

Rethinking Managed Print Services for the Circular Economy

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Quocirca Viewpoint

The circular economy is fast gaining ground as the latest buzzword in sustainability, bringing together emerging practices such as collaborative consumption and traditional concepts such as recycling and remanufacturing. The circular economy aims to eradicate waste, departing from the linear “take, make and dispose” model and its reliance on infinite natural resources and energy. According to McKinsey, each year around 80% of the \$3.2 trillion worth of materials used in consumer goods are not recovered ¹.

Through a more effective use of materials, the circular economy envisions a smarter approach to the creation, use and disposal/recycling of products. As well as the obvious environmental benefits, the transition to a circular economy will be driven by the promise of over \$1tn in business opportunities, as estimated by the Ellen MacArthur Foundation ². This includes material savings, increased productivity and new jobs, and new product and business categories.

International momentum

Some countries are already starting to introduce legislative drivers such as waste prevention targets and incentives around eco-design to promote products that are easier to reuse, remanufacture and disassemble.

China has set up CACE, a government-backed association to encourage circular growth, while Scotland has issued its own circular economy blueprint. In a significant move, the European Commission's circular economy framework, to be released in late 2015, is expected to introduce higher recycling targets and a landfill ban on recyclable materials across all 28 EU member states.

According to weight-based material flow analysis conducted in 2010 by the Waste & Resources Action Programme (WRAP) ³, 19% of the UK economy is already operating in a circular fashion. This relates to the weight of domestic material input (600 million tonnes) entering the economy compared with the amount of material (115 million tonnes) recycled. WRAP predicts that this figure could rise to nearly 27% by 2020, if 137 million tonnes of material were recycled from a direct material input of 510 million tonnes.

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Services innovation

The circular economy is also enabling some companies to think differently. Where profits may have been created through getting customers to buy new equipment on a regular basis, taxes and other costs (such as those forced on companies through the European Waste Electrical and Electronic Equipment (WEEE) regulations) may drive towards more design for longevity backed with a more service-oriented profit line.

Indeed, our relationship with the products and services we purchase could be dramatically changed under a circular economy. This shifts buyers from ownership to instead favouring access and performance. By selling the benefits of products as part of an overall solution, instead of the actual products, manufacturers begin to design against different criteria, monetising product longevity through service, upgrade and remanufacturing.

**66% of business
owners believe**

hardware/equipment
offers more value when
delivered as a service.⁴



Some product categories are more likely to benefit from being a service-based proposition than others. A recent Guardian survey found a majority of business owners (66%) felt technology hardware/equipment offered most value as a product-service model, followed by electronic and electrical equipment (56%) and cars, tyres and parts (51%) ⁴. Indeed, smart, connected products are expected to transform the next wave of manufacturing. Self-monitoring enables remote control, optimisation, and automation. This monitoring allows the tracking of a product's operating characteristics and history and to better understand product usage. This data has important implications for both product design and after-sales service – enabling proactive and automated service and maintenance.

