

# How to Adopt Circular Economy Practices (and Why It Matters)

A Strategic Guide for Aftermarket Services



# Introduction

## The traditional “take-make-waste” linear economy is no longer sustainable.

Consumers, governments, and industry are demanding more environmentally responsible products and services.

In the face of these environmental challenges and shifting market dynamics, Original Equipment Manufacturers (OEMs) are increasingly turning to the circular economy (CE).

Embracing this model is crucial for sustainability, improved resource efficiency, and maintaining competitiveness in a rapidly evolving market.

By rethinking how they design, manufacture, and service their products, OEMs can unlock a wide range of benefits—from reduced operating costs to new revenue streams and enhanced brand reputation.

This shift is not just a trend—it’s a strategic imperative for OEMs.

This white paper aims to give key decision-makers within the OEM landscape the knowledge and tools required to undertake this transformative journey towards embedding circular economy principles in their operations.

### It will explore the following core themes:

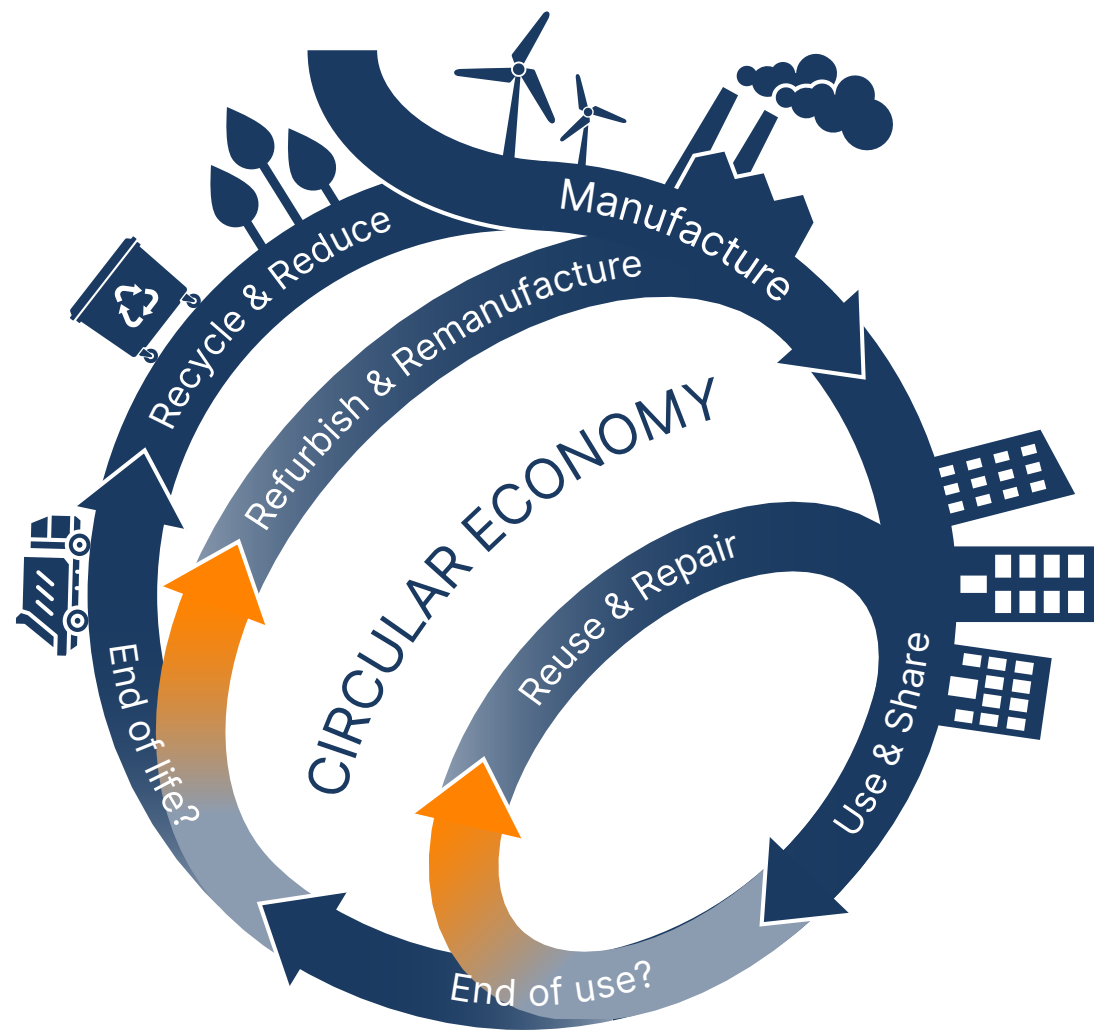
- 1) What is the circular economy?
- 2) Why does it matter to OEMs?
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# What is the circular economy?

