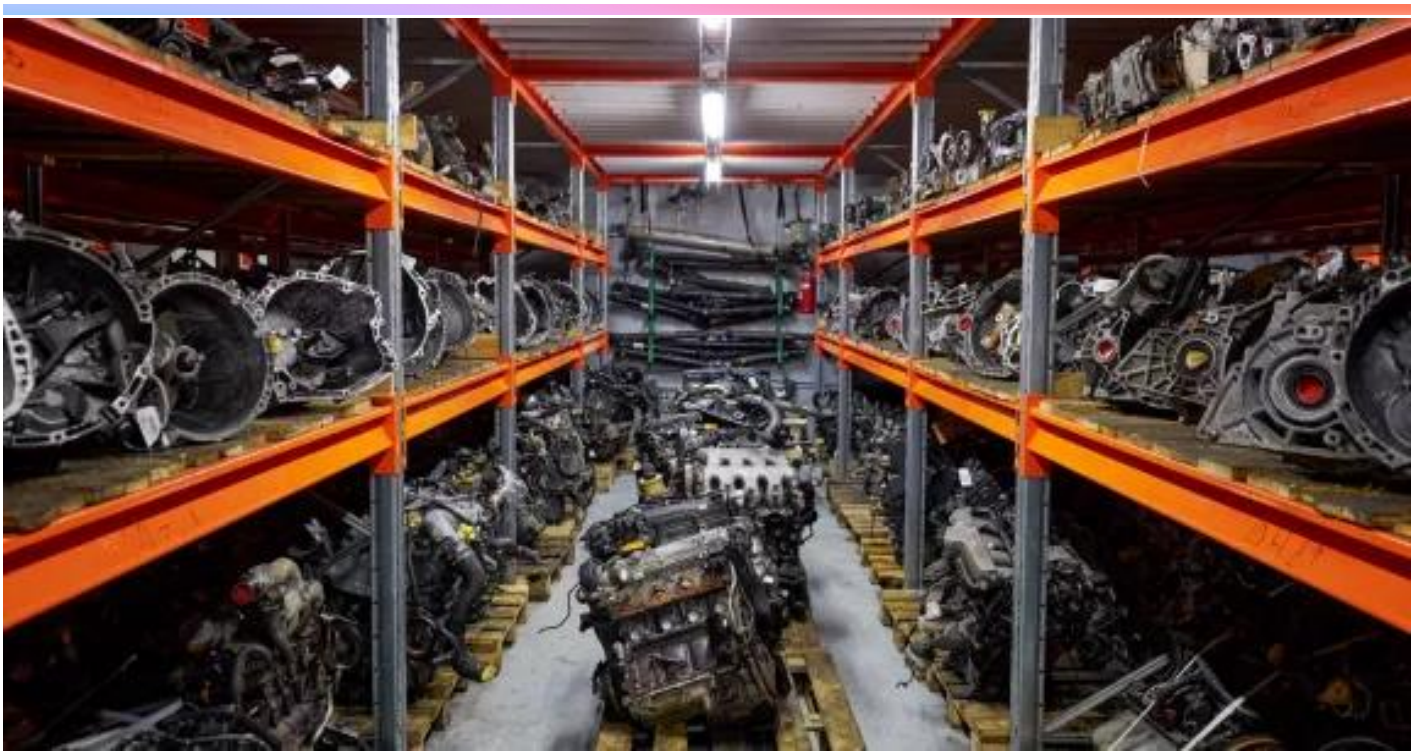


Efficient return logistics will make or break your circular business case

23 October 2018, 12:19

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If you want to reuse and redistribute used or defective products and parts – with or without refurbishment or remanufacturing – or if you want to recycle them, they first need to find their way back to you from the end user. Setting up an efficient reverse logistics system is important for coming up with a positive business case for your circular business strategy.

We provide a few pointers for thinking about how to organise your return logistics profitably.

The starting point is residual value

Clearly, the residual value of the goods to be transported will determine how you organise the return logistics.

- For complex products with high residual value, such as large production machinery or medical equipment, it is economically justifiable to have them returned one-to-one directly from customer to producer by a specialised logistics partner.
- For products with lower residual value, there is often a ‘many-to-one’ relationship (customers/distributors to supplier/processor). One-to-one transport is too expensive in this context: return flows need to be bundled together as much as possible.

The residual value of the discarded products to be transported, in combination with the transport cost, also determines the radius within which return logistics are profitable. For example, recyclers often confine themselves to waste and secondary flows within a radius of around 250 to 300 km.

Return logistics as part of integrated customer service

When an effort is being made to optimise the entire service offering, this puts return logistics in a different perspective. Link return logistics to activities that improve what you can offer to the customer and that generate value. For example, combine the recovery of discarded or broken devices/parts with their direct replacement.

If you make the customer's needs the starting point, the possibility of additional or completely new business activities may also arise.

Contraload, located in Aartselaar, Antwerp, is an example of this. As well as selling and renting out load carriers such as pallets and containers, the business also focuses on pooling and sharing them. The customer always has the right number of good-quality load carriers at the right time, without any investment costs. The load carriers are reused after inspection, cleaning and, if necessary, repair. Delivery and collection are optimised and a higher usage intensity is achieved through economies of scale. Load carriers are tracked throughout Europe and delivered as locally as possible to limit the number of kilometres driven. At Contraload, return logistics is an inseparable part of the service provided to customers.

