DIGITALEUROPE

The contribution of the Digital Industry to repair, remanufacturing and refurbishment in a Circular Economy

April 2017

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Introduction

The European Commission defines a circular economy as a set of activities in which "the value of products, materials and resources is maintained in the economy for as long as possible and the generation of waste minimised"[1]. The European Parliament Research Service states that a circular economy is (partly) "based on sharing, leasing, reuse, repair, refurbishment"[2], to which one should add remanufacturing. DIGITALEUROPE would like to outline how its members are contributing already today to the circular economy through their repair, refurbishment and remanufacturing activities.[3] With a focus on the inner loops of the Circular Economy, our contribution to recycling is not part of this paper.

DIGITALEUROPE members already treat repair, refurbishment and remanufacturing activities as part of their business practice. They are hereby helping to reduce environmental impacts, create jobs and growth and deliver real benefits to the consumers. DIGITALEUROPE companies perform millions of repairs annually. Refurbishment and remanufacturing is a longstanding practice in B2B and high value segments of our industry.

In order to provide cost efficient repair and remanufacturing services, Members of DIGITALEUROPE have established central facilities inside and outside of the EU. Within Europe, these are based, among others, in: Czech Republic, Finland, France, Germany, Hungary, Ireland, Italy, The Netherlands, Poland, Romania, Sweden, UK and many more EU Member States.[4] Some companies choose a more decentralised model for after sales service in B2C in geographies corresponding to their market presence, often resulting in a coverage of virtually all of Europe.

This infrastructure, next to the waste collection and treatment facilities, is the circular economy backbone of the ICT industry in Europe. It contributes to reuse and increased lifetime of IT devices on the European market.

[1] Communication from the Commission to the European Parliament, the Council, the EESC and the Committee of the Regions "Closing the loop – an EU action plan for the Circular Economy", COM (2015) 614 final, 2 December 2015.
[2] European Parliamentary Research Service, Briefing "Closing the loop - New circular economy package", January 2016.
[3] The aftersales market differs from sector to sector. Just as definitions of repair, refurbishment and remanufacturing differ between sectors, so do DIGITALEUROPE companies have varying definitions of these terms. In practice, the borders between the terms are fluid. Attempts at definitions are included throughout the paper, nevertheless.
[4] European Remanufacturing Network, Remanufacturing Market Study, November 2015. A report for the European Commission under Horizon 2020, https://www.remanufacturing.eu/wp-content/uploads/2016/01/study.pdf;
Bitkom, "ICT Remanufacturing in the B2B market – Questions and Answers", n.d., https://www.bitkom.org/noindex/Publikationen/2015/Sonstiges/Questions-and-Answers-ICT-Remanufacturing-in-the-European-B2B-market/20150817-BitkomRemanufacturingQA-and-best-practices.pdf.

Circular Economy Practices in ICT

118,000 tons

global shipments for repair and remanufacturing p.a.

The aftersales market of ICT equipment is vast and a collection of proven and established circular economy business models. A DIGITALEUROPE survey from 2014 has shown that globally roughly 118,000 tons of IT equipment and spare-parts is shipped cross-border annually for OEM repair and remanufacturing; roughly 28,000 tons in Europe. An estimated 70% or more of this volume is repair of non-professional (B2C) products and 40% are 'out of warranty' repairs, resulting in millions of repairs per year that depend on cross-border movements in Europe alone.[5]

Different practices co-exist in the market for maximising the value inherent in circular economy business models. The extent to which these practices are followed depends on the respective business model. This paper will touch upon some but not all of these practices. Manufacturers typically pursue one or more of the following:

- Durability & Reliability
- Maintenance
- Upgrading
- Swap & Repair
- Remanufacturing & Refurbishment
- Hardware & Software Updates
- Guarantees
- Warranty Plans
- Resale
- Leasing
- Trade-in
- Reuse

[5] DIGITALEUROPE, "Transboundary Movements of Waste vs Used Goods", 30 January 2014, http://www.digitaleurope.org/DesktopModules/Bring2mind/DMX/Download.aspx?Command=Core_Download&EntryId=670&language=en-US&PortalId=0&TabId=353

Longevity, Durability & Reliability

Durability and reliability are qualities that consumers expect, but they also have direct positive impacts on the environment. Extending product life decreases the material footprint associated with the equipment. One strategy to achieve this end is eliminating common points of failure. Environmentally speaking, a product that is kept whole and is repaired, refurbished and reused is superior to manufacturing a new one from raw materials.

A product should be designed in a way that it can withstand the rigors of everyday use and even abuse. Manufacturers therefore design to minimize the need for repair, through the selection of high quality materials and components, as well as a durable, reliable structural design. Manufacturers also subject their devices to rigorous tests before they are placed on the market. A balance is sought between the quality of the materials, durability and costs.