The circular economy represents a transformative shift from the wasteful and environmentally destructive traditional linear economic model—“take, make, dispose”—to a sustainable “closed-loop” system where materials are continually repurposed.

This is designed to minimize waste, maximize resource efficiency, and create a more resilient and sustainable economic system.

At its core, the circular economy seeks to design out waste and pollution while keeping products and materials in use and regenerating natural systems. It encourages companies to rethink how products are designed, used, and handled at the end of their life cycle.



## Key principles

The circular economy extends far beyond waste reduction, including the following principles:



**Optimize utilization and extend product lifecycle:** repair, reuse, and recycle in order to maximize the utility and value of components and products.



**Capture value from returned products:** extract maximum value from existing products through refurbishment, remanufacturing, and resale.



**Design for circularity:** proactively designing products with circular economy principles in mind, such as using modular architectures and recyclable materials.

## Key drivers

There are a number of factors influencing this shift:



**Regulatory compliance:** increasingly stringent regulations require businesses to reduce waste and decrease environmental footprints.



**Consumer demand:** modern consumers demand sustainable products and are more likely to patronize companies with green credentials.



**Economic benefits:** circular practices can lead to significant cost reductions in materials and waste management.



**Innovation opportunities:** circular economy encourages innovation in product design and service offerings, opening new markets and business models.

# Why does it matter to OEMs?



The transition to a circular economy is not just an environmental imperative but also an economic and social opportunity. It offers the potential for substantial cost savings, innovation, job creation, and the development of new markets.

Embracing the circular economy can enhance competitiveness, build customer loyalty, overcome supply chain constraints while contributing to a more sustainable and equitable world.

As such, the circular economy represents a holistic approach to addressing some of the most pressing challenges of our time, offering a roadmap for sustainable growth and resilience in the face of finite resources and a changing global environment.

## Key benefits at a glance

- **Cost savings:** minimize waste, pollution, energy consumption; eliminate inefficiencies.
- **Revenue growth:** there is a growing market for refurbished and remanufactured products and parts, which often provide higher profit margins than raw materials.
- **Environmental sustainability:** CE practices can dramatically reduce OEMs' environmental footprint.
- **Brand enhancement:** circular economy initiatives allow OEMs to burnish their green credentials and appeal to environmentally-conscious customers.
- **Avoid regulatory fines:** adopting circular economy practices helps OEMs stay ahead of evolving regulatory requirements.

## Why OEMs are uniquely placed

OEMs are uniquely positioned to lead the transition to a circular economy.

As the original designers and manufacturers of the products, they have deep technical expertise, access to spare parts, and control over the entire product lifecycle. They can also leverage their position in the supply chain to foster sustainability and resilience.

### Circular supply chain management

Effective circular supply chain management emphasizes product longevity, ease of repair and maintenance, and the recycling or reuse of products and materials at the end of their lifecycle.

This shift allows OEMs to dramatically reduce their environmental footprint, cut costs on raw material

procurement and waste disposal, and cater to the rising consumer demand for sustainable products.

### Repairing defective parts

Consider defective parts being removed from machinery and sent back to a depot where they are inspected, repaired, and then reintegrated into the inventory as good, usable components.

This offsets the capital that would otherwise be spent on procuring new parts. Moreover, the newly repaired components can be priced strategically to reflect their value, enhancing the OEM's profitability while promoting sustainability.

