Future of supply chain

Micro supply chains: Balancing complexity and variety

September 2021

KPMG International

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Customer demand for variety and customization is exploding, creating huge complexity and cost to serve for organizations. To compete, companies should find ways to identify and deliver value to profitable customer segments at an appropriate cost. Micro supply chains are finite, decentralized, resilient, agile 'mini operating models', with flexible supplier contracts and relationships, and manufacturing closer to the point of purchase. Supply chain leaders should balance complexity and managing global risk by understanding the sources of value from variety — like speed, service and cost — and optimizing their delivery systems to offer value using standard processes.

1 Rising supply chain complexity

Supply chains used to be all about reducing cost. Over the past decades, this trend has led to large, integrated, global networks that gain economies of scale through outsourcing manufacturing to emerging economies, backed by long-term contracts.

However, these supply chains are not flexible or fast enough to satisfy today's customer who expects highly customized products allied with same-day delivery. The exponential increase in customer segments cannot be addressed through a 'one size fits all' supply chain operating model.

Adding variety and speed to existing models creates huge complexity in the form of multiple product lines, continuous process improvement, automation, stock rationalization, and a growing number of suppliers and distributors. For each new segment, overhead and other indirect costs grow and economies of scale diminish.

All companies want to be customer-centric, but there are limits to what they can achieve. By trying to satisfy every customer, businesses may experience high manufacturing, logistics, inventory and customer service costs. Extreme cost-consciousness, on the other hand, can lead to valuable customers being underserved. Indeed, amidst rising complexity, it can be hard to even identify and focus on the most profitable customer segments.

The ability to balance the variety demanded by customers against the costs associated with complexity can help ensure future supply chain success.

> **"It's vital to identify market opportunities — or 'profit pools' — and align your operations to help extract as much value as possible from the segments you serve."**
>
> **Yatish Desai**
>
> Managing Director, Supply Chain & Operations,
> KPMG in the US

2 Balancing complexity and variety

Managing supply chain complexity is the key to helping to optimize cost, value and competitive advantage. The starting point is to gain a better understanding of costs and value, but this is a challenge, as the costs of complexity are not linear. As the 'before' diagram below shows, costs rise rapidly in line with variety, and revenue often fails to keep pace.

In order to gain mastery over complexity, and progress to the improved performance level in the 'after' diagram, businesses should make two important breakthroughs:

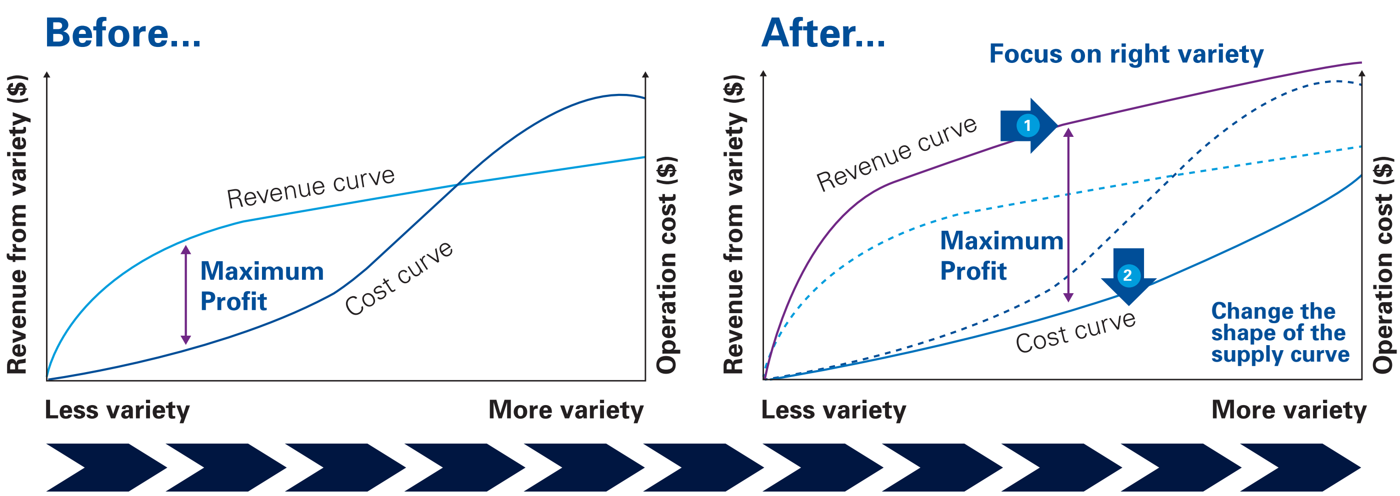
1. Understand the sources of value from variety

Variety on its own won't necessarily deliver value. Companies should analyze their customer and channel requirements. Some segments may value speed, others functionality, and others will want low cost. They must also assess the best way to differentiate their offering versus competitors.

