

# ICT Remanufacturing in the European B2B market

Questions + Answers

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Global ICT »Original Equipment Manufacturers« (OEMs) are actively engaged in the effective reuse of ICT products in the Business-to-Business sector. This includes manufacturers of computing equipment, printers, networking and communications products. They see remanufacturing and resale of such products as part of their core activities and an important contribution to a circular economy.

### What are remanufactured ICT products?

A remanufactured ICT product is a previously used product that was brought back to at least its original manufactured state, in an at least »as-new« condition both cosmetically and functionally. Fully remanufactured equipment is backed by the same warranty, maintenance and support options as the equivalent new product. These high quality ICT products, remanufactured by OEMs to OEM standards, are sold directly by OEMs' sales specialists or indirectly through their normal or specialised distribution channels.

#### Remanufacturing

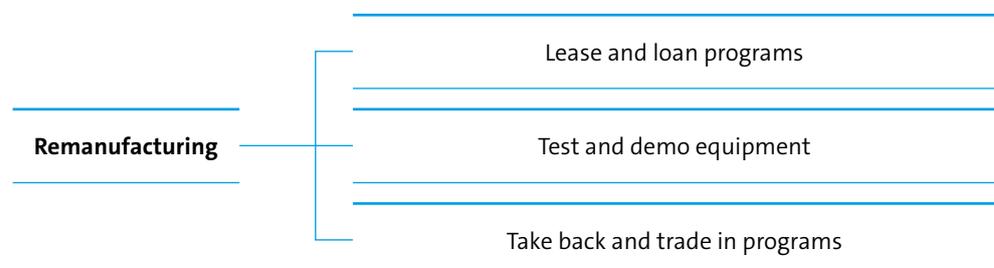
Return a used product to at least its original performance with a warranty that is equivalent or better than of the newly manufactured product. (BS8887-2:2009)

The most relevant standard in this field, BSI Standard BS 8887-2:2009, defines a range of end-of-life options, such as remanufacturing.

### How does remanufacturing work in the ICT B2B sector?

ICT products flow back from various sources of returns (B2B) into the remanufacturing process.

Sources include:



In the remanufacturing process they are assessed, inspected, disassembled, rebuilt and tested to the level of »as good as new« before they enter a second productive lifecycle. Remanufacturing operations in the ICT sector typically require higher skilled employees than traditional new product manufacturing.

The remanufacturing process can be described by the following steps:



## Why is it important?

The advantage for the end user is to both make a contribution towards sustainability and eco-responsibility, and at the same time to obtain a level of product performance at a lower investment level, combined with the assurance that the product is of highest quality. The product has been properly prepared and accurately presented for resale by the original manufacturer or its appointed agents.

## What are positive impacts of this business model?

Remanufacturing is circular economy in best practice, prolonging the life and value of a product for as long as possible before finally recycling. By extending the use of a system, or by developing a second or subsequent lifecycle of use through a level of rework or improvement, the demand on new raw materials is reduced. This contribution towards sustainability is a responsibility of both manufacturers and users of products, as the supply of raw materials is not unlimited.

### Environmental benefits

#### Remanufacturing

- ...makes the best use of the resources (material, energy, labour) that have gone into production of a product.
- ...provides options other than just recycling back to raw materials
- ...helps to extend the useful life of products
- ...helps to influence the consumption-based society
- ...helps to save CO2 emissions. For example, between 2003 and 2009, CO2 savings from re-use of remanufactured products (across sectors) increased 10 fold.<sup>1</sup>

### Economic benefits

#### Remanufacturing

- ...provides a further commercial lifecycle for used equipment
- ...supports the business of older IT infrastructure buy-back
- ...maintains a supply of high quality »older« products that enables customers to transition to new technology in a timeframe that suits them
- ...provides local jobs in remanufacturing sites across Europe
- ...provides same or better warranty as new products

<sup>1</sup> source: Remanufacturing in the UK – a snapshot of the UK remanufacturing industry, Centre for Remanufacturing and Reuse, 2010

## Since when?

Remanufacturing is not a new fad. Remanufacturing activities within the ICT industry started over 30 years ago.

## What's the size of the industry?

The product remanufacturing industry in the ICT sector exists worldwide and is quite substantial in Europe. The ICT remanufacturing sector (including printer cartridges) represents a turnover of \$6,900million in the EU, compared to »only« \$2,700 million in the US.<sup>2</sup>

## Where is remanufacturing happening in Europe?

Companies have invested in improved B2B remanufacturing facilities across Europe. Dedicated facilities and operation processes ensure optimum remanufacturing, either at system or component level. It not only helps them manage supply and demand but also creates local jobs.