### Sustainable manufacturing

OEMs are exploring innovative replenishment strategies, such as remanufacturing and refurbishing parts, to reduce the demand for new raw materials and decrease manufacturing's overall environmental impact.

These strategies not only contribute to sustainability but also offer cost advantages by maximizing the value extracted from materials and components throughout their lifecycle. Additionally, by adopting pricing models that reflect the lifecycle value of parts and incentivizing the return of end-of-life products, OEMs can further promote a circular economy.

OEMs are at the forefront of driving the transition to a circular economy through their sustainability efforts, particularly in circular supply chain management.

These efforts not only align with global sustainability goals but also offer competitive advantages by meeting the evolving demands of consumers and stakeholders for greener, more responsible production practices.

# Circular economy best practices



In navigating the transition towards a circular economy, OEMs confront a series of strategic decisions and trade-offs. The shift from linear to circular business practices necessitates a reevaluation of traditional priorities and investments.

There are several key areas where OEMs can significantly reduce CapEx in manufacturing while simultaneously advancing sustainability goals:

## 1) Reverse logistics and returns management

Establishing efficient reverse logistics processes is essential for capturing value from returned products.

The goal is to repurpose materials and components through reuse or recycling, significantly minimizing waste and the consumption of new raw materials.

A well-orchestrated returns management strategy enhances overall recovery rates by ensuring that a greater volume of returned products quickly and effectively reintegrate into the supply chain.

## 2) Spare parts management

Effective spare parts management ensures that high-quality, durable parts are available for repair and maintenance activities, reducing the need for product replacements and minimizing waste.

By optimizing spare parts inventory, OEMs can ensure timely repairs, improve product uptime, and enhance customer satisfaction. OEMs can simplify the repair process, reduce the variety of spare parts needed, and make the reuse and recycling of parts more feasible by designing products with standardization and modularity in mind.

## 3) Product/parts refurbishment & remanufacturing

This involves meticulously restoring parts as a compelling alternative to manufacturing entirely new goods. It not only conserves valuable resources but also carves out additional revenue avenues.

OEMs can access markets driven by cost considerations and a growing conscientiousness towards sustainability by offering refurbished products at reduced prices.

## 4) Depot repair

Depot repair services involve sending products to a centralized location for refurbishment or repair, which is essential for extending product life cycles and reducing the demand for new products.

By investing in depot repair capabilities, OEMs can reduce CapEx by minimizing the need for new production and lessening the environmental impact associated with manufacturing.

## 5 Dynamic pricing

Implementing dynamic pricing models can help OEMs maximize the value recovered from returned and refurbished products by using data-driven pricing, flexible pricing structures, and continuous optimization of dynamic pricing.

Using advanced analytics to price products based on factors like condition, age, and demand ensures OEMs can optimize the balance between sales volumes and profit margins. Flexible pricing approaches that can rapidly adapt to market fluctuations allow OEMs to stay agile and capitalize on changing dynamics.

“A differentiated commercial engine focused on just a few digital and analytics levers can more than double aftermarket revenues for industrial companies.”

McKinsey

## Conclusion: balancing priorities and investments

The transition to circular economy practices requires OEMs to carefully balance their priorities and investments.

On one hand, the upfront costs associated with setting up systems for returns management, depot repair, and product refurbishment can be substantial. On the other hand, the long-term benefits—reduced raw material costs, lower waste disposal fees, and new revenue opportunities—present compelling reasons to pursue these circular practices.

OEMs must consider the growing consumer demand for sustainable products and the regulatory environment increasingly favoring circular economy principles.

By embracing best practices, OEMs can position themselves as leaders in sustainability while also achieving significant financial and operational efficiencies.

4

# How to leverage software solutions

For businesses looking to implement circular economy principles, effective technology solutions are critical.

Technology platforms help businesses move towards more sustainable manufacturing practices by improving the management of resources and reducing waste. They also offer a pathway to reducing environmental impact, lowering operational costs and enhancing overall profitability.

Aftermarket solutions, in particular, are relevant to OEMs. There is huge potential to maximize the lifetime value of parts and components while simultaneously generating new, high-margin revenue streams.