Products are designed to be used. Functions, aesthetics, structural characteristics are maximized accordingly and trade-offs need to be solved for. Usually, a component needs repair, if at all, at most once during the lifetime of a product. When manufacturers design for durability, they aim for a repair event to never occur during the lifetime of the product. Sometimes this might mean that durability is achieved at the expense of the repair being a bit more difficult. In the event a repair is necessary, manufacturers provide for convenient, reliable and cost-efficient service solutions. This approach ensures that consumption and material inefficiencies are further reduced as fewer maintenance activities, repairs and pre-mature failures occur in the market. In some business models, this trend is further solidified by the business rationale inherent in leasing models or offering product functions rather than products (e.g. selling copies rather than printers).

Examples of longevity, durability and reliability practices:

Water proofing	Industry is designing for anticipated use and increasingly offers water proof devices when of interest. Whether it is rain, the accidental drop into the sink, a sweaty workout or other wet activities – smartphones or wearables are less likely to fail or be in need of repair afterwards.
Integrated design	Integrated designs of consumer devices usually bring increased structural integrity, reduced exposure to dust or humidity, less failure points in the device and generally increased rigidity. All these factors make the need for repair or replacement less likely – a direct contribution to longer lifetimes.
Software updates	Software support ensures the use of older generation devices without compromising security or data protection. Software updates by manufacturers allow customers to make use of functions that were not available on their product at the moment of purchase. This decreases the need for upgrading to new hardware (e.g. cloud services makes upgrading to obtain more storage obsolete). 'Software led longevity' through software support increases the resale value significantly.

Reuse

Environmentally speaking, re-introducing used equipment into the market is a vital contribution to the circular economy: "just keeping a smartphone in use for an additional year cuts its CO_2 impact by 31 per cent".[6]

$17bn
global used smartphone market in 2016

It is also a significant market opportunity. Deloitte Global predicted (conservatively) for 2016, that approximately 120 million used smartphones were sold or traded in by consumers, calling it the "$17 billion market you may never have heard of".[7] The used smartphone market is a fast-growing market, outperforming the overall smartphone market four to five times. IDC expects the global market for used smartphones to grow to $30bn by 2020.[8]

The market for used IT equipment is even larger. As Green Alliance puts it: "A circular economy for consumer electronics is already here. […] the value of Apple devices sold on eBay in the US in 2013 was nearly $2 billion. […] WRAP estimated in 2013 that the value of two to three year old laptops in the UK was £720 million and two to three year old tablets were worth £90 million after any collection and repair costs were taken into account".[9] The Deloitte Mobile Consumer Survey 2016 for 12 European countries found 19% of the participants had passed on their previous phone to a family member or friend when purchasing a new one. Another 10% sold or traded the old phone through different channels.[10]

For DIGITALEUROPE members, this does not come as a surprise. We know that ICT equipment is handed down several times before it becomes waste. In that sense, digital B2C devices have many lives. They find a new owner through:

- Online market places like eBay and Amazon
- Handing the device over to family or friends
- Donation to charity
- Trade-in to companies like Brightstar, Mazuma and Redeem as well as Original Equipment Manufacturers (OEM)

It is important to underline that ICT is very diverse. Reuse in B2B looks different to that in B2C contexts. For instance, network equipment and servers are treated very differently from consumer goods (see also: remanufacturing) – see example in the following table.

HPE Financial Services: Asset Recovery Service and Lease Program	Operates a business with reuse rates which are approximately as follows:			
			Resold	Recycled
	Asset Recovery Service	Servers	77%	23%
	End-of-leases	Servers	88%	12%
	Asset Recovery Service	Storage	31%	69%
	End-of-leases	Storage	33%	67%
	The difference between the resold percentages are related to data security issues, mechanical failure modes of hard-drive based storage technology, and the longer, initial useful life of storage products which make second life uses less attractive.			

[6] Green Alliance, "A circular economy for smart devices. Opportunities in the US, UK and India", January 2015, http://www.green-alliance.org.uk/resources/A%20circular%20economy%20for%20smart%20devices.pdf.
[7] Deloitte, "Technology, Media & Telecommunications Predictions 2016", 2016, https://www2.deloitte.com/content/dam/Deloitte/global/Documents/Technology-Media-Telecommunications/gx-tmt-prediction-2016-full-report.pdf .
[8] International Data Corporation, Press Release: "Worldwide Market for Used Smartphones Forecast to Grow to 222.6 Million Units in 2020, According to IDC", 21 November 2016, https://www.idc.com/getdoc.jsp?containerId=prUS41929916; International Data Corporation, Document at a Glance: "Worldwide Used Smartphone Forecast 2016-2020", October 2016, http://www.idc.com/getdoc.jsp?containerId=US41737016.
[9] Green Alliance, "A circular economy for smart devices", 2016.
[10] Deloitte Global Mobile Consumer Survey conducted in varrious European countries (Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, Netherlands, Norway, Poland, Sweden and UK). For more details, see Deloitte, "Global Mobile Consumer Survey 2016 – Trends from around the World", May-July 2016, www.deloitte.com/gmcs.

