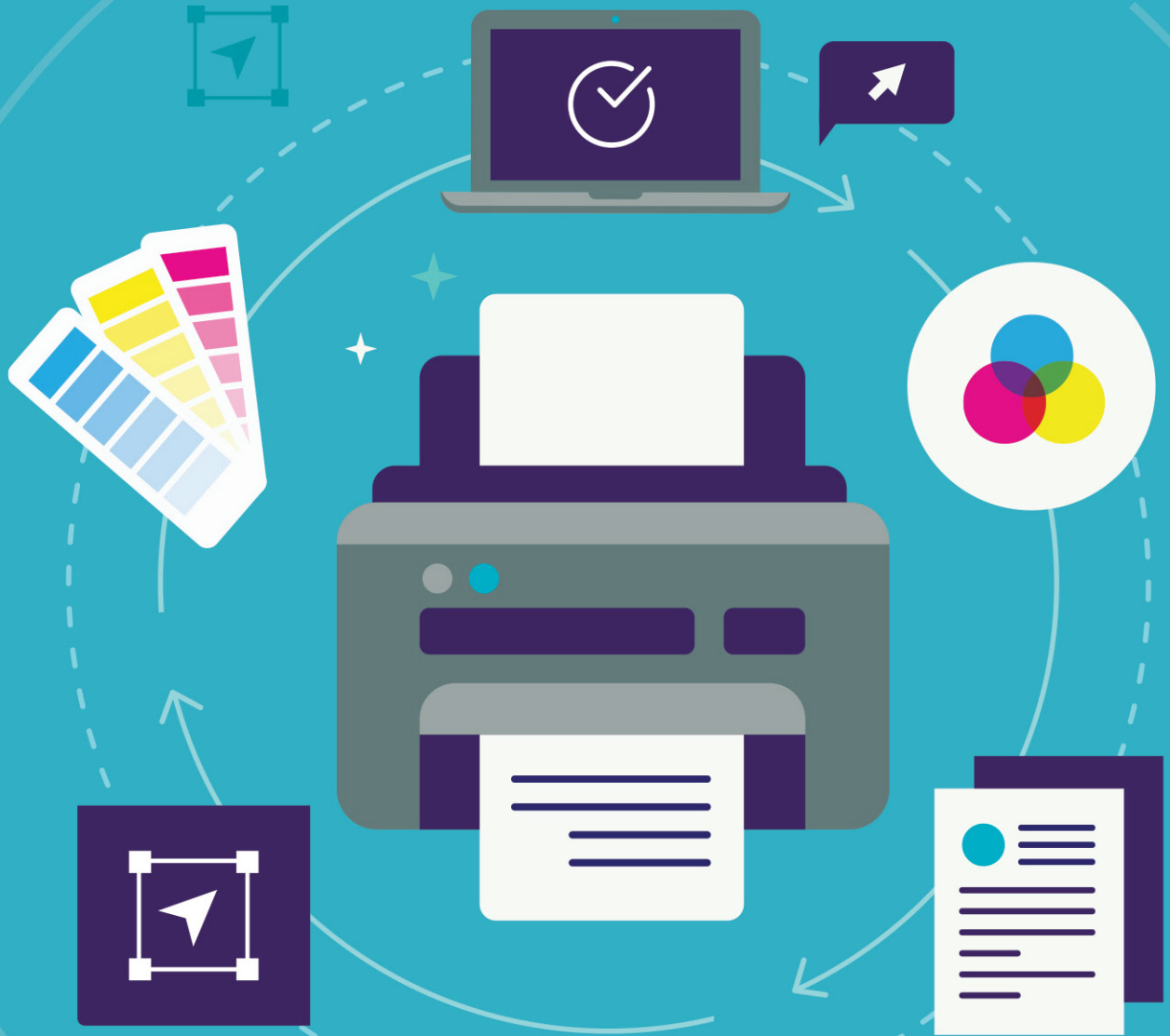
The future of print

A whitepaper from Midwich



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Introduction

The paperless office has been predicted for over 40 years, yet printed paper shows little sign of disappearing from the office landscape anytime soon. This is because, even in an age of ubiquitous screen-based devices, printed paper remains a supremely convenient and flexible way of recording and transmitting information.

If we look at the future of print in the office there are some clear trends which are affecting the development of print technology.

Top Trends in 2020

p3. Corporate Social Responsibility (CSR)

The environmental performance and credentials of print suppliers are under constant scrutiny and for the public sector can be subject to regulatory compliance. Demonstrating positive, environmentally responsible policies is essential.