## What are aftermarket software solutions?

Aftermarket software solutions are technologies designed to facilitate various aftermarket activities such as inventory management, service and warranty management, asset tracking, product/part dispatching, and service/maintenance scheduling.

In general, they consist of three pillars:

- **Data consolidation:** collate and assemble data from across your entire business detailing things like inventory (amount, quality, location etc.), service agreements/warranties (length, SLAs etc.), orders (customer location, scheduling, field engineer availability etc.).
- **Data-driven analytics:** leverage AI and ML to join the dots between your data sets, highlighting opportunities for optimization, dynamically adjusting pricing.
- **Automated workflows:** this is where the work is delivered, automate the sending of parts, rightsizing service agreements and pricing, and the scheduling of maintenance and field engineer availability.

OEMs can make substantial cost savings and operational enhancements while playing a crucial role in the shift towards more sustainable, circular economy-centric business models by adopting aftermarket software platforms.

## Where are OEMs struggling?

Currently, managing complex aftersales activities is cumbersome for most OEMs.

Typically, aftermarket technologies have been implemented by individual functions, resulting in a disparate set of tools used by different teams that are disconnected, unable to share data with each other, and unable to complement each other.

As a result, they struggle to quickly and effectively manage inventories, track assets, and effectively dispatch parts and schedule maintenance, leading to excess waste and inefficiency.

The result for the customer is unexpected downtime, delays, and reduced part/service availability.

When tools, teams, and data are fragmented, you end up with a fragmented supply chain:

- **Siloed and disconnected teams:** different teams are incentivized differently (e.g. sales are selling contracts that service teams can't fulfil).
- **Siloed datasets:** if you can't share your data between teams or cross-reference key datasets (e.g. inventory, pricing, customer profile), that creates a huge amount of manual busywork to pull it all together.
- **No single source of truth:** people don't know what data they can trust and so they waste time on a wild goose chase hunting down the most up-to-date spreadsheets.
- **Costly duplicated or redundant functionality:** costs can spiral as too many expensive applications with overlapping functionality are needed to get a workflow up and running.

## Why integrated software solutions are key

In the face of this fragmentation, one solution is to integrate the various functions under one roof.

The key advantage of centralizing these solutions on a single platform lies in the ability to seamlessly leverage data across the entire return and repair workflow.

This holistic view not only streamlines processes but also unlocks deeper insights into operational dynamics, helping OEMs make informed decisions that further their commitment to circular economic principles and drive enhanced sustainability across their operations.

When you bring the various pillars and tools together under one roof, the synergistic benefits drive massive opportunities:

- **Single source of truth:** when there is one system, your people can trust that the data they're accessing is up-to-date.
- **Single view of the customer:** integrate customer data into a single 360° view.
- **Derive business insights:** unlock insights into how value flows through your business and where the blocks/opportunities are.
- **Outstanding customer experience:** enable seamless e-commerce storefronts end-to-end.
- **Sustainability:** minimize waste, optimize resource utilization, and maximize lifetime value of parts and components.



## Real-life examples of the circular economy

Let's explore some real-life examples of leveraging integrated aftermarket software into the circular economy best practices listed in the previous chapter.

### 1 Reverse logistics and returns management

Software systems can streamline the flow of returned products back to manufacturers or refurbishment centers and automate the entire process from order processing to customer communication.

#### Features:

- Quickly redirect products toward refurbishment, recycling, or redistribution
- Rapidly reintegrate valuable components back into the supply
- Prevent inventory hoarding by technicians (obstructing access to parts)
- Mitigate safety risks associated with large inventories

#### Benefits:

- Recover significant value from returned products
- Reduce operational inefficiencies
- Reduce waste and optimize resource use
- Enhance the customer experience

### 2 Spare parts management

These systems integrate with your sales platforms and stock inventories in real-time, leveraging data analytics and predictive modeling to forecast demand for parts and optimize inventory levels by minimizing stockouts and avoiding surplus inventory.

The result is reduced storage costs, increased responsiveness to customer needs, and elevated service quality.