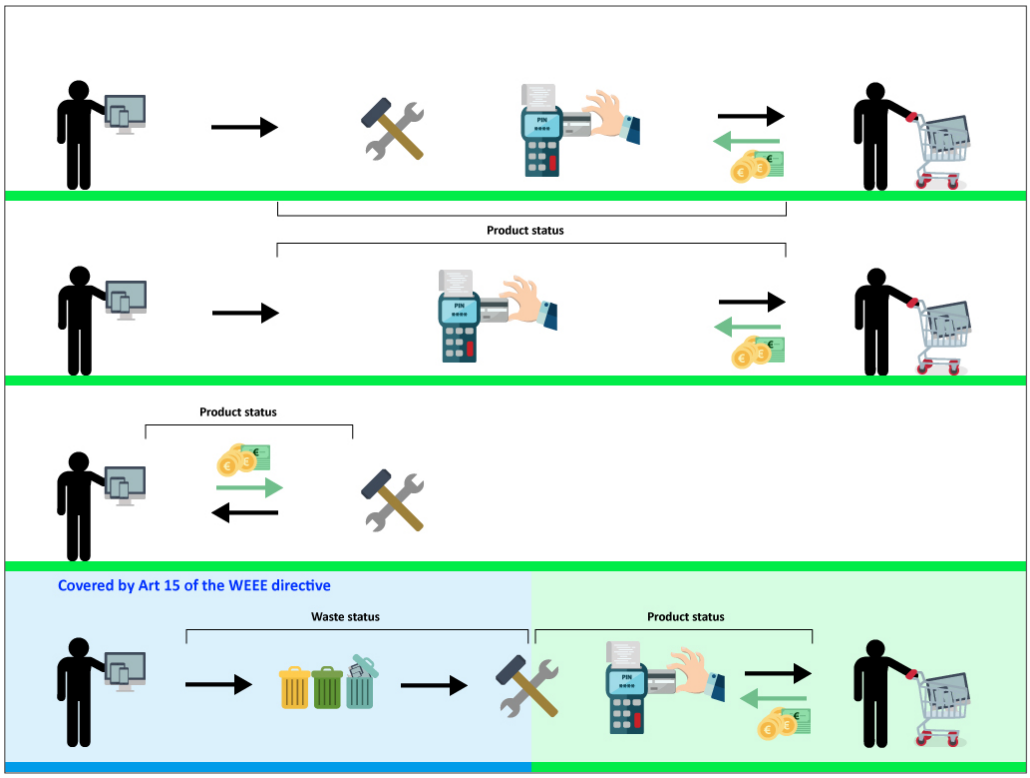
Reuse vs Preparation for Reuse

Difference between reuse and preparation for reuse	Preparation for Reuse is a legal definition from the Waste Framework Directive (Art. 3.16) for a process of "checking, cleaning or repairing recovery operations, by which products or components of products that have become waste are prepared so that they can be re-used without any other pre-processing". Preparing for reuse activities therefore involve equipment that has been discarded, hence has passed the doorstep of a collection point. Products that have been donated, sold to a third party or are repaired/refurbished in a commercial setting are not waste and not in scope of this process. WEEE retrieved from collection schemes are an example of waste products in scope.

The visualization below illustrates the legal differentiation: The Product status (in green), rather than the waste status (in blue), applies to the first three examples all throughout the process:

- Example 1: Products that are being repaired or refurbished and resold
- Example 2: products that are sold for reuse without further treatment
- Example 3: products that are shipped for repair/remanufacturing/refurbishment and back to the customer

Only in the last example does the waste status come into play. When a product is discarded by a consumer, it is defined to be waste; hence, WEEE Art. 15 also applies. After a preparation for reuse activity, the waste obtains product status again. Legally speaking, the following activities of the ICT industry are therefore not waste activities: shipping, treating, refurbishing, repairing, leasing or selling used products (see also WEEE Directive Annex VI).



Guarantees and hierarchy of remedies

Based on the requirements from the Consumer Sales and Guarantees Directive, Member States have adopted legal guarantee regimes of minimum 2 years, which covers any defect that is presumed to have existed at the time of the delivery of the product and that becomes apparent within the guarantee period. On top of the legal guarantee, consumers may also be offered a commercial guarantee. That is the case for most consumer electronics and electrical products: from time to time, manufacturers may offer longer commercial guarantees alongside legal guarantees in an attempt to gain commercial advantage.

