Supply Chain as a Service Converges Physical and Digital Supply Chain to Deliver Revenue

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By Analysts Michael Dominy

Initiatives: Supply Chain Strategy, Leadership and Governance

There is a range of SCaaS models, which drive revenue and require converging digital and physical supply chains. CSCOs responsible for supply chain strategy can use this research to explore the emerging SCaaS trend and identify potential opportunities to increase revenue or reduce costs.

Overview

Impacts

- Pressure to reduce costs and increase revenue is leading CSCOs and their functional leaders to investigate supply chain as a service (SCaaS) as a way to exploit available operational capacity.
- Cloud and newer digital technologies are enticing innovative organizations with advanced supply chain capabilities to explore SCaaS as a commercial opportunity.
- New business models are forcing some supply chain organizations to add SCaaS capabilities to their operating models, otherwise new solutions and value propositions will not profitably scale.

Recommendations

CSCOs responsible for supply chain strategy, leadership and governance should:

- Determine how much, where and what type of capacity can be marketed externally by integrating operational efficiency projections with demand forecasts and using cost and service benchmarks.
- Assess your supply chain capabilities and ask your IT partners about solution multitenancy and scalability to determine which processes can support supply chain requirements for multiple external organizations.
- Find out what digital offerings are planned by reaching out to R&D, sales and business leaders as part of your supply chain strategy and roadmap development process. Determine the nature of the projects and what will be required operationally across supply chain functions from a volume and time perspective.
Analysis

Supply chain as a service represents an opportunity for CSCOs and their organizations to optimize costs and grow revenue by developing existing capacity and capabilities that can be marketed and sold to manufacturers, retailers or other organizations needing to improve their supply chains.

There are three types or variants of supply chain as a service.

- **Contract Operations.** This involves using your operating assets such as warehouses, trucks or manufacturing sites to produce, deliver or service products for another company. In addition to established third-party providers such as contract manufacturers, branded manufacturers and retailers are exploring opportunities to commercialize operation capabilities and capacity by contracting with other brand owners.

- **Business Process as a Service (BPaaS).** This involves using people and technology to manage one or more supply chain functions for external third-party organizations. In addition to third-party providers such as BPO and BPaaS providers, branded manufacturers and retailers are exploring commercial opportunities associated with offering their capabilities in the market.

- **Digital Business.** This involves transforming the supply chain to support a new business model — especially those with an “as-a-service” sales and revenue model. To support these business models, the supply chain organization often needs to transform from physically moving material, parts and products to orchestrating data, people and digital flows across the value chain. Additionally, the forward or delivery-focused supply chain and after-market or postsale service and support processes need to be integrated and managed differently.

Table 1 describes the drivers and enablers associated with each type of SCaaS service. The table also includes the top recommendations aligned with each opportunity area.
Table 1: Opportunities and Top Recommendations for SCaaS Opportunities

<table>
<thead>
<tr>
<th>SCaaS Opportunities</th>
<th>Top Recommendations</th>
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<tbody>
<tr>
<td><strong>Contract Operations</strong></td>
<td>▪ Determine how much, where and what type of capacity will be available to market externally by integrating operational efficiency projections with demand forecasts.</td>
</tr>
<tr>
<td>Pressure to reduce costs and increase revenue is leading CSCOs and their functional leaders to investigate SCaaS as a way to exploit available operational capacity.</td>
<td>▪ Identify which products and functions are competitive by using cost-to-serve and benchmarking.</td>
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<tr>
<td>▪ Include 3PLs and contract manufacturing service providers in your competitive landscape analysis.</td>
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<tr>
<td><strong>BPaaS</strong></td>
<td>▪ Assess your supply chain planning, sourcing and transportation management capabilities using maturity models.</td>
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<tr>
<td>Cloud and newer digital technologies can enable innovative organizations with advanced supply chain business process management capabilities to pursue this type of SCaaS opportunity.</td>
<td>▪ Determine which processes and activities can technically support multiple external organizations by asking your IT partners about solution multitenancy and scalability.</td>
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<tr>
<td>▪ Establish a hybrid center of excellence and shared service supply chain operating model.</td>
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<tr>
<td><strong>Digital Business</strong></td>
<td>▪ Create customer experience journey maps that show physical, digital and data flows from order taking through delivery and postsale support using a team with.</td>
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<td>New business models are forcing some</td>
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Source: Gartner

**Impacts and Recommendations**

**Using SCaaS Can Help Commercialize Operational Capacity and Capability**

Companies whose primary business is selling their own branded products have an opportunity to offer SCaaS if they have excess capacity within physical operations. The extra capacity could be at manufacturing plants, warehouses, distribution centers or within other physical operations like transportation.