#### Features:

- Optimize inventory levels in real-time
- Reduce stockouts and excess inventory

#### Benefits:

- Lowers storage costs
- Enhances service quality
- Greater responsiveness to customer needs

### 3 Product/parts refurbishment & remanufacturing

These systems excel at identifying when refurbished or remanufactured parts can be utilized. They manage the restocking of parts—promoting the refurbished parts—based on inventory levels, demand forecasts, and procurement timelines, reducing the reliance on new part production.

#### Features:

- Identify potential refurbished/remanufactured parts
- Forecast demand
- Automate restocking, promoting

#### Benefits:

- Minimizes reliance on new part production
- Balances supply and demand
- Promotes principles of the circular economy

### 4 Depot repair management software

This software streamlines the repair process for returned or faulty products. From receiving the item to completing repairs and preparing it for dispatch, it facilitates workflow management, technician scheduling, parts usage tracking, and maintaining repair history records.

This extends the lifespan of products but also minimizes waste and boosts customer satisfaction by improving service turnaround times.

#### Features:

- Workflow management
- Technician scheduling
- Parts usage tracking
- Repair history tracking

#### Benefits:

- Reduce reliance on new parts
- Extend product lifespan
- Enhance efficiency and minimize waste
- Improve customer satisfaction



## 5 Dynamic pricing software

Devise pricing strategies that reflect the true value of refurbished parts, considering factors such as demand, condition, and market competitiveness in order to maximize ROI, encourage the adoption of sustainable products, and ensure the economic viability of circular practices.

### Features:

- Considers market dynamics
- Optimizes pricing for ROI and sustainability

### Benefits:

- Maximize ROI
- Encourage sustainable products
- Ensure economic viability of CE practices



## Business benefits of aftermarket software

These platforms bridge the gap between economic objectives and environmental responsibilities, enabling OEMs to navigate the transition to circular economy practices effectively.



### 1. Capital expenditure reduction:

Unified platforms enhance spare parts management and depot repair strategies, reducing capital expenditures and freeing up resources for further innovation and growth.



### 2. Revenue generation from refurbished parts:

Through dynamic pricing capabilities, OEMs can accurately set prices for refurbished parts, tapping into new revenue streams and improving overall profitability.



### 3. Operational efficiency:

Streamlining various aspects of after-sales service operations (e.g. inventory management) reduces waste, optimizes resource utilization, and enhances service delivery times.



### 4. Waste reduction:

Facilitate efficient spare parts management and promote the refurbishment and recycling of products, contributing to significant waste reduction.



### 5. Sustainability enhancement:

Prolonging the lifespan of products through improved repair and refurbishment practices and optimizing resource use helps to lower carbon footprints and hit sustainability targets.

# Roadmap to the circular economy

This section offers a roadmap for implementing CE practices into OEM operations.

This roadmap not only focuses on waste reduction and environmental impact but also highlights the positive effects on profitability, offering OEMs a blueprint for sustainable and profitable operations.

## 1 Reverse logistics/returns management

### Efficient returns process:

- Develop a streamlined process for the return of products at the end of their lifecycle or for refurbishment.
- Utilize software that facilitates easy returns for customers (that supports sorting, assessment and appropriate redirection of returned items).

### Logistics optimization:

- Optimize your reverse logistics network to ensure the cost-effective and environmentally friendly return of products. Leverage data analytics to improve the returns process, inform product design improvements and reduce future returns.

## 2 Spare parts management

### Strategic inventory optimization:

- Conduct a critical analysis of spare parts inventory to identify inefficiencies and opportunities for optimization.
- Implement an inventory management system that employs predictive analytics to accurately forecast demand.

### Promotion of refurbished parts:

- Encourage the use of refurbished parts wherever possible.
- Ensure that your inventory system can seamlessly integrate and track both new and refurbished parts.

## 3 Depot repair

### Centralization and optimization:

- Establish or optimize depot repair facilities to centralize the refurbishment and repair of products. Train staff on sustainable repair practices to ensure high-quality outcomes.