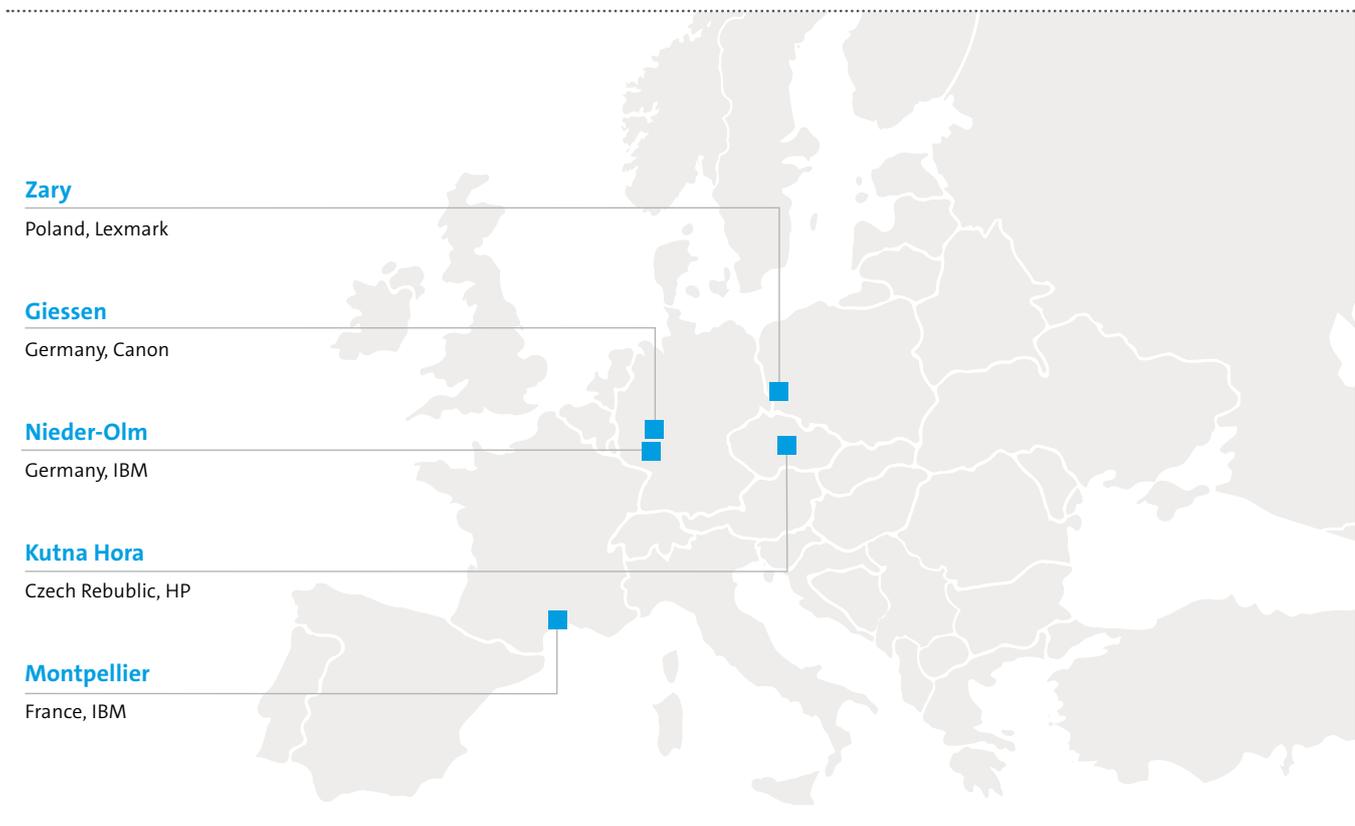


Figure 1 – Examples of remanufacturing facilities in Europe

<sup>2</sup> source: Circular Economy Evidence Building Programme, <http://www.zerowastescotland.org.uk/sites/files/zws/Remanufacturing%20Study%20-%20Summary%20Report%20-%20March%202015.pdf>, page 6

## **Is there a standard in place for remanufacturing?**

As a foundation for improvement in the sector, Bitkom has contributed to British Standard BSI 8887 (Part 211, published 2012) which defines the categories in which an ICT used product may be sold again into the market. This provides clarity as to the differences between a product that is just reused without any form of remedial work, to that which has been repaired, refurbished or reconditioned, or completely remanufactured. It also provides a code of practice for manufacturers, appointed agents, or independent suppliers who place used IT products back on the market for resale.

The BSI standard established accurate definitions to guide the end user customer as they make their choices in IT investment.

## **What is Bitkom's Product Reuse European Working Group?**

The Product Reuse European Working Group within Bitkom is a representative body of global ICT product manufacturers that are all actively engaged in the remanufacturing and resale of products from the B2B sector as part of their core activities. This includes manufacturers of computing equipment, printers, networking and communications products.

The group has an objective to develop the market acceptance for remanufactured ICT products, by bringing greater choice to the customer and establishing standards for the various categories of used products. Developing the market for IT product reuse will be achieved through a combination of customer understanding and trust, supported by greater consistency in remanufactured product standards.

Members include major ICT companies such Canon, Cisco, HP, IBM, Lexmark, Ricoh.

