

White Paper

SUPPLY CHAIN SEGMENTATION 2.0: WHAT'S NEXT

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Supply Chain Segmentation, Part II: Advances and Advantages

How can you profitably meet the needs of a wide range of customers, all of whom have different preferences and priorities? Supply chain leaders know that one size does not fit all—that no one supply chain can maximize company profitability while still meeting the divergent needs of a broad range of customers. It is, therefore, no surprise that supply chain segmentation continues to be a source of great interest in the supply chain community, particularly given the global increases in volatility of both supply and demand.

At its core, supply chain segmentation is a process of grouping customers by shared sets of values, then developing supply chains that can profitably meet the needs of each customer group on its own terms. Done properly, supply chain segmentation can significantly increase customer service and satisfaction levels, while at the same time increasing operational efficiency and profitability.

Instead of attempting to meet the divergent needs of different customer groups with a supply chain designed to give the best average performance for all—one that will be suboptimal for each—you can identify key values for groups of similar customers and optimize individual supply chains to maximize performance for the attributes those customers consider the most important.

In our previous supply chain segmentation paper, Supply Chain Segmentation: The Next Step in Supply Chain Excellence, we discussed some of the fundamentals for creating a supply chain segmentation strategy. In this paper, we will highlight three improvements that make designing and implementing a supply chain segmentation strategy easier and more effective.

- First, we will introduce an improved method for mapping the attributes that are most important to your customers and for segmenting those customers into clusters.
- Second, we will look at how to use contribution margin, as opposed to average cost data, to make smarter tradeoffs between your profitability and customer requirements.
- Finally, we will examine the importance of proactive engagement with your customers and alignment with your suppliers.

Engagement and alignment are not only critical to make your strategies work, but also to ensure you have your finger on the pulse of fast-changing customer requirements—giving your company the insight it needs to respond and adapt to your customers' changing demands. Collaborative execution is the basic competency that enables this level of engagement and alignment, thus bridging the gap between segmentation strategies and supply chain success.

A Quick Review of Supply Chain Segmentation

Industry analysts and others have developed a number of process models for customer segmentation. Each of these models, irrespective of the number of steps they contain, recognizes that the process of customer segmentation is iterative: customer requirements and market realities change, making regular re-evaluations essential. It is imperative to begin the process with customer and market analyses and conclude with an assessment and refinement stage. The interim steps include: creating a limited number of customer requirement "clusters;" designing supply chains to meet the particular needs of those customer clusters; and developing cost models to drive the determination of profitability at the customer and product level.

The simplest and most prevalent segmentation models are based on a two-by-two matrix. The axes are labeled with any pair of attributes that are valued by customers; cost and service levels are two common axes, as are volume and variability of demand.

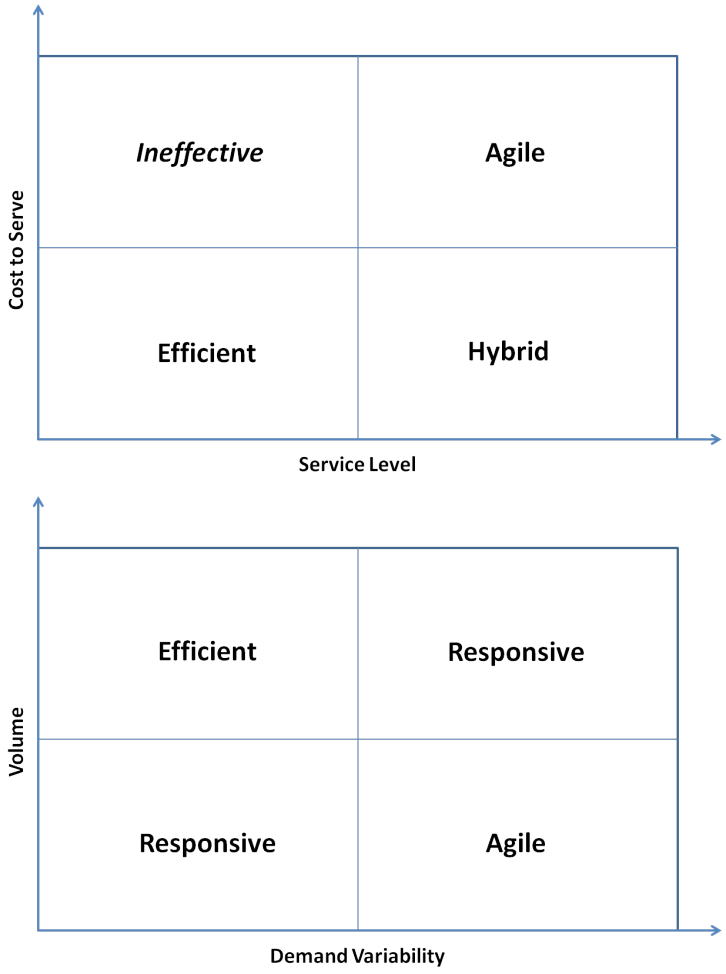


Figure 1: Examples of two-axis customer value/attribute models.