### Software integration:

- Use depot repair management software to streamline operations, from receiving returned items to processing repairs and managing inventory.

## 4 Dynamic pricing for spare and refurbished parts

### Implementation of pricing software:

- Dynamically price spare and refurbished parts to reflect the condition, demand, and rarity of parts, making refurbished parts more attractive while ensuring profitability.

### Transparent communication:

- Clearly communicate the value and sustainability benefits of refurbished parts to customers, supporting CE principles and enhancing customer satisfaction.

# How to implement CE principles

Here are a few core ideas for how you can change how you work at the structural level in order to facilitate the implementation of CE principles.

## 1) Integrate engineering and service departments

Breaking down silos between engineering and aftermarket service teams is crucial for effective circular economy implementation, ensuring that products are not only designed for durability and easy repair but also align with the service teams' capabilities to facilitate efficient recycling and refurbishment.

By aligning engineering and service personnel, OEMs can design products with circularity in mind from the very beginning. This includes considerations like modular architectures, use of recyclable materials, and standardized fasteners to facilitate repair, refurbishment, and disassembly.

## 2) Design to facilitate recycling and refurbishment

Proactive product design with the circular economy in mind can significantly improve the feasibility and economics of refurbishment, remanufacturing, and recycling.

This could include practices like modular product architectures, using recyclable materials, or incorporating standardized components.

## 3) Leverage the value of your data

Data is the new oil that lubricates the cogs of the circular economy. It's important to stop treating your data like a technical liability to be managed and more like a valuable resource to be developed.

Improve your data governance to allow for trustworthy, high-quality, highly accessible data to empower your teams and tools. Consider federated data architectures such as the data mesh that facilitate the rapid democratization of data across the organization.

# What is Synchron CSX?

At Synchron, we can help you embrace servitization and embed service into your equipment lifecycles to turn complex challenges into competitive differentiators.

## Synchron CSX

The Synchron Connected Service Experience (CSX) Cloud is an AI and ML platform that helps manufacturers and service organizations transform their approach to service lifecycle management from beginning to end.

This helps our customers to drive better aftermarket business growth, evolve customer experiences, and enable intelligent service.

The platform fuses advanced data approaches to transform aftermarket and OEM aftersales services and redefine what is possible across planning, pricing, and servicing:

### Planning:

- Advanced demand planning with ML-based forecasting
- End-to-end aftermarket operations visibility

### Pricing:

- B2B price optimization with AI price tiering
- Understand customer reactions to different prices

### Servicing:

- AI-enabled warranty management prevent claims fraud
- Integrated AI workflows

Help OEMs/distributors **execute front-line service events** needed to fulfill a service organization commitment and customer loyalty.

