

## 'Setting the Tone-r' Kyocera Document Solutions

### Introduction

Part of the global Kyocera group, Kyocera Documents Solutions (UK) Ltd are a leading manufacturer of monochrome and colour printers along with multi-functional products and software solutions. The company is celebrating 25 years of business in the UK, and have been pioneers of environmental business stewardship since their inception - and long before it became fashionable. Today, the company specialises in providing a broad range of customers with a fully managed print service that cuts costs for the customer while simultaneously saving valuable resources and generating both economical and environmental benefits.

### Background

Around 47 million printer cartridges are sent to landfill every year in the UK. Companies which resell these scrapped cartridges do exist, however this cannot be repeated indefinitely and the cartridge is too complex to be easily recycled. This creation of around 50,000 tonnes of underutilised waste represents a loss of valuable materials and embodied energy from the supply chain.

The conventional method of replacing toner as part of a composite printer cartridge is laborious, extremely expensive and resource inefficient. The cartridge contains the majority of the moving parts of the printer and typically contains seventy separate components made from twelve different materials. Tracey Rawling Church, Head of Corporate Social Responsibility at Kyocera UK likens changing an ink cartridge to "replacing your engine every time your car runs out of fuel."

### Opportunity

- Dual opportunity for business to reduce waste and costs by moving to consumption based supply models

### Approach

- Introduce a resource efficient product by redesign of printers:
  - Downsize number of parts from 70 to 5
  - Replace conventional drum with a durable amorphous silicon drum
- Offer a fully managed outsourced print service to facilitate transition from ownership to consumption-based supply models

### Impact

- Reduction of carbon footprint by 55% per printer
- Reduction of waste by 85% per printer
- Reduction of cost by 54% per printer

resource-  
efficient  
product  
design

design that  
facilitates  
disassembly

consumption-  
based  
business  
models

more  
sophisticated  
resource  
recovery  
infrastructure



Image from Kyocera Document Solutions

## Opportunity & Drivers

The conventional printing business model is based on selling cheap, loss-leading hardware to subsequently access a lucrative consumables market. However, the recent economic downturn has prompted businesses, particularly companies with large office spaces, to thoroughly re-evaluate their printing costs. Kyocera's proposition costs no more than conventional hardware but achieves lower overall costs throughout the lifetime of the printer as a result of cheaper ongoing consumable costs.

## Approach

Kyocera's unique approach to competing in the documents solution market is two-fold, involving a resource efficient product which in turn enables companies to transition from a traditional model of ownership or product leasing to a competitive service solution business model.

In 1992, Kyocera introduced a radical redesign of the laser printer which eliminated the need for cartridges. The brand overhauled the entire printer design to replace drums made from organic photoconductive materials with significantly longer lasting amorphous silicon, as well as increasing the design life of other key components. This enabled the consumable to be drastically simplified, cutting down the number of components from seventy to five, all of which are made from either of two types of plastic.

Kyocera now offers a fully managed print service which enables customers to buy printing as an outsourced service charged for by the page. In order for customers to move to 'consumption based supply' models, Kyocera provides an assessment of the number of users per printer and the frequency of use by each user, as well as a study of document workflows. Kyocera can then provide a bespoke solution that takes advantage of document management software to reduce the quantity of printers a company requires and the number of pages it prints.

## Benefit & Impact

By changing the drum material, all major components of the printer are then essentially built in, leaving the ink cartridge accessible and therefore simple to replace. A Kyocera drum lasts for between 100,000 and 1 million pages (depending on the duty cycle of the printer), in comparison to 10-40,000 pages for conventional printers. The highly efficient and simplistic redesign has enabled all five plastic parts to be easily identifiable and processable for recycling, allowing these materials to be retained in the supply chain alongside preventing the scrapping of materials that otherwise would have been incorporated into the cartridge design. These combined changes have enabled an impressive reduction of the carbon footprint, waste and total costs. In a recent independent study over 500,000 pages these factors were reduced by 55%, 85% and 54% per printer, respectively.<sup>2</sup>

The challenge still remains to recycle - not down-cycle - these new cartridge materials at their end of life stage. Although Kyocera printers are designed for facile disassembly, at present the majority of the plastic is shredded. Kyocera is currently involved in collaborative research and development to move towards economically viable collection and recycling models.

Kyocera would also like to see more companies shift towards outcome based tenders to further 'consumption based supply.' By evaluating and identifying the long term benefits of using the Kyocera service in comparison with the short term gain of buying (and then disposing) of cheaper printers, companies could experience long term savings as well as cut their materials waste.



Image from Kyocera Document Solutions

1. <http://www.green-alliance.org.uk/uploadedFiles/Events/Tracey%20Rawling%20Church%20speech.PDF>
2. Buyers Lab International, January 2013