When seeking a remedy for a defective product, the consumer is entitled, under the Consumer Sales and Guarantees Directive, to a repair or replacement. Should it be disproportionate or impossible for the trader to provide such remedies, the consumer is then entitled to a reduction of the price or a refund.

Repair

The current circular economy debate focuses on Do It Yourself (DIY) repairs, online tutorials, repair cafes and the small repair shop around the corner. DIGITALEUROPE would like to show with this paper that there is a second strategy of enabling repair of devices that carries considerable weight from a circular economy perspective: in order to cater to the mass B2C market and the specialized B2B market, DIGITALEUROPE companies are taking a large-scale approach. This business model ensures reproducible quality across the services provided.

Definition of "repair"[11]	A process in B2C or B2B of fixing a specified defect (or series of faults) of a product. Repair ensures the quality and functionality and renders the product/component available for reuse. Repair takes place both within or out of warranty. Correcting software faults or bugs are usually not considered 'repair' as they are part of the service typically offered.

In order to provide cost-efficient repair services, companies in our sectors have established networks of service points and implemented a variety of logistics solutions of convenience, including online mail-in solutions.

Repair conducted on a large scale has several advantages: it maximizes quality, safety, effectiveness and productivity and allows manufacturers to learn about defects of a product through experiences from the field. It extends the life of a product. It also allows companies to offer superior repair services at competitive prices. The repair networks of DIGITALEUROPE companies contribute significantly to the circular economy: the environmental impacts of producing new products are displaced, resource efficiency is increased through reuse, energy use is reduced and premature waste is avoided.

One important element of delivering on customer needs for repair and for making the circular economy a reality are the existing networks of authorized repair operators in Europe. These are subcontracted or independent professionals that are certified from the company to provide repair services on their products. Companies ensure the quality of their service through periodic site audits, routine reviews of delivery and quality metrics, external or internal auditing of standards and processes used. They receive highly specialized trainings to ensure they have the technical skills required to repair high tech devices. They are also trained on all relevant safety aspects. Within a clearly defined contractual obligation that ensures quality and safety of the customer, they receive further support as needed.

When a customer is in need of a repair, products can be either dropped off at an authorized partner or retail store; or sent in for repair at a centralized location. The centralized repair operations benefit from an organization, which was set up to work at scale. It is therefore able to provide quality service at competitive prices. Centralized, mid- or large-size repair operations of DIGITALEUROPE member companies are based, among others, in Finland, France, Germany, Hungary, Poland, Romania, Italy, Czech Republic and the UK. These operations provide local jobs and are often performed by subcontracting companies. In some cases, these are regional representations of the OEMs from outside of the EU that have been set up to provide regional services.

[11] Note that definitions will be developed in the CEN/CENELEC standardization work under M/543 on material efficiency.

Remanufacturing and refurbishment

Remanufacturing and refurbishment as a B2B business is a well-established way of creating value; such activities within the ICT industry started over 30 years ago. Remanufacturing is largely a B2B activity, in which ICT companies remanufacture products, e.g. servers, computing equipment, printers, networking and communication products. Refurbishment of B2C devices like smartphones or laptops is an important supply source of reuse sales. These are well-established activities with a long-standing tradition and an important contribution to the circular economy.

Description of refurbishment	A process that may be used in B2B or B2C and that renders the product available for reuse through part removal and upgrades/ replacements, and testing. The warranty that is issued covers the entire product. For most DIGITALEUROPE companies, the refurbished product may not be brought to the latest OEM specification or some smaller defects (such as a lower battery capacity) are not addressed as long as these do not have major impact on the use of the product. Some companies call their remanufacturing practice 'refurbishment' and would therefore bring the product back to at least production quality.
Description of remanufacturing	A process primarily in B2B of returning a used, non-functional, discarded or traded-in product "to at least its original performance with a warranty that is equivalent or better than of the newly manufactured product".[12] The process requires detailed and comprehensive disassembly and reassembly steps. From a customer perspective, the product will be in a "like new" condition both cosmetically and functionally[13] and fulfil all product specifications. It may incorporate upgrades to reflect improvements that have occurred since the product was originally made.[14] Components used for remanufacturing have OEM quality and may be either new or part harvested.

While remanufacturing/refurbishment is a global business, it has a substantial footprint in Europe. According to the Horizon2020 project ERN[15], the remanufacturing/refurbishment business in the EU alone accounts for an annual turnover of nearly €30bn, of which €3.1bn are attributed to EEE. More than 2,500 firms with roughly 28,000 employees are involved in creating this value for EEE. However, Bitkom's Product Reuse European Working Group[16] came to the conclusion that the number for ICT is significantly higher, at a turnover of $6,9bn in the EU.