This makes environmental performance an important issue in the procurement process for document imaging systems.

p5. Security

Data security is of paramount importance to customers so print device manufacturers have incorporated a range of security measures into their products to ensure data protection.

p6. Mobile print

The latest printing solutions sustain the new collaborative, mobile paradigm of workplace printer usage with improved workflow efficiency.

p7. Document workflow solutions

Customers now want software solutions that can link their document imaging to their 'back office' IT systems for an integrated approach to document management.

p9. Vertical alignment

Print device manufacturers are increasingly aligning the features and functions of their systems to specific vertical market applications.

Corporate Social Responsibility

CSR has become an increasingly important issue for organisations of all sizes. There is now a clear recognition that businesses must serve the interest of all their stakeholders and not just shareholders. Social responsibility and evaluating the impact of commercial activity on communities and the environment have become paramount considerations.

Environmental conservation is the greatest concern. Many organisations, especially in the public and voluntary sectors, lead tender documents with requests for environmental sustainability information. Even in the private sector enterprise corporations and SMEs now routinely want proof of environmental conservation policies.

However, one of the great myths about paper and print is that paper production is bad for the environment. In fact, trees for paper pulp are grown as a sustainable crop in the same way as any other crop, except the harvest cycle is 20 to 30 years and not annual. Large parts of Scandinavia and Canada would be featureless tundra if not used for conifer growing for paper production. This actually traps CO2 and releases oxygen.

Mature deciduous trees and tropical hardwood are not used for paper production and in fact are unsuitable for manufacture of modern paper. Paper is a biodegradable, compostable, renewable, sustainable product. Growing and harvesting trees provides jobs for millions of men and women. Working forests are good for the environment, preventing soil erosion and providing clean air, clean water, wildlife habitat and carbon storage.

Many print devices have features such as duplex printing, N-up printing (several pages combined onto a single sheet), proof print, preview copy and automatic skipping of blank pages, so paper consumption can be reduced, helping to conserve forest resources.

Modern paper print devices also now incorporate a range of features which significantly reduce their lifetime carbon footprint, compared to print devices made in the past. The latest print devices use Induction Heating (IH) fusing technology. IH is an instant heat source enabling image fusing at lower temperatures than conventional fusing. IH relies on electrical currents within the material to produce heat, making it very safe. Lower temperature fusing of images requires less energy and the reduced heat has the additional benefit of less paper curling as a result of drying.

Corporate Social Responsibility (continued)

This results in greater operating reliability because there are fewer paper misfeeds as a result of paper curl. For duplex printing (double sided) this is especially important because the sheet of paper has to pass through the machine twice.

An added benefit of IH is that the device warm up time is reduced significantly. Using the IH fusing technology has allowed device manufacturers to shorten this warm-up time considerably, resulting in a successful reduction of ready mode power consumption, saving energy and reducing carbon footprint.

State-of-the-art IH fusing technology is also combined with the latest polymerised toners fixing at lower temperatures, for minimal warm-up time and maximum energy efficiency. In addition, the imaging quality benefits from using polymerised toner because it has smaller, smoother, more uniform toner particles for more even distribution, significantly better fine line definition, and better solid fills.

Standby energy consumption on current and future print devices has also been reduced. Sleep and hibernate modes reduce energy consumption to just a few watts, less than a LED light bulb. As a result, almost all current print devices conform to the international Blue Angel and Energy Star awards indicating good energy efficiency and environmental credentials.

Ensuring that print devices use leading-edge technology to reduce energy usage has the added benefit for customers of cutting power costs. The latest energy saving technology does not compromise operational efficiency, with warm-up times, recovery from sleep mode and print speeds not only maintained but, in many cases, improved.

Most manufacturers conform to the international ISO 14001 standard for an effective environmental management system (EMS). As part of their EMS programmes, manufacturers analyse, document and minimise the carbon footprint of their print devices over the whole lifecycle, from manufacture to end-of-life.

At end-of-life the Waste Electrical and Electronics Equipment Directive (WEEE) imposes a responsibility for the disposal of waste electrical and electronics equipment, including print devices, on the manufacturers of such equipment. Manufacturers are required to establish an infrastructure for collecting WEEE and to arrange for either the refurbishment and reuse of devices, or their ecologically friendly disposal.

So, from manufacture to disposal, suppliers of print devices are taking steps to significantly reduce every aspect of the carbon footprints of their products and consumable items. This trend is continuing and is an important feature of all future product development.