## What are best practices and examples?

Some examples and best practices include the following remanufacturing and recycling programs driven by the major ICT companies in Europe:

Cisco Refresh	
<b>Program</b>	<p>Cisco employs the industry's most comprehensive and proprietary remanufacturing processes. From initial inspection and testing to cleaning and packing, only Cisco – the original manufacturer – can truly remanufacture to the same level that we do.</p> <p>Leveraging the circular economy, Cisco Refresh products are sourced from Cisco's reverse logistics. From a manufacturing perspective, their products have a low carbon footprint and are fully sustainable.</p>
<b>Products</b>	Cisco routers, switches, optical, wireless, network modules, port adapters, voice, etc.
HP Renew	
<b>Program</b>	<p>HP Renew products undergo a comprehensive HP remanufacturing process, ensuring they are fully restored to meet HP certified standards. To qualify for full HP warranty, all HP Renew products must pass the rigorous tests and verification processes—your guarantee that all HP Renew products are as good as new.</p> <p>HP Product Return &amp; Recycling: In 2014 more than 39,100 tonnes of returned hardware was re-used and 18,400 tonnes of supplies was responsibly recycled. Responsible recycling includes the use of returned materials in new products. Eg. The use of »closed loop« recycled plastic in inkjet and laser cartridges. HP helps its customers recycle responsibly, having recovered 1.39 million tonnes of products since 1987.<sup>3</sup></p>
<b>Products</b>	HP Servers, Storage and Networking Solutions as well as Notebooks and Desktop PCs. At any one time there are more than 100,000 remanufactured products available for re-sale.
IBM Certified Pre-Owned Equipment (ICPE)	
<b>Program</b>	<p>Every current and prior level technology system has been checked by an IBM Engineer (or qualified agent) to validate its configuration before being packed securely ready for sale. Systems have undergone a full remanufacturing and testing in accordance to IBM manufacturing standards.</p> <p>Over 90% of all IT equipment returned at end-of-product life are readied for remanufacture and reuse, while the remaining is harvested for parts or sold for recycling, leaving less than 0.5% for landfill.</p>
<b>Products</b>	IBM Servers, Storage, PC and Intel-based servers, Printers and Networking

<sup>3</sup> source: HP 2014 Living Progress Report, <http://www8.hp.com/h20195/v2/GetDocument.aspx?docname=c04152740>

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**Lexmark Collection and Recycling Program (LCCP & LECRP)**

<b>Program</b>	<p>Customers returned more than 1 out of 3 toner cartridges, far exceeding industry averages. LCCP follows a zero landfill and incineration policy, ensuring that all the empty cartridges returned from customers are reused or recycled to their greatest environmental benefit. In 2014, approximately 34 percent of the cartridge materials by weight returned to Lexmark were reused. Lexmark has established a goal to increase this to 50 percent by 2018.</p> <p>The Lexmark toner cartridge product line contains, on average, an industry-leading 12% by weight of post-consumer recycled (PCR) plastic content, partially provided through LCCP. PCR plastic has been implemented across 92% of the toner cartridges that Lexmark sells. In some models, the PCR plastic content is already up to 28%. By 2018, Lexmark's goal is to average 25% PCR plastic content across the entire toner cartridge product line.</p>
<b>Products</b>	Cartridges and other supplies, printers and multifunction devices

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**Ricoh GreenLine**

<b>Program</b>	<p>Each GreenLine product is stripped, cleaned and checked, worn components are replaced and the hard disc drive is sanitised. The product is then re-assembled and thoroughly tested before shipping. The GreenLine processes are governed by ISO14001 and ISO 9001 management systems.</p> <p>Copiers and printers returning from Ricoh's leasing programme are inspected, dismantled, and go through an extensive renewal process — including key components replacement and software update — before re-entering the market under the GreenLine label with the same warranty scheme that is applied to new devices.</p>
<b>Products</b>	<p>Production printers, multifunctional printers, toner cartridges</p> <ul style="list-style-type: none"> <li>• Production printers: New Business approx 100 Units / Year but expect large growth</li> <li>• Multifunctional printers: Approx 10,000 Units / Year</li> <li>• Printer cartridges: &gt;500,000 cartridges / Year</li> </ul>

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**Canon Factory Produced New Models (FPNM)**

<b>Program</b>	Devices are returned to their factory in Germany at end of lease to undergo a strict cleaning, testing and quality assurance process. This ensures the device is as good as new, effectively doubling its lifetime and guaranteeing the same quality and performance as the original machine.
<b>Products</b>	<p>Office multifunctional devices; production printers; toner cartridges</p> <ul style="list-style-type: none"> <li>• Multifunctional devices: Approx 12,500 Units / Year (Remanufactured)</li> <li>• Toner cartridges: the global toner cartridge collection and recycling programme operates in 19 European countries</li> </ul>

Bitkom represents more than 2,300 companies in the digital sector, including 1,500 direct members. With more than 700,000 employees, our members generate a domestic turnover of 140 billion Euros a year, exporting high-tech goods and services worth another 50 billion Euros. Comprising 1,000 small and medium-sized businesses as well as 300 start-ups and nearly all global players, Bitkom' members offer a wide range of software technologies, IT-services, and telecommunications or internet services. They produce hardware and consumer electronics or operate in the sectors of digital media and the network industry. 78 percent of the companies' headquarters are located in Germany with an additional amount of 9 percent in other countries of the EU and 9 percent in the USA as well as 4 percent in other regions. Bitkom supports an innovative economic policy by focussing the modernization of the education sector and a future-oriented network policy.

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