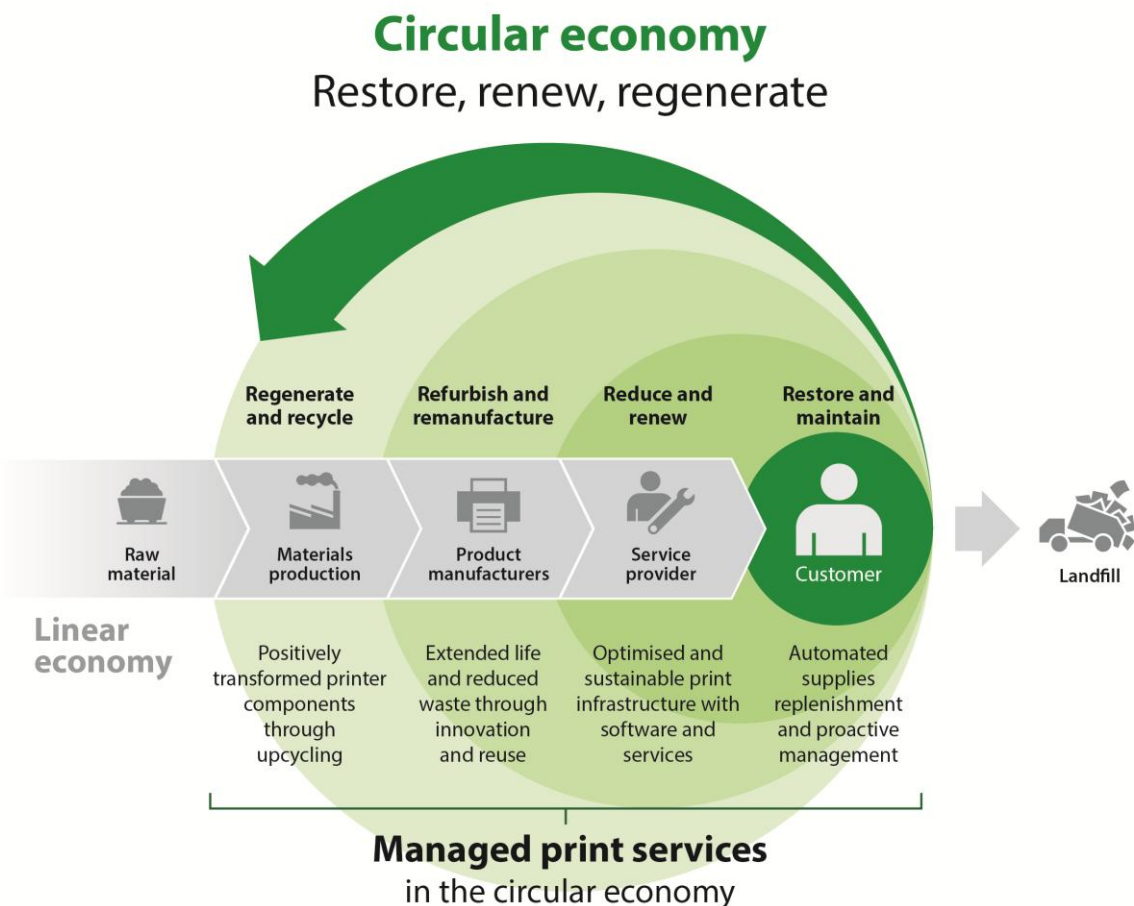
This approach facilitates a shift to usage-based models, offering the potential to extend the 'pay per use' contracts associated with smartphones to other products such as washing machines or even clothes. Already, Philips, a strong advocate of the circular economy, now sells lighting as a service for its business customers. Customers only pay for the light and Philips takes care of the technology risk and investment. It can also take the equipment back to recycle the materials or upgrade them for reuse.

The next frontier for printer manufacturers

The circular approach is nothing economy new in the print industry, which has long been striving to enhance its sustainability credentials. This includes the manufacturing process, the responsible recycling of ink and toner, or the provision of hardware, software and services, which eliminate wasteful paper and energy usage.

From a manufacturer perspective, many are already designing and building products that are part of a value network where reuse and refurbishment, on a product, component and material level, assures continuous re-use of resources. Meanwhile, manufacturers have already developed innovative models to move away from selling printers to selling printing as a service. To support this transition to a services model, most manufacturers now offer managed print services (MPS) as a way to help customers reduce the cost, complexity and risk of an unmanaged print infrastructure. Through a usage model, MPS offers businesses predictable expenses and eliminates capital expenditure whilst reducing operational expenses. In this way, manufacturers retain ownership of their products, and sell their use as a service enabling the optimal use of resources.

Quocirca sees a significant opportunity for MPS in the circular economy model, not only to reduce the environmental impact of the products that a business uses, but also as a way for manufacturers to deliver more innovative products and services to meet the changing needs of the business.



The linear “take, make, dispose” economy inherently produces landfill waste. The circular economy redirects waste from landfills, and transforms it into what promises to be more than \$1 trillion in business opportunities and value, including material savings, greater productivity, and new product and business categories.² Managed Print Services (MPS), with its shift from a hardware- to service-centric model, enables organisations to share in the circular economy and realise both financial and environmental savings.

Quocirca recommends the following best practices to drive a more sustainable MPS for the circular economy.