Data security

In the past print devices were often considered as a weak link in network security. This was because they were often overlooked by network administrators, who were primarily concerned with users' PCs and notebooks as vectors for hacking attacks. This is no longer the case.

With the need for compliance with General Data Protection Regulations (GDPR) from May 2018, customers have begun to take a serious approach to the need for data security, including print as part of the IT infrastructure.

The printing industry benchmark for security is the ISO 15408 Evaluation Assurance Level 3 (EALs) security standard, which is designed to keep critical information safe, including the IEEE 802.1x network access protocol securing critical information, and also IEEE 2600.1, the international standard for multifunctional printer security.

Most of the major suppliers now ensure their devices are compliant to EALs standard (also known as 'Common Criteria') for information technology security evaluation. ISO15408 is the industry standard certification containing a common set of requirements for the security functions of IT products and systems and for assurance measures applied to them during a security evaluation.

Today's print devices have a range of access control features to prevent unauthorised usage of the devices including standard user authentication by username and PIN as well as the option of contactless user cards, or biometric authentication such as fingerprint scanners. Should the user forget to log-out, devices can be set with an auto-logout after a given period. Today's machines also have a built-in security function that works with the network IP filter. This provides safe logging and port access control, relying on the commonly used SSL encryption method.

The latest multifunction systems also offer 256-bit data encryption protocol for memory and hard drives. This secure encryption protects information as it transfers across networks. For security when copying, printing or scanning, job data is simultaneously deleted from the memory during processing or transfer preventing a third person re-outputting or re-transferring the information. In addition, if the automatic overwrite is enabled by the administrator, then jobs manually deleted from a user box (archive) will be overwritten several times too.

These numerous features such as standard compliance with TSL, SSL IPsec, S/MIME e-mail and IP filtering, provide full reassurance of data integrity, ensuring that every form of communication or document transfer is undertaken securely.

Data security (continued)

When the time comes to replace a print device or relocate it, users can prevent recovery of data held on the main body of a system by using an overwrite facility which fills the memory with random numbers making any stored information incomprehensible even if an intruder recovers the data.

Finally, as a detection method the latest systems have access control log files giving a complete history of all multifunctional operations as a data log. This will show unauthorised access and misuse such as after-hours personal copying or printing.

Mobile print

The huge growth in mobile working practices is another driver for innovation. The explosion in mobile working is radically changing the way people manage documents including printing. The rapid growth in the BYOD (bring your own device) phenomenon, where workers opt to use their own smartphones and tablets as their device of choice to connect to the internet, has had a major impact on document print workflows.

The workplace will continue to require more mobility and innovative workspaces. Mobile workers are no longer tied to their desks, they use smart phones and tablets as opposed to laptops whilst on the move, but still expect seamless integration into workflows for both printing and scanning of documents.

Workers want to take advantage of their new mobility to be free from the need to return to a desktop PC for printing or scanning jobs. Instead they want web pages, PDFs or photos to be printed straight from their mobile device to save time and inconvenience. As a result, there is a growing need to support mobile and cloud printing via AirPrint (iOS), Mopria (Android), Google Cloud Print, WiFi direct and popular cloud services such as Google Apps, Evernote and Microsoft SharePoint.

Many print device manufacturers are including Near Field Communications (NFC) functionality into their MFDs for the office, to allow direct pairing, authentication, touch to print, and touch to scan with a mobile device. When the user wants to print the job, they simply walk up to the MFD and touch their mobile device in the NFC Tag area in the display to authenticate and the job is automatically released for printing. This ensures confidential documents are not left in the output tray for anyone else to pick up.

Mobile print (continued)

Cloud printing is another relatively new technology for document imaging, providing users with secure access to their printing network via the web. This remote access can facilitate a variety of flexible working practices by allowing users to prepare work at any location, and then just send the print job to their print network via the cloud where it will be stored ready to be accessed at any connected printer at a time convenient to the user.

Security is a concern, where employee mobile devices are connected to corporate networks and enterprises deploying a cloud storage solution. Consequently, a mobile device can be used to authenticate and log-in to a user's account at the MFD when they want to copy or scan. This saves entering a username and password, using IC card reader or biometric technologies to authenticate.