$6.9bn
turnover of ICT remanufacturing business in Europe

Companies have invested in remanufacturing/refurbishment facilities across Europe. Dedicated facilities and operation processes ensure optimal processes, help manage supply and demand and create local jobs. Remanufacturing/refurbishment facilities of DIGITALEUROPE members and their subcontractors are located, among others, in Poland, Germany, Sweden, Czech Republic, France, as well as the UK, Ireland, Italy and many more EU Member States.[17] There is also a booming third party refurbishment business with companies like Re-Tek (UK) or Teleplan (the Netherlands). The latter alone handles more than 19 million

[12] BSI Standard BS8887-2:2009.
[13] Bitkom, "ICT Remanufacturing in the B2B market – Questions and Answers", n.d.
[14] European Commission, "The Blue Guide on the implementation of EU products rules 2016", Chapter 2.1., 26 July 2016, *http://ec.europa.eu/DocsRoom/documents/18027*, pp.16-17, states "Products which have been repaired or exchanged (for example following a defect), without changing the original performance, purpose or type, are not to be considered as new products according to Union harmonisation legislation. Thus, such products do not need to undergo conformity assessment again, whether or not the original product was placed on the market before or after the legislation entered into force."
[15] European Remanufacturing Network, Remanufacturing Market Study, November 2015.
[16] Bitkom, "ICT Remanufacturing in the B2B market – Questions and Answers", n.d.
[17] Ibid and European Remanufacturing Network, Remanufacturing Market Study, November 2015.

devices per year and has 5,000 employees.[18]

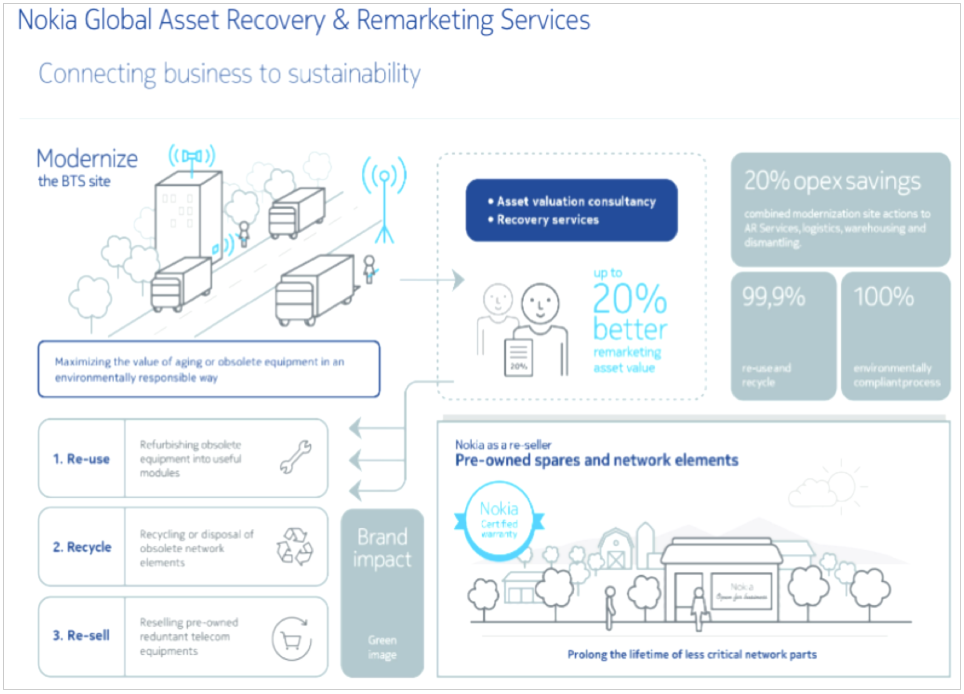
Repair, remanufacturing and refurbishment operations are oftentimes centralized within or outside the EU to benefit from economies of scale and access to qualified technicians and high-tech equipment. Both central and de-central service models depend on the shipment of spare parts and used equipment. Millions of products are shipped every year for failure analysis, in-warranty and out-of-warranty repairs, for remanufacturing or refurbishing.

Remanufacturing is a circular economy best practice as its benefits are both commercial and environmental:[19] it prolongs the life and value of a product and reduces the need for new materials. It provides options to avoid or postpone recycling and makes the best use of resources that have gone into the production of a product. CO_2 savings related to remanufacturing have increased 10-fold (across sectors) between 2003 and 2009.[20] It provides a new commercial life for used equipment, ensures collection of older ICT equipment, delivers the same or better warranty as new products, and ultimately supports the creation of local jobs.