Recently, we have begun seeing three-axis models in the form of triangles, with the apices representing the selected attributes; customers are then mapped according to their distance along each axis.

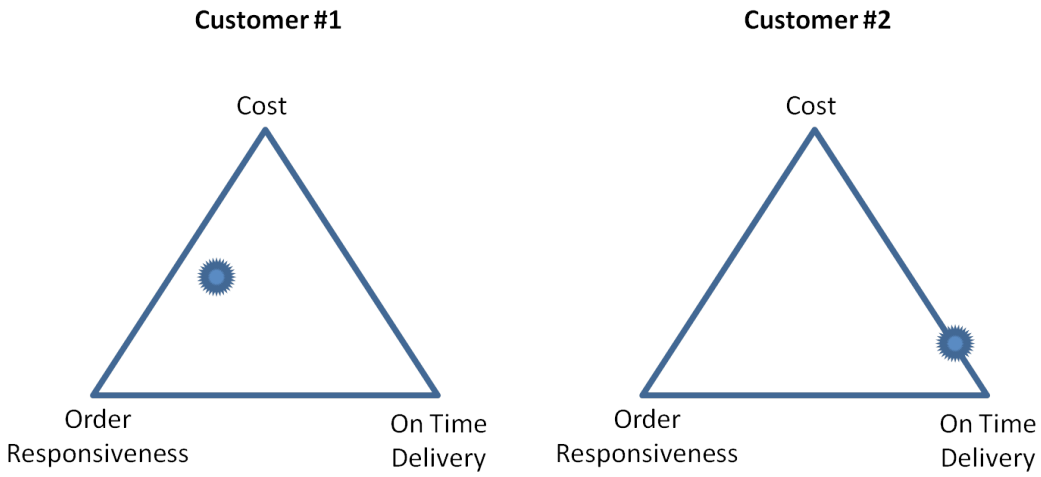


Figure 2: Examples of three-axis customer value/attribute models.

Customers are mapped to these models on the basis of how they value key attributes. These values can be determined through customer research techniques, including in-depth customer interviews, surveys, financial data, and internal company knowledge. Customers with similar "maps" are then grouped into clusters, a process often involving shifting clouds of Post-It® notes around the walls of a conference room and heated discussions about how to combine disparate and disconnected categories of data.

Best practices suggest whittling the initial set of clusters (which may number as many as two dozen) down to a more manageable four, five, or six. Once the clusters are defined, supply chains are designed to support the defining attributes of each group. Cost-to-serve for each product and customer cluster must then be defined so that cost-service tradeoffs can be determined. Finally, it is important to monitor the operation of the segmented supply chain in order to fine tune the processes and incorporate improvements; the model development process should also be reiterated at regular intervals in order to capture changes in customer requirements and market realities.

Best Practices for Segmentation

So far, so good. But how can you improve upon these well-known procedures and practices? We have three recommendations: (1) enhance existing procedures to speed the process of customer clustering; (2) leverage better cost data for more accurate tradeoff analysis; and (3) enhance customer and supplier collaboration to improve the effectiveness of supply chain segmentation strategies in operation.

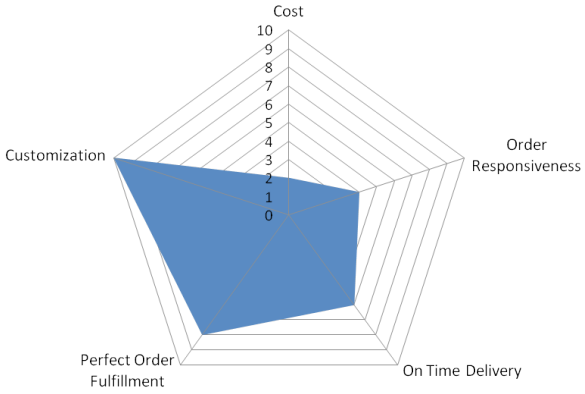
Simplify the Process of Creating Customer Clusters

First, to speed and simplify the process of creating customer clusters, identify the five or six most important customer attributes and use them as the axes of a radar diagram. By considering all of the key attributes together, you spare yourself the time and pain of trying to pull together and synthesize multiple charts for each customer.