Manufacturers' mobile print solutions provide the essential software to create a seamless workflow experience. Benefits include heightened productivity, cost-efficiency, security, ease of use and flexibility. This creates a new collaborative, mobile paradigm of workplace printer usage with improved workflow efficiency. As mobile working becomes the standard environment for most businesses, business processes will be designed for mobile printing from the outset. Mobile print solution technology promises a future in which employees are mobile, untethered to their desktop, and able to create, view, share and print information at anytime from anywhere.

Document workflow solutions

Today almost all multifunctional print devices (MFDs) print devices are networked and used for print and scan functions rather than copy. Increasingly MFDs are part of a network workflow system for document imaging and management. So, customers now want software solutions that can link their document imaging to their 'back office' IT systems for an integrated approach to document management.

Solutions are now a major factor in the sale of MFDs and providing such solutions can be a daunting task for a resellers. Selecting the right software solutions, partnering with the right suppliers and implementing the solution for the customer and supporting it can be challenging.

Consequently, manufacturers have developed some excellent document management software (DMS) applications. Although SMEs have long been aware of the potential benefits, the cost of investing in a DMS and associated training has often been prohibitively expensive. Many of the available solutions have also been unnecessarily complex for SME application. The latest range of software solutions from suppliers such as Lexmark, OKI, Canon, Brother and Kyocera are specifically engineered for use by SMEs and are offered at a more competitive price point than previously available.

Document workflow solutions (continued)

The current solutions portfolios offered by manufacturers cover the entire print management process: origination, workflow, fulfilment and archiving.

With the rise of electronic archiving and electronic transfer of documents, scanning has become as important a function as copying and printing. Document archiving solutions such as Kofax eCopy and PowerRetrieve capture paper documents digitally for rapid, accurate, electronic archiving, indexing and file searching. With archiving solutions MFDs can scan and easily convert paper-based information into digital documents and securely incorporate them into business software systems.

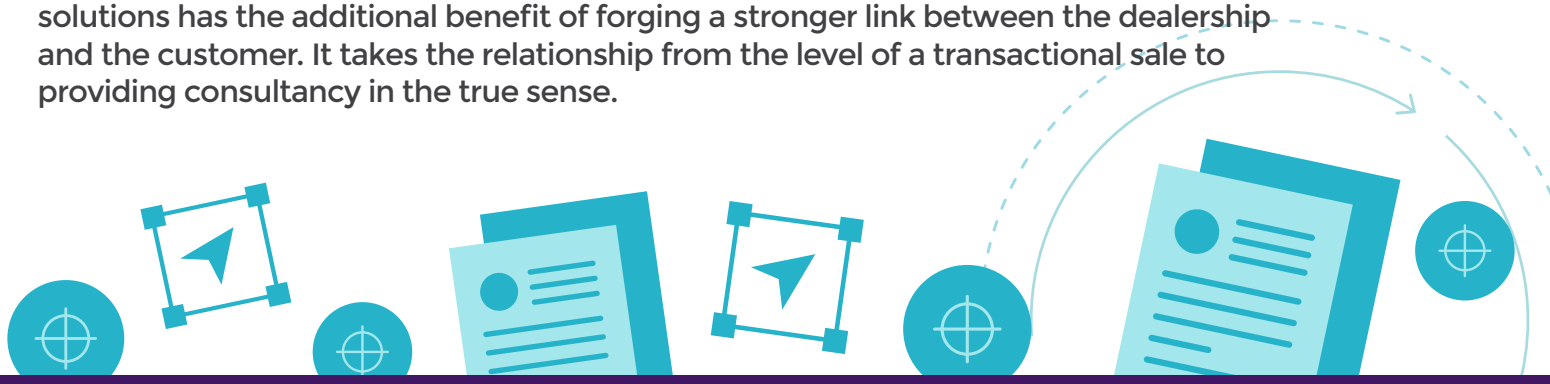
However, it should be stressed that an MFD is only suitable for light and occasional electronic archiving as the scan speeds and resolution are not intended for intense and continuous scanning. For such applications a dedicated scanner, with a higher specification is recommended.

As well as manufacturers own solutions portfolios, third parties offer solutions such as print management systems including PaperCut. To manage a networked fleet of print devices these administrative solutions provide detailed information about the operating conditions of all networked output devices via a web browser interface. This allows a network administrator to instantly check device conditions on all network-connected print devices from their desktop, including toner, paper and staples where a finishing device is fitted.

These administrative control applications can significantly reduce costs for customers, for example, cutting colour usage by a quarter using proper management controls and without having to default all the devices to mono only.