10 fold

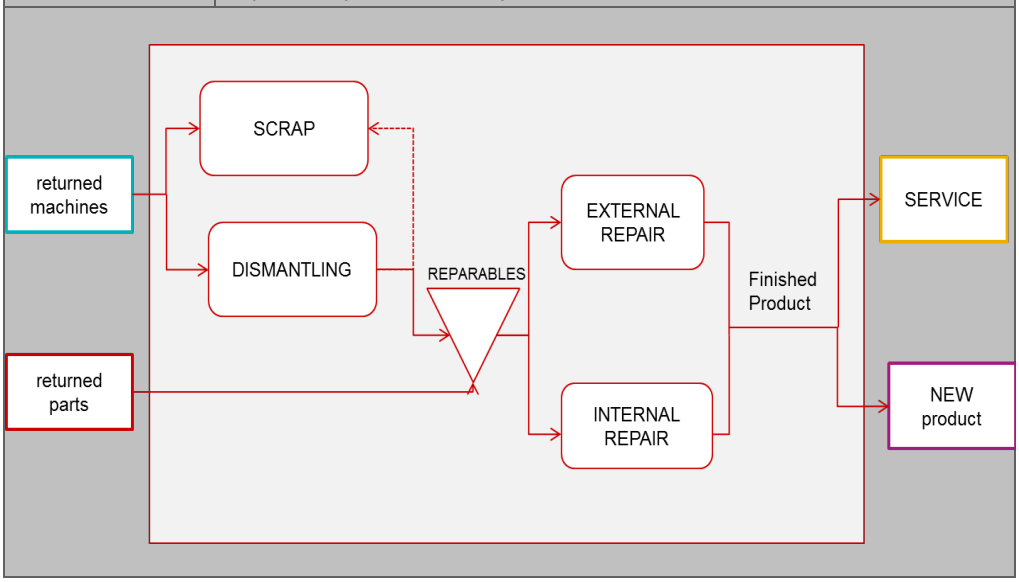
increase of CO2 savings related to remanufacturing between 2003 and 2009

Nokia Global Asset Recovery & Remarketing Services	Since 1991, Nokia has been remanufacturing telecommunications equipment as an "eco-sustainable" alternative to manufacturing new equipment. Nokia has refined its business to provide a variety of used equipment offers. This includes a full and expanding line of Nokia remanufactured products across all business groups, multi-vendor re-use, buyback / trade-in offers and Client Asset Management program for clients' surplus inventory, in support of continued use of its mature and end-of-life products.