1. Assess current environmental impact

Begin with assessing energy consumption, paper use, carbon footprint and costs across the printer fleet. Some MPS providers offer environmental or carbon footprint calculators or assessments specifically for this purpose. An assessment should focus on identifying areas where the business can lower its environmental impact and recommend a balanced deployment of hardware and software to decrease usage of energy, paper and consumables. By redesigning the print infrastructure with fewer devices, the fleet is optimised with less hardware that is more energy efficient. MPS can provide further benefits by leveraging best practices through management of change and print policy enforcement. This encourages users to print responsibly, eliminating wasteful paper usage and encouraging better recycling practices.

2. Save energy

Consider energy-efficient products that meet eco-labelling qualifications, such as ENERGY STAR, EPEAT or Blue Angel. Devices that meet the most recent ENERGY STAR requirements can be up to 40% more energy-efficient than others. Look for printers and MFPs with fast warm-up times and deep-sleep and toner-saving modes. Intelligent print management tools can also ensure the most appropriate device is used for each print job by automatically routing large jobs to lower cost, more energy-efficient printers or MFPs.

3. Reduce the paper trail

Reducing paper usage is one of the fundamental benefits of how MPS can reduce environmental impact. This can be achieved through better solutions for mobility and security. Using MFPs that allow users to scan documents then store and share them digitally, either on-premise or in the cloud, minimises an inefficient and costly paper trail. Meanwhile simple ways to reduce paper wastage include setting double-sided printing as default or introducing booklet printing. Pull printing or PIN printing saves jobs on a virtual print server until users log in at the print device. This reduces the risks of users forgetting to pick up their documents and reprinting them later or the wrong person picking them up, compromising security and confidentiality.

HP printer manufacturing and circular economy

At HP approximately 75% of ink cartridges rolling off its production lines utilise closed-loop technology, achieved through the use of recycled plastic from HP cartridges and the upcycling of plastic from other types of post-consumer recycled plastic, such as plastic bottles and clothes hangers.

Nearly a quarter (24%) of the company's LaserJet Toner cartridges feature some recycled content, despite being a more challenging proposition due to the complexity of materials contained within them.

Based on 2013 data, the recycled plastic used in Original HP ink cartridges has a carbon footprint up to 33% smaller, 54% lower fossil fuel consumption and 75% lower water usage during manufacturing than the virgin plastic used in Original HP ink cartridges. For details see www.hp.com/go/recycledplasticsLCA.

4. Encourage good recycling practices

Consider how effective existing approaches to recycling paper, print cartridges and older printing devices are, and set recycling guidelines for these items. Look for providers that offer a take-back program and responsibly recycle returned toner cartridges. For imaging equipment, the Nordic Swan and Blue Angel labels ensure this support is in place. Switching to recycled or sustainably sourced paper can also lead to considerable environmental savings, particularly in terms of carbon emissions.

5. Measure and manage

Integrated reporting provides enterprise-wide visibility of a print infrastructure's environmental impact, including the amount of paper used, overall energy consumption and carbon footprint. This provides excellent opportunities for continuous improvement. In fact, many manufacturers now offer tools and resources to help organisations quantify the impact of their printer environment and develop plans for improvement.

Conclusion

The circular economy represents a markedly different way of doing business, forcing companies to rethink everything from the way they design and manufacture products to their relationships with customers. Offering customers access to, rather than ownership of, printing resources will lead to more sustainable consumption and some leading print manufacturers are already starting out on this journey.

Rethinking MPS for the circular economy requires a different approach across the value chain: leasing rather than selling products, remanufacturing goods, seeking ways to extend the life of products or their components, and changing the behaviours of end-users. Given the changing consumer, business and government attitudes towards consumption and the environment, the circular economy is poised to help make organizations operate more smartly – a transformation from selling boxed products to supplying ongoing services, ensuring a more effective use of raw materials and increasing competitiveness by nurturing relationships with customers rather than relying on a one-way model of selling and buying.

References

¹ McKinsey & Co, [Remaking the industrial economy](#), Insights & Publications, February 2014

² [Towards the Circular Economy](#), published in Davos by the World Economic Forum (WEF), in partnership with the Ellen MacArthur Foundation and McKinsey, January 2014

³ Analysis by Waste & Resources Action Programme (WRAP), [WRAP's vision for the UK circular economy to 2020](#), 2010

⁴ [Circular economy: this is the future for business - interactive](#). Published by the Guardian in partnership with Philips, December 2014

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