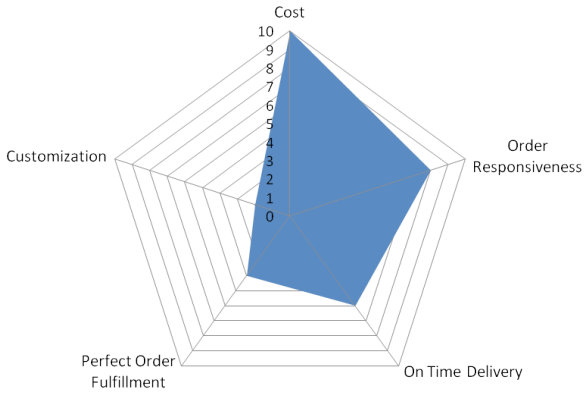
Once the radar diagram is defined, customers should be mapped along the axes according to their individual characteristics and preferences. Companies with similarly distributed plots belong to the same cluster. This pattern recognition process does not need to be painstaking: simply look at the shapes, and cluster the similar ones together.

Below are examples of five radar diagrams, illustrating customers with unique product and service attribute combinations:

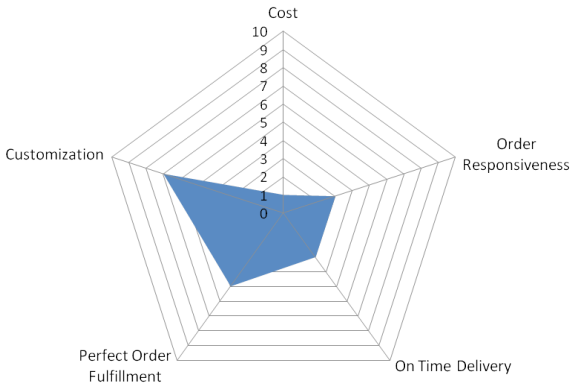
Customer #1



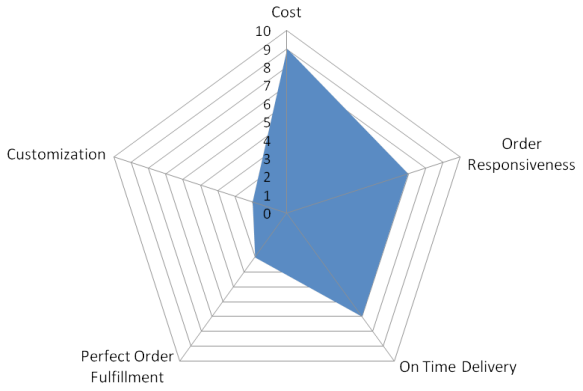
Customer #2



Customer #3



Customer #4



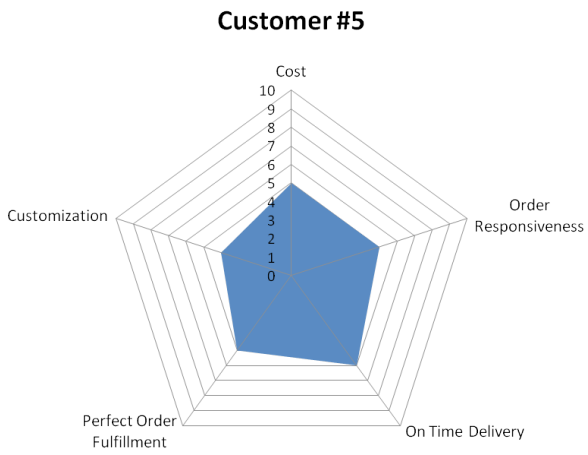


Figure 3: Examples of n-axis customer value/attribute models (i.e., ray diagrams).

In the examples given above, customers 1 and 3 belong to the same cluster, defined by a strong need for customization and perfect order fulfillment, with relatively little price sensitivity. Customers 2 and 4 belong to a second cluster, in which cost, order responsiveness, and on-time delivery dominate. Customer 5, which is relatively balanced across the different attributes, is a member of a third cluster.

This new approach has two main advantages over previous practice. First, all key attributes can be considered simultaneously and holistically, rather than attempting to patch together multiple graphs for each customer. Second, it is a fairly straightforward exercise to visually identify clusters of similar shapes by looking at the patterns created in the radar diagrams (i.e., similar customer requirement profiles).

This simple visual technique saves time and provides clarity. And while the pattern recognition process is still somewhat subjective, the technique clearly and consistently displays all relevant data in one place—a far more concrete approach than trying to fit together a bevy of pairs or triplets of disconnected characteristics. If the diagrams show similar shapes, the companies they represent share similar characteristics, belong together in the same cluster, and can be well served with the same supply chain design.

Of course, companies with sufficient customer data and statistical expertise on staff have the option of performing quantitative cluster analyses, using one of the many fine statistical analysis tools available (e.g., SAS, S, R+), or even general purpose tools such as MATLAB (for which cluster analysis code developed in academia is freely available on the Web). Here again all of the relevant data will be considered together, rather than in subsets that must then be pieced together to form a coherent picture.

Think Differently about Cost Analysis

Our second recommendation is to think differently about customer cost analysis.