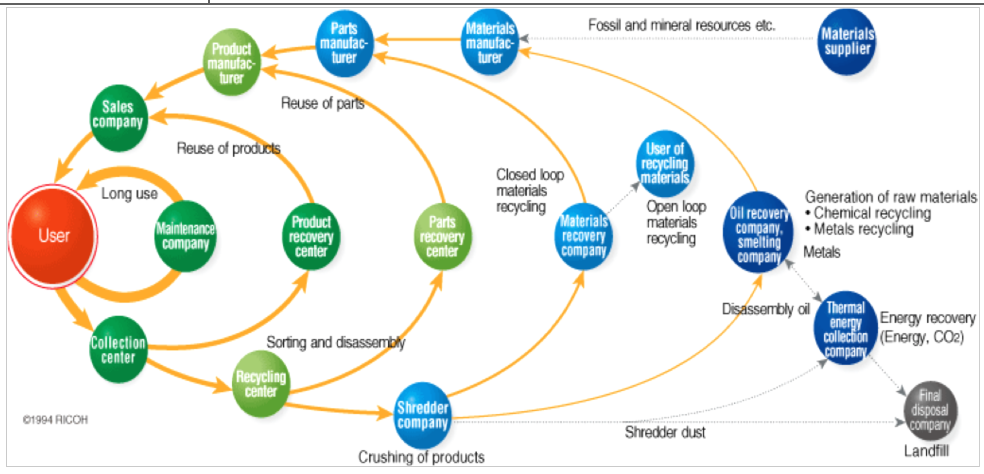


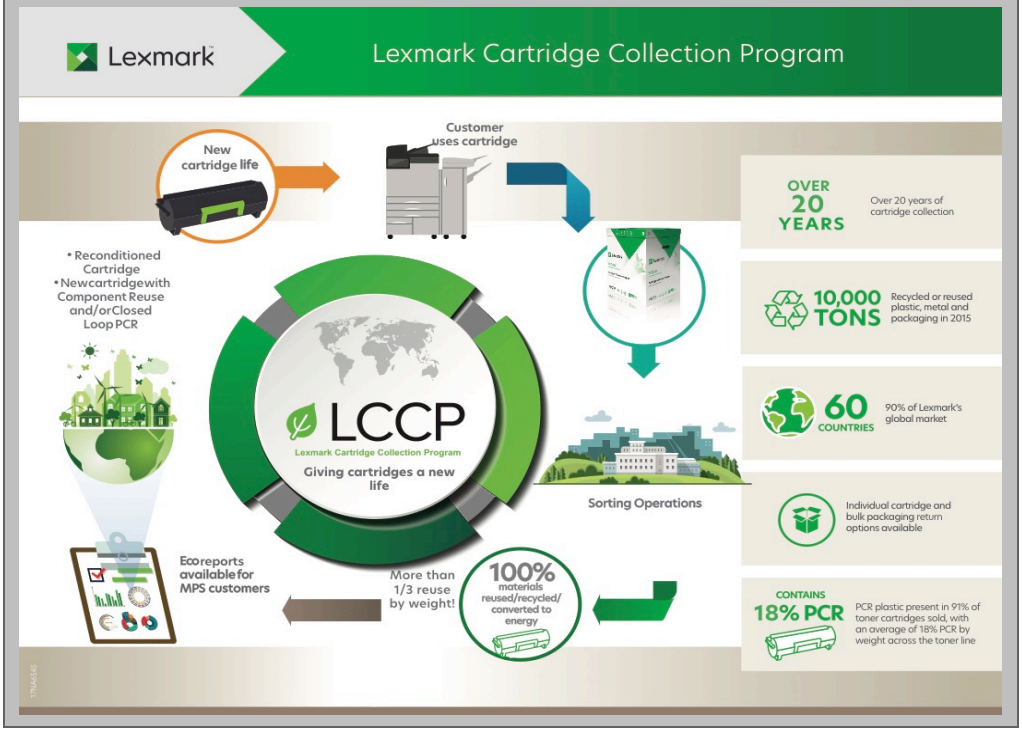
[18] Teleplan – lifecycle care for electronics, "Teleplan fast facts", n.d., https://www.teleplan.com/explore-teleplan/teleplan-fast-facts/.
[19] Ibid.
[20] Centre for Remanufacturing and Reuse, "Remanufacturing in the UK – a snapshot of the UK remanufacturing industry", 2010.

Asset recovery at Océ – a Canon company	Océ is active in digital imaging, industrial printing and business services. Océ started remanufacturing machines in the early 1980s, and started reusing parts of machines in others. In 1995, a separate Asset Recovery operation was founded. Printed Circuit Boards, Motors and complete modules are reused or remanufactured. Parts are either harvested from returned end-of-life machines or from the service channel. Used as input materials for new units, they form a fundamental part of a closed loop supply chain management. The environmental benefits range from increasing product lifetime, reducing need for virgin materials and avoiding waste. Economically, this strategy decreases costs and ensures that supplying spare parts after the stop of production is possible. It also constitutes a positive feedback loop on the quality characteristics of the parts, improving reparability and durability over time.



RICOH	RICOH is following the Comet Circle TM strategy created in 1994 and developed in Europe since 2008 (see below) with the remanufacturing of used cartridges. In 2012, RICOH launched its GreenLineTM. Whereas manufacturing of new products does not take place in Europe, the remanufacturing business was able to create new jobs: for example, the 3R activities (Reduce Reuse Recycle) at RICOH today employ about 400 people in the Green factory located in France. Remanufactured MultiFunction Printers are offered by RICOH certified as new with the same warranties as new products, but with a lower environmental impact.



Lexmark	Lexmark cartridges are designed and optimized for a cycle of disassembly and reuse through the Lexmark Cartridge Collection Program (LCCP). LCCP currently receives back more than 35 percent of cartridges shipped worldwide and Lexmark is working to increase the number of returns. A zero landfill and incineration policy is followed to ensure that all the empty cartridges returned from customers are reused or recycled to their greatest environmental benefit. Lexmark focuses on the waste stream hierarchy and places priority on reuse. Cartridges received by the LCCP are inspected for reconditioning. In 2015, approximately 36 percent of the cartridge materials by weight returned to Lexmark were reused and Lexmark has established a goal to increase this to 50% by 2018. Cartridges that don't qualify to be a reconditioned cartridge, can still complete the circular economy loop via component reuse or materials reuse. Lexmark has developed a process to recycle the plastics from returned cartridges for reuse in new cartridges. The Lexmark toner cartridge product line contains on average an industry-leading 18% by weight of post-consumer recycled (PCR) plastic content, partially provided through LCCP. PCR plastic has been implemented across more than 90 percent of the toner cartridges that Lexmark sells. By 2018, Lexmark's goal is to achieve an average of 25% PCR plastic content across the entire cartridge product line.
	

Principles for legislating Circular Economy and the ICT industry

Once a product has been purchased, its lifetime can be extended through reuse, repair, refurbishment and remanufacturing - hence avoiding premature wastage. This part of our business is labour-intensive and therefore contributes to the EU's jobs and social agenda.