**Logistics**

Those with private fleets can leverage and expand backhauling capabilities — which are primarily used to reduce cost — to also deliver revenue. For many, backhauls are focused on reducing total transportation cost by using a private fleet to transport materials or products from suppliers on a return
trip following an outbound delivery. The truck from the fleet would transport the inbound supply to a warehouse or factory instead of paying a carrier or supplier to do it. The result was lower total landed cost, improved fleet utilization and reduced carbon emissions. The challenge is when outbound fulfillment and inbound supply networks don’t match perfectly, resulting in only a portion of trips returning from customer deliveries that can pick up supplier shipments on return trip.

Reduce costs further and gain revenue by going beyond opportunist backhauling within your supply network. Leading supply chain organizations with private fleets accomplish this in two ways:

- Participate in transportation spot market services
- Market directly to shippers

**Manufacturing**

Another example is commercializing excess manufacturing capacity by offering it to other brand owners such as retailers, manufacturers or product development organizations. The extra capacity would be positioned as manufacturing as a service (MaaS) within the broader SCaaS umbrella. The manufacturer produces the product based upon specifications that are provided by the contracting organization. An example of MaaS in the consumer goods industry is private-label manufacturing which has been around for decades, but fits the MaaS mold. Some consumer goods manufacturers use available capacity to produce a product for a retailer. The product specification may be slightly different than the manufacturer's branded product. At a minimum, the individual selling unit would use the retailer's branded packaging. For example, the box containing tissues or bag containing diapers would have a grocery retailer’s name and branding on it. Applying the principles and experience from consumer goods represents an opportunity for other manufacturers.

**Recommendations**

- Determine how much, where and what type of capacity will be available to market externally by integrating operational efficiency projections with demand forecasts.
- Identify which products and functions are competitive by using cost-to-serve and benchmarking to calculate the break-even price required if the excess capacity were to be offered in the market.
- Include 3PLs and contract manufacturing service providers in your competitive landscape analysis.

**Leverage Advanced Supply Chain Business Process Capabilities to Power Commercial SCaaS**

Companies with leading supply chain business processes expertise can sell their capabilities to a third party that is not a customer of their physical products. For example, using their demand planning application and planners to create forecasts and demand planners for an external third-party organization. A combination of predefined but configurable best practice processes, supply chain professionals and technologies enable the SCaaS offering.
This type of SCaaS excludes physical activities in operations such as manufacturing and logistics. Historically, this would be called supply chain BPO or SCM BPaaS. Although less pervasive in the market, many third-party service providers have offerings. This includes more traditional BPO providers that deliver customer, finance or procurement BPO. The 3PLs and external manufacturing service providers also offer services in this space. For example, transportation managed services is an example of SCM BPaaS.

Note: For this type of SCaaS, the provider is not the brand owner associated with products that are being planned and managed.

Recommendations

- To identify gaps and opportunities, assess your supply chain planning, sourcing and transportation management capabilities using maturity models.
- Evaluate which processes and activities can technically support multiple external organizations by asking your IT partners about solution multitenancy and scalability.
- Determine which processes are competitive by benchmarking your capabilities against existing supply chain service providers including 3PLs, contract manufacturers and BPO providers.
- Establish a hybrid center of excellence and shared service supply chain operating model. Building a completely separate organization to perform supply chain processes for external clients is not necessary, provided the CoE leader forecasts internal and external demand that must be supported by the supply chain organization.

SCaaS to Enable Digital Business Models

Digital business models blur physical and digital capabilities to enable new business models by connecting people, businesses and physical things such as assets, equipment or products. A “digital business” is an organization or a unit within an organization whose product set and business model are only made possible by the use of information and digital technology (see 4 Essential Definitions to Create Effective Digital Business Strategies).