2. Optimize the delivery system

The aim is to provide the best value at the lowest cost, by aligning product/service delivery with the needs of each segment, and standardizing the processes behind each customer segment. These 'mini operating models' are known as **micro supply chains** aimed at specific groups of customers.

Operating model performance



3 Micro supply chains

Micro supply chains balance the cost of complexity with the value gained from offering variety. They are based around customers, not processes, and guide companies to customize products, policies, production systems, flows, and systems around specific segments.

Micro supply chains are highly flexible, enabling manufacturers to switch sources, production and delivery at short notice to introduce new products and scale volumes up or down swiftly to adapt to changes in demand. They are also more decentralized, aiming to create as much value as possible as close to the customer as possible by keeping products largely generic until the final stages of the supply chain.

Because micro supply chains are largely independent, mini operating models, the way in which one customer segment is served, should not impact other segments. Companies can run multiple standard work processes in parallel, helping to reduce the costs of complexity that would typically be associated with multiple variations of products.

> **“Flexible contract manufacturing enables companies to replace more of their traditional fixed cost base with variable costs to adapt faster to changing demand.”**
>
> **Peter Liddell**
>
> Global Head, Operations Center of Excellence, KPMG International, and Partner, Operations Advisory, KPMG Australia

Understanding the sources of value from variety

In a micro supply chain, low-value, standard products, or standard parts of higher-value products, can continue to be made in larger volumes at established global factories. Non-standard parts and products should be produced and assembled closer to the end market. This helps accelerate the move towards modularization, where products consist of largely common components that can be customized easily and quickly to suit individual tastes. 3D printing will clearly play a big role, enabling tailored designs to be made in small locations very close to the end customer. Contract manufacturing offers further potential to reduce fixed costs associated with large-batch production.

Thanks to more local manufacturing and assembly, many transport routes will subsequently be significantly shorter, often between local nearshore and onshore production hubs. Not only does this save on logistics costs; it also reduces the carbon footprint. There will be a growing emphasis on last-mile delivery, which could open up access to a far wider range of local transport providers – including registered private citizens – via logistics platforms.

As KPMG's paper Future-proof your reverse logistics explains, returns represent a growing cost of doing business, in terms of transport, leakage, storage and scrappage. The annual cost of reverse logistics in the US alone is expected to reach $550 billion by 2020.[1] Specialist reverse logistics providers can provide expertise and help optimize costs, which is particularly important in highly regulated sectors like life sciences. Manufacturers can also reduce costs and waste by keeping returns closer to the initial delivery point, by storing items in local warehouse facilities and selling them via promotions and/or discounted rates to targeted customers to avoid obsolescence.

In addition to managing complexity, micro supply chains are less vulnerable to macro phenomena like volatile interest and exchange rates, tax regime changes, trade tariffs and quotas, wage inflation, and crop failure.

Contracting

Long-term, locked-in contracts are likely to become a thing of the past as supply chains seek agility and flexibility. Short-term value chains are set to thrive as fourth- and even fifth-party logistics providers (4PLs and 5PLs) begin to act as key coordinators across environments.

Future partner agreements should be shorter term and give more freedom to scale volumes up or down and alter or customize production — moving towards an 'as-a-service' model, with less investment in fixed assets. Given the growing number of relationships, service level agreements are expected to take on increasing importance — especially with smaller providers — to maintain standards, provide free flow of data and help ensure cyber security and data privacy. Data ownership is another critical issue, as lack of access to customer data impacts visibility and restricts sales and marketing opportunities.

Collaboration

Collaboration across industries and competitors should increase, as organizations seek to reduce the costs and complexity of their operations. Micro supply chains involve a vast number of players and logistics routes. In addition to 4PLs and 5PLs, there will likely be greater numbers of contract manufacturers, wholesalers, distributors and warehouse providers. The emergence of supply chain platform providers brings further choices, and manufacturers could opt to use part or all of a platform provider's supply chain as one channel to customers, distributors, wholesalers and, as mentioned, last-mile delivery services.