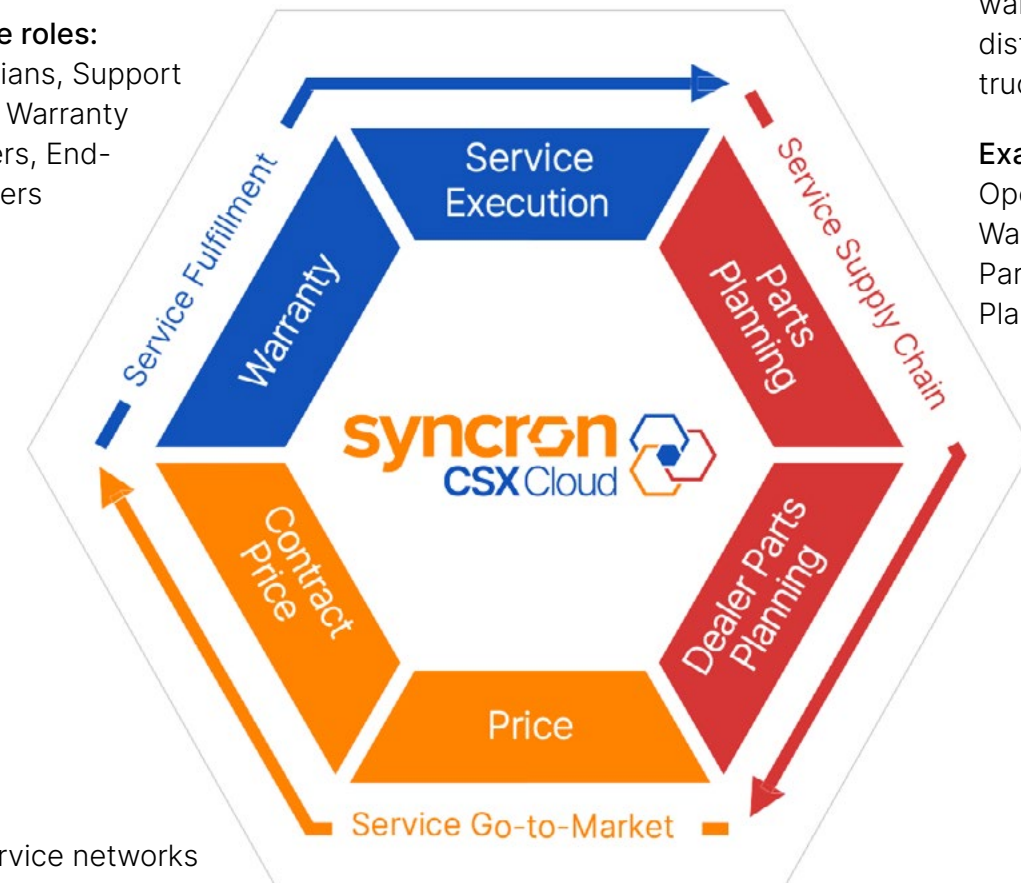
#### Example roles:

Technicians, Support Agents, Warranty Managers, End-Customers

Help OEMs/distributor service network **optimize all parts needed to operate service functions effectively and efficiently** from OEM warehouses via dealers/distributors to service truck level.

#### Example roles:

Operational Managers, Warehouse Managers, Parts Supply Chain Planners



Help service networks **optimize commercials** around parts and service contract prices.

#### Example roles:

Sales, Price Specialists

# Conclusion

## For OEMs, the moment to embrace circular economy practices is now.

You are being called upon to lead the charge in adopting circular economy practices, utilizing advanced technologies to achieve sustainable manufacturing success. This journey demands a collective effort, underscoring the need for commitment, collaboration, and innovation at all organizational levels.

By prioritizing these circular economy strategies, OEMs can drive significant change and contribute to a more sustainable, profitable, and resilient future.



## About Synchron

Synchron accelerates leading manufacturers and distributors to capitalize on the world's new service economy. We optimize aftermarket business profitability and working capital, increase customer loyalty, and enable our customers to transition successfully to future service-driven business models.

Synchron connects and synchronizes every aspect of aftermarket service with more than \$3 billion in annual value creation across OEMs and distributors in automotive, construction, mining, agriculture and industrial equipment, medical devices, consumer durables, high-tech, aerospace, and other industries. Our Connected Service Experience

(CSX) cloud platform offers leading aftermarket sales and service solutions to effectively plan, price, and service your customers. CSX Cloud offers our customers competitive differentiation through exceptional aftermarket service experiences while driving significant revenue and profit improvements into a manufacturer or distributor's business. The world's top brands trust Synchron, making it the largest privately-owned global leader in intelligent service lifecycle management SaaS solutions.

For more information, visit [synchron.com](https://synchron.com)



## About Blumberg Advisory Group

Blumberg Advisory Group, Inc. is a leading research and consulting firm in the Aftermarket Service Industry and a pioneer in helping companies manage service as a strategic profit center. Blumberg is uniquely qualified to position its clients strategically to meet current challenges and new growth opportunities through their relationships and experience. Blumberg works to improve its clients' profits through strategic service, assisting in developing and implementing profitable business strategies based on the principle that service is managed best as a separate, strategic, and profitable business.

For more information, visit [www.blumbergadvisor.com](https://www.blumbergadvisor.com)



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CO<sub>2</sub>

Lifespan

Efficiency

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ITEM 1

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ITEM 2

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ITEM 3

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