivered to customer

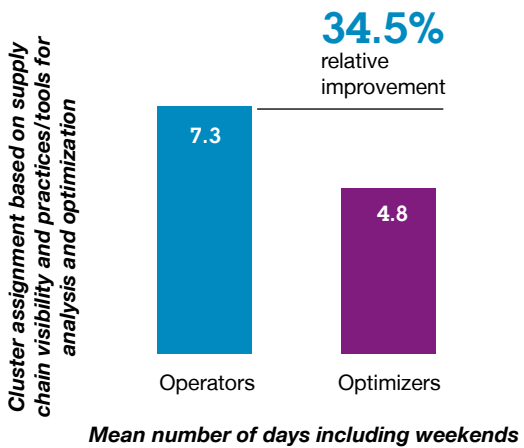


Figure 4: Order cycle time.

If inventories are too lean there is a danger of suffering stockouts, but this group is keeping both inventory and stockouts lower. Considering the time from order placement through delivery, for primary products, the optimizers had an average cycle time of 4.8 days, a relative reduction of 34.5 percent compared to the operators (see Figure 4).

Related to their lower stockouts and shorter order cycle times, the optimizers had higher inventory accuracy (97.6 percent accuracy, compared to 96.8 percent for the operators, a small but statistically significant difference). Relatively small changes in inventory accuracy matter, since each item that cannot be located may have the potential to cause increased time and costs to locate the item, a dissatisfied customer, loss of a sale or even loss of a customer.

In summary, we observed substantial performance improvements in key supply chain metrics for organizations with a pattern of using optimization practices and tools, including:

- A fact-based decision-making culture
- Real-time visibility into data across the enterprise
- Network planning and optimization tools
- Advanced planning and scheduling tools, and
- Transportation management systems.

Our findings link these practices to measurable improvements in order performance, order cycle times, stockouts, raw material inventory turns and inventory accuracy. Such improvements can create value for the enterprise and contribute to growth by freeing up capital for investments and increasing the loyalty of existing customers. They are enabled through the use of analytical tools, based on a foundation of accurate and up-to-date information across the entire supply chain.

The marketplace is likely to become even more competitive and volatile in the near future. Successful organizations will lessen the impact of volatility using predictive analysis. They will collaborate with suppliers and customers, and dynamically optimize their supply chains to position themselves better to create value and hedge risks.²

To learn more about the IBM Institute for Business Value Benchmarking Program, visit ibm.com/iibv.

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About the author

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Notes and sources

1 Butner, Karen. "New rules for a new decade: A vision for smarter supply chain management." IBM Institute for Business Value. December 2010. <http://www-935.ibm.com/services/us/gbs/thoughtleadership/ibv-new-rules-new-decade.html>

2 Ibid.



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