[1] Costs of return deliveries in the United States from 2016 to 2020 (in billion U.S. dollars), Statista, 2019.

4 Three steps towards a better balanced micro supply chain

To be competitive, future supply chains should aim to offer the variety that customers seek while achieving a lower cost to serve. By segmenting the market into 'profit pools', companies can gain greater value from the most attractive and fastest growing market segments.

The three key steps to building a micro supply chain are:

1. Identify and understand the sources of value in the market — like speed, quality, price, convenience, service levels, product features and customization. Create segments based on different value sources, and size and assess these segments for competitiveness, margin potential and future growth. Then, create a set of product and service offerings around these segments.

2. Understand the drivers of cost along the supply chain by measuring the cost of complexity within each segment. Evaluate the labor, infrastructure, supplier and logistics costs to service these segments.

3. Produce models of different value streams in order to pinpoint the optimum balance of variety and cost, and to generate performance trade-offs. This enables you to calculate scenarios that show the cost and value of delivering different combinations of responsiveness, flexibility and cost.

> **"Micro supply chains help reduce global dependencies, create alternate sources of supply and services, and strengthen resiliency."**
>
> **Jérôme Thirion**
>
> Partner,
> KPMG in Canada

5 How can KPMG help?

KPMG recognizes that today's business leaders don't only need solutions, they need reliable business advisors. Whatever your sector, KPMG's network of firms can add value in your supply chain transformation journey.

Multi-disciplinary teams from across our global network of firms combine deep industry expertise with an agile approach to help you unlock existing value within your enterprise and enhance your capabilities to achieve sustainable growth in the future.

KPMG consultants can bring to bear a suite of frameworks, methodologies and tools to help you review, design and optimize your supply chain function.

— Drawing on a wealth of insight and experience, KPMG has developed a sophisticated, purpose-built digital analytics platform that your teams can leverage to pinpoint opportunities and cost drivers faster and more effectively.

— KPMG has designed a series of proprietary operating model and technology accelerators that can help turbo-charge your supply chain function and accelerate your return on investment from transformation efforts.

— KPMG has devised a systematic methodology that identifies and interrogates costs across the full length of the value chain. We work diagnostically, top to bottom, from the costs associated with your product portfolio through the design, manufacture and distribution processes of individual products. It's an approach that enables us to attack costs at their source.

— At KPMG, we're focused on value. We use a variety of tools and methodologies to target and realize benefits and opportunities for ROI that can help offset the costs incurred in transforming your supply chain. KPMG professionals can create a transformation roadmap so you don't have to wait to see the value in upgrading your supply chain function.

— KPMG can provide the frameworks and analytics capabilities that enable you to distinguish between 'value eroding' and 'value contributing' complexity. We can help you develop an adaptable operating model with a bias for standard work that strikes an optimum balance between product variety and process complexity.

Our differentiators

KPMG Powered Enterprise | Supply Chain is an outcome-driven solution designed to help your organization address the key challenges in managing a complex, dynamic supply chain. Within it, the KPMG Target Operating Model can help you improve your supply chain function to better meet the demands of your organization, while helping to maximize efficiency gains both now and in the future. KPMG teams understand the human factors involved in business transformation. We can help inspire and empower your people to embrace change as you align your transformation with industry disruption. A pre-configured cloud solution, embedded with years of KPMG's leading practices and enhanced with automation, Powered Supply Chain helps you quickly transform and derive value from your move to the cloud.

What's in the box?

Powered Supply Chain provides a combination of leading practices and processes, tested technology solutions and a next-generation delivery framework. Adapted together with you, the pre-configured approach provides a fast-track towards value creation and benefits realization.

— The KPMG Target Operating Model shapes how transformation plays through every layer of your organization. Its breadth helps ensure that the transformation is business and function led, enabled by technology.

— KPMG Powered Execution Suite is an integrated platform of next-generation tools to help deliver functional transformation.

— KPMG Powered Evolution provides access to specialized resources that can drive continuing evolution.

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Designed by Evalueserve | Publication name: Future of supply chain — Micro supply chains | Publication number: 137649c-G | Publication date: September 2021