Companies with digital business models have different supply chain requirements than those with typical product-centric business models. The scope of supply chain often expands from physical fulfillment to include digital fulfillment, service and support. The supply chain organization must monitor the location, performance and needs of the product or asset after it has been delivered or installed. Service must be orchestrated from a physical supply perspective for items such as parts, but also from a digital perspective for needs like software patches and upgrades. The result of the new or different requirements associated with the digital business model is blurring or blending of what was historically the forward or delivery supply chain with the service and support supply chain. The following are some of the key requirements that the supply chain must support for a digital business model.
Master data increases in scope and complexity. In addition to standard customer and item master data, digital elements such as software must be managed. Knowing all the physical and digital attributes of the product and where they are located is essential, as the company needs to ensure that the product performs as required by service agreement. Location data might need to become more granular and track where within a customer’s site the product resides.

Sales, order and receivables processes that support physical and digital order-to-cash processes with subscription billing.

Digital integration between the physical product or asset delivered to or installed at a customer location. Depending on the commercial agreement, constant data integration with the product within the customer’s site may be required.

Forecasting and planning physical and digital delivery plus ongoing service and support:

- Volume and timing digital and physical service demand to internal operations and external partners.
- Parts including your brand’s bill of material items but also third-party materials or products, such as batteries, that are needed for the product to function or required to track the consumption or use of the product.
- Personnel needed for initial delivery and ongoing support.
- Communication including the timing and frequency between you and the product to support uptime and performance requirements and deliver enhancements to the product, such as software upgrade.

Product and people initiated service requests and management integrated with the brand owner and third parties.

Predict demand for replacement parts and service by sensing attributes including asset performance or patient health data.

An example of a supply chain enabling a digital business model is a solution for improved management of vaccines.

**Vaccine as a Service**

A solution provider offering “vaccine as a service” ensures physicians never run out of vaccines. The solution involves IoT, cloud computing, inventory management, analytics, order management and payment processing. The solution provider delivers a validated refrigerator to the physician's office that will hold the vaccines. The initial stocking of vaccines is based upon the physician practice's history and the types of vaccine typically given by the practice. As the doctors dispense the vaccine, the IoT connect refrigerator records the inventory reduction and communicates the information to the solution provider. Once the inventory drops below a target level, the solution provider orders more inventory for the practice.
and has it delivered from the vaccine manufacturer to the physician's office. Through the SCaaS capabilities, the solution provider relieves the physician's office of inventory tracking and ordering. The solution also improves sales and fulfillment for the vaccine manufacturer. Rush orders are reduced.

**Recommendations**

- Find out what digital offerings are planned by reaching out to R&D, sales and business leaders as part of your supply chain strategy and roadmap development process. Determine the nature of the projects and what will be required operationally across supply chain functions from a volume and time perspective.

- Create customer experience journey maps that show physical, digital and data flows from order taking through delivery and postsale support. The most effective approach is to use a team with representatives from product development, IT, commercial, logistics, finance, and customer service or postsale support to identify the information, financial and physical flows.

- Create a responsible, accountable, consulted and informed (RACI) chart tied to the journey maps to identify new, additional or increased capabilities needed to support the digital business model.

- Identify sourcing and contracting requirements by comparing the RACI and journey maps with the established agreements with existing suppliers and third-party providers.

**Evidence**

Qualitative interviews with multiple companies and providers. Information gained through client inquiry calls. Briefings with service providers.

**Notes**

1 BPaaS is the delivery of business process outsourcing (BPO) services that are sourced from the cloud and constructed for multitenancy. Services are often automated, and provider staff support may still be required, but there is no overtly dedicated labor pool per client. The pricing models are consumption-based, subscription-based or outcome-based commercial terms. As a cloud service, the BPaaS model is typically accessed via internet-based technologies. It is used mostly for stand-alone service modules, not core applications.

A key element of BPaaS is the role of the provider in assuming full responsibility for the management of business processes and the associated business outcomes. This responsibility will be expressed in BPaaS contracts. BPaaS differs from other cloud services due to the focus on business outcomes. This is in contrast with cloud services such as SaaS, which have contracts that outline the providers’ responsibility to deliver application functionality but not business outcomes.

**Source**: Market Definitions and Methodology: Public Cloud Services

**Document Revision History**
Recommended by the Author

Manufacturing Operations Strategy and Performance Primer for 2020
Hype Cycle for Supply Chain Strategy, 2020
Leadership Vision for 2021: Chief Supply Chain Officer
Sustainable and Circular Supply Chain Evolution or Revolution

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