In a standard supply chain segmentation model, cost analysis is performed after identifying customer clusters. In a perfect world, we would have detailed activity-based costing data for every product. The reality, however, is that cost estimates tend to be just that—estimates, based on averages derived from (often incomplete) accounting data.

But even in the absence of perfect information, it is possible to move beyond standard costs. By leveraging more sophisticated information systems that are able to capture multi-tier cost data, we can develop highly granular cost information that offers a real advantage in determining the profitability of particular product- and service-level combinations.

Many analysts suggest that cost-to-serve is the best metric for determining which tradeoffs to make between cost and service levels. However, for the purposes of developing segmentation strategies that best improve both customer satisfaction and company profitability, we suggest that a more appropriate metric is *contribution margin*. Contribution margin is determined not only by the cost of a particular product, but also by how much a particular customer is willing to pay for that product, delivered at a particular level of service (i.e., how much profit that combination can deliver to your company's bottom line).

For example, for customers requiring very rapid delivery of products, transportation and handling costs will probably be much higher than transportation costs for customers facing less time pressure. If customers with the highest level of urgency value speed of delivery over the costs of providing that service level (that is, are willing to pay a price premium that exceeds the cost of providing the service), that customer-product-service combination will be more profitable—and have a higher contribution margin—than the customer-product-service combination with the lower cost.

By utilizing contribution margin in our tradeoff analyses, as opposed to cost alone, it is possible to identify segmentation strategies that will boost profits while also benefitting customers. And with accurate, multi-tier cost data, we have the ability to match product costs and service levels to customer willingness to pay.

Improve Customer Engagement and Supplier Alignment

Our third recommendation is both simple and powerful. In order to maximize the effectiveness of your supply chain segmentation strategies once they are in place, it is crucial to work continually to improve engagement with your customers and alignment with your suppliers.

Customer engagement is crucial both for assessing the effectiveness of the strategies you have in place and for keeping a finger on the pulse of changing requirements. Significant changes to customer requirements may qualify a customer for a different cluster; similarly, changes in a particular market or in the broader economic environment may signal the need to redefine the clusters altogether.

It can be difficult, particularly for companies selling through multiple channels, to collect, aggregate, and analyze all of the relevant customer data. The introduction of constant, real-time information via social media channels makes the challenge all that much more daunting. But with the right analytical tools, plus a network capable of collecting, aggregating, and contextualizing information from multiple sales channels, it becomes possible to "hear" what your customers are saying as soon as they say it. This same network can also be leveraged to communicate back to customers, in real time, providing them with important information about products, orders, and shipments.

Meanwhile, in order to ensure that the most urgent needs are met from the perspective of your customers and company, it is important to work with your suppliers, contract manufacturers, and other trading partners to ensure that those products and customers have priority. As one wise E2open customer noted, "You never want to stock out of a core product." This is particularly true for your most critical customers—whether those customers are critical from a revenue, profitability, or strategic perspective.

For example, you may purchase 1,000 components from a particular supplier, of which only 50 are required to support your core products. But if you do not communicate this information, your supplier will remain unaware of which components are most important to you, and will therefore be unable to prioritize to most effectively meet your company's needs. Aligning your trading partners with your segmentation strategy requires level-setting and communication early and often, and is most effective when done at a high level.

The Bottom Line

Leading supply chain practitioners recognize that there is no one-size-fits-all supply chain capable of profitably meeting the needs of widely divergent

customer groups. Customers today are better-informed and more demanding than ever. Costs continue to rise—as does volatility of both supply and demand. These are just some of the factors driving an increased interest in supply chain segmentation strategies.

So how will you know if your segmentation strategy is working? The combination of the right process management and analytical tools, plus a network that can connect you to your suppliers and customers, will provide you with the business intelligence and real-time insight needed to evaluate and improve your segmentation operations and overall strategy. This combination of functionalities and technologies will enable you to optimize service levels for a diverse set of customers—and to identify and resolve exceptions as they occur in the extended network.

This is the essence of collaborative execution: the connectivity needed to facilitate real-time visibility and communication across partners; the business process logic and analytical capabilities needed to make sense of what you are seeing and hearing; and the proactive issue resolution needed to identify and resolve problems collaboratively, as they occur.

About E2open

E2open is a leading provider of cloud-based, on-demand software solutions enabling enterprises to procure, manufacture, sell, and distribute products more efficiently through collaborative execution across global trading networks. Brand owners use E2open solutions to gain visibility into and control over their trading networks through the real-time information, integrated business processes, and advanced analytics that E2open provides. E2open customers include Celestica, Cisco, Dell, Hitachi, IBM, LSI, Motorola, L'Oreal, Seagate, and Vodafone. E2open is headquartered in Foster City, California with operations worldwide. For more information, visit www.e2open.com.

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