To put it another way, return logistics don't have to be profitable in themselves, but obviously the overall service provided must be.

Integrating forward and reverse logistics

Check whether it's possible to use the logistics network with which the sold product is transported from your production site to the end user to collect used goods. The delivery of new items of furniture such as desks, hospital beds or school furniture is often combined with the collection of the old items, allowing the customer to switch from old to new in a single operation.

Another example is Agfa Gevaert, a specialist in imaging and IT systems, which operates a 'milk run' in which new printing plates are delivered to printers and the used plates are taken back at the same time.

Optimising the first mile of return logistics

Work out what steps you can take to optimise the 'many-to-one' relationship.

- Can the 'first return mile' be taken care of by the customer or user, with the returning of a product by the customer being made as easy as possible?
- Are there existing specific or collective return systems that might also be able to collect your discarded products?
- Can regional collection centres be set up to take care of the first return mile?

These are various approaches to reducing the complexity and cost of the first return mile. At the same time, return flows will be bundled, which optimises further reverse logistics through economies of scale.

Certain IKEA stores have programmes for taking back old furniture. Customers who no longer want IKEA products that are still in good condition can return them to the store, which then focuses on 'upcycling' the furniture and selling it second-hand. Customers who return used furniture are rewarded with a voucher. What about if the customer doesn't have a car to return items to the store? Some stores enter into local partnerships and offer customers free use of a vehicle for a number of hours in order to return an old product.

***AW Europe** remanufactures automatic transmissions from a large number of car part manufacturers (OEMs). The OEMs have their own local collection centres that are set up close to the geographical distribution areas of their products (markets). Depending on the demand for 'reman' transmissions from their customers, these brands send in old transmissions to AW Europe. It's therefore the manufacturer (OEM) that pays for and optimises the return logistics.*

Decentralised processing close to the end user

Is it always necessary for products or parts to return to the place where they were originally manufactured? Or can you organise the repair, remanufacturing or sorting and recycling activities relating to the returned products or parts at locations closer to the end users? Inspection and disassembly, for example, can often be organised profitably on a decentralised basis in smaller workshops, which don't require extensive infrastructure or large processing volumes.

***Cisco** repairs returned products and stores the repaired products. Customers receive a replacement unit, typically within 24 hours, and can return their defective product in the box in which they received the replacement unit. Cisco has 15 large repair sites worldwide, which in turn feed a network of 1,300 depots with parts. This ensures that stock is available close to where customers are located.*

However, many recycling processes require large investments and are therefore typically organised at more central locations. In such cases, it can be a good idea to minimise the transport distance of the recycled material back to production.

To reduce the carbon footprint of Plastipak a preform production facility was built on the same site as the PET recycling plant. This allows recycled PET ('rPET') to be processed directly from the recycling plant into PET preforms and bottles. In 2012, a joint venture with Coca-Cola Enterprises was announced to further expand the recycling plant's capacity to 48,000 tonnes of food-grade rPET per year, making the closed-loop bottle-to-bottle plant the largest producer of recycled PET products in Europe.

The support role of digital technology

Digital technology can tell you exactly where used, discarded or pooled products are located. One example is the trackers that can pinpoint the location of a specific item, for example by using a combination of Wi-Fi, GPS and transmitter tower locations. In order to share products easily with different users, it's important to be able to locate them quickly. Knowledge of the location makes it possible to keep track of where products or components are located in the installed base and to plan the servicing of products as efficiently as possible. Tracing products also allows return logistics to be optimised when products are at the end of their first commercial life, with a view to possible reuse by another customer or recycling. The return logistics kilometres that are saved often cover the investment cost of sensor set-up and smart data monitoring.

*For example, the **SolarStreetBin** from Irish company PEL is a system of smart waste containers that indicate when they need to be emptied. The filling level can be measured remotely using sensors and communicated wirelessly. As a result, collection no longer takes place at fixed times such as every two weeks regardless of whether a container is full or not, but only when it is really necessary.*

Spaghetti as the first step

Identify the material and product flows, financial movements, circular activities (maintenance, inspection, remanufacturing, etc.) and parties that carry them out, and transport and storage. Based on an ecosystem visualisation of this kind – a spaghetti diagram – organisations and activities can be grouped in terms of expertise, geography or other factors. You can then think about how to optimise the logistics and the partnerships that might be useful in this context. Does it make sense to provide local hubs for take-back or to deploy local service teams? If so, where? What is the most efficient collection round? How should the collection and delivery of pooled products be organised: on a central or decentralised basis? And so on.

Mathias Fahy of Möbius Business Redesign, an expert in supply chain management and sustainability, sums it up as follows:

Pioneers in the circular economy identify return logistics as one of the four fundamental building blocks of a working circular model – along with business model, product design and collaboration. Many organisations have already mastered ‘regular’, forward logistics – but this is often not the case for return logistics.

- The cost and effort associated with return logistics (and operations) are in many cases underestimated when implementing a circular model. They are in fact often the ‘make or break’ factor in the business case.
- The ‘last mile’ is replaced by the ‘first mile’ – which accounts for 40 to 70 percent of the return logistics cost.
- Looking for scale and scope effects (collaboration in the chain) can lead to enormous cost reductions.

(Source photo at top: https://www.dreamstime.com/)

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