Significant elements of the circular economy are already a reality in the ICT sector. Reuse, repair, remanufacturing and refurbishment are flourishing practices. DIGITALEUROPE member companies are contributing directly to delivering both the economic and environmental benefits of the circular economy. The consumers also benefit from safe, durable, reusable products that are protected by warranties.
In order to enable DIGITALEUROPE member companies to expand this business and contribute further to the circular economy, the following principles should guide standardization and legislation of the aftersales market:

A) Reuse, repair, refurbishment and remanufacturing should not be addressed under waste legislation.
B) Recognise the potential of the reuse, repair, refurbishment and remanufacturing business of the ICT industry to the Circular Economy rather than hamper its contributions
    a. Ensure safety and quality of the repair experience of consumers by recognising the trusted status of authorised repair networks and refurbishment/ remanufacturing facilities
    b. Protect the IP rights associated with the innovative nature of our sector even in the aftersales, maintenance and repair market, in particular with regard to license agreements and access to proprietary information.
C) When legislating ecodesign, set feasible goals, vetted by stakeholders, rather than prescribing design measures which have not been thoroughly studied, and could impede product innovation or affect product reliability and functionality. Such an approach empowers the industry to continue innovating. It also allows manufacturers to assess carefully the potential trade-offs between durability, reparability, ease of disassembly and other design features.
D) Safeguard the "repaired as produced principle" for spare parts[21]. As recognized in EU RoHS, the availability of spare parts for electronics is key for allowing the repair, reuse and upgrades of equipment already placed on the market. Without this principle, equipment would either become prematurely obsolete, or at best, increase the cost of repair and upgrades.
E) Avoid negative side effects on circular economy through revising consumer policy.
    a. Do not revise EU law so that consumer (rather than then the trader) is allowed to choose the remedy. This would result in a significant increase of electronic devices unnecessarily being refunded or replaced rather than repaired – at a cost and local job impact.
    b. Guarantees for the period of 2 years should not be revisited. Current rules offer sufficient level of consumer protection. Forcing longer commercial guarantees through legislation might stifle both competition and consumer choice, whilst increasing the prices paid by all consumers.
F) Facilitate the flows of the innermost loops of the circular economy.
    a. Do not treat products shipped for repair/refurbishment/ remanufacturing as waste and do not place them under the blanket of suspicion of illegal waste shipment. The same applies for consumables, components and used parts of EEE that are

[21] See European Commission, "The Blue Guide on the implementation of EU products rules 2016", 26 July 2016, pp.17-21.

being shipped with the intention of reuse.

b. Reduce administrative burden from waste shipment regulation for shipments of products destined for failure analysis, repair, remanufacturing.[22]

Following our recommendations would ensure that the costs for repair, remanufacturing and refurbishment would be reduced. Shipment processes would be sped up. Millions of products would be diverted from a premature death and receive a new life.

The transition to a more circular economy, where the value of products, materials and resources is maintained in the economy for as long as possible, and the generation of waste minimised, is an essential contribution to the EU's efforts to develop a sustainable, low carbon, resource efficient and competitive economy.

[22] See Correspondent Guidelines No.1 on Shipments of Waste Electrical and Electronic Equipment (WEEE) and of used Electrical and Electronic Equipment (EEE) suspected to be WEEE.

DIGITALEUROPE

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ABOUT DIGITALEUROPE

DIGITALEUROPE represents the digital technology industry in Europe. Our members include some of the world's largest IT, telecoms and consumer electronics companies and national associations from every part of Europe. DIGITALEUROPE wants European businesses and citizens to benefit fully from digital technologies and for Europe to grow, attract and sustain the world's best digital technology companies.

DIGITALEUROPE ensures industry participation in the development and implementation of EU policies. DIGITALEUROPE's members include 61 corporate members and 37 national trade associations from across Europe. Our website provides further information on our recent news and activities: http://www.digitaleurope.org

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National Trade Associations

Austria: IOÖ
Belarus: INFOPARK
Belgium: AGORIA
Bulgaria: BAIT
Cyprus: CITEA
Denmark: DI Digital, IT-BRANCHEN
Estonia: ITL
Finland: TIF
France: AFNUM, Force Numérique, Tech in France
Germany: BITKOM, ZVEI
Greece: SEPE
Hungary: IVSZ
Ireland: TECHNOLOGY IRELAND
Italy: ANITEC
Lithuania: INFOBALT
Netherlands: Nederland ICT, FIAR
Poland: KIGEIT, PIIT, ZIPSEE
Portugal: AGEFE
Romania: ANIS, APDETIC
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Switzerland: SWICO
Turkey: Digital Turkey Platform, ECID
Ukraine: IT UKRAINE
United Kingdom: techUK