Follow-me-printing has also been a big hit across all industries as it offers a high level of convenience and flexibility for the user. Follow-me-print applications work by creating a central server which all print jobs are sent to. Once sent to the central server the print job is stored ready to be printed at any printer on the network. To have a job printed out, the user goes to the print device of their choice to authenticate themselves before printing, ensuring sensitive documents are not picked up by the wrong person.

An enterprise's successful management of business documentation is certainly key to best practice in the office environment. So, offering customers software solutions for their document imaging and management needs is good, profitable business. But supplying solutions has the additional benefit of forging a stronger link between the dealership and the customer. It takes the relationship from the level of a transactional sale to providing consultancy in the true sense.



Vertical alignment

Several hardware and software manufacturers such as Brother, Canon, Kyocera, Lexmark, OKI and PaperCut, are focusing on print applications based on the needs of specific vertical markets. Let's look at some examples:

Healthcare

In the healthcare sector there is a need to print specialist output such as patient wristbands, labels and prescriptions forms in hospitals. Print security for patient data confidentiality is another key requirement. Some suppliers have developed print devices that print onto pressure-sensitive media such as labels for medicines.

There are also print devices with lockable paper trays securing specialised media, such as prescription forms, blank wristbands and other expensive or sensitive stock. To print from these trays the user must have a pre-authorised authentication, preventing unauthorised printing of prescriptions forms and pharmaceutical labels.

Education

In the education sector there is a need to provide teachers and students with access to print devices, while being able to restrict usage to authorised work. There is also a need to allocate print costs to departmental budgets and individual users.

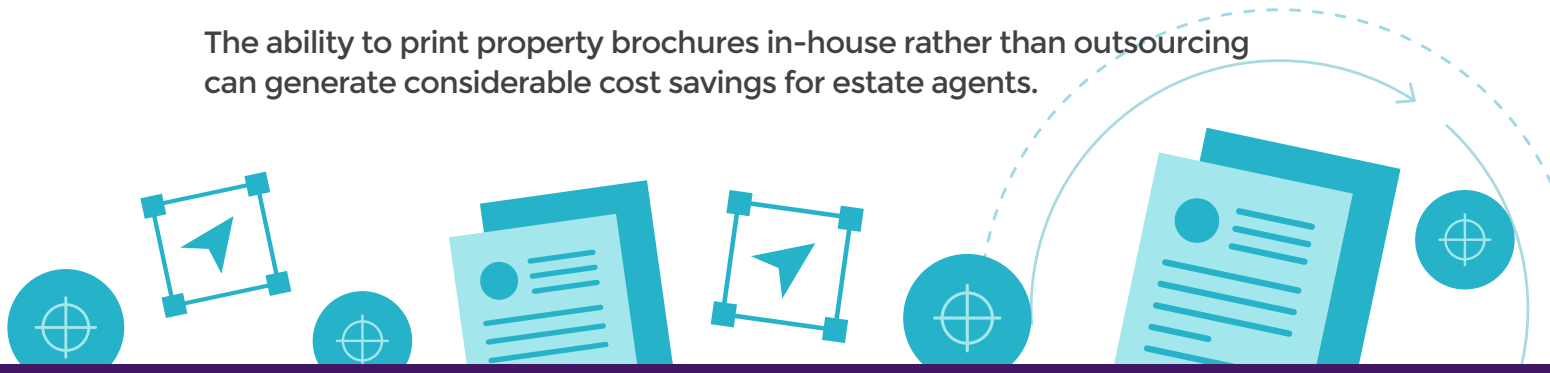
Print management applications are available to restrict functions and output volumes for specific users. For example, students can be limited to mono output and up to a dozen prints a day, while teachers would have access to colour printing and higher volume limits. Print management software can also be used to allocate print costs for budgetary control.

There is also a requirement in educational establishments for online print finishing, to collate and bind documents. Most manufacturers offer collating and booklet making modules for their print devices.

Estate agents

Estate agents need to print high-quality property details in colour and bound to a professional standard. Often because of floor plan schematics and photographs these need to be printed in A3 landscape format. Although becoming less widely available, there are print devices that can print onto A3 in size media in colour and can bind along both the long and short edge.

The ability to print property brochures in-house rather than outsourcing can generate considerable cost savings for estate agents.



Retail

Retail outlets need to produce POS materials, mailing pieces and flyers in colour. Investment in in-house colour print devices means significant cost savings compared to charges for outsourcing colour printing over time.

Several manufacturers offer print devices with banner printing at A4 in width (297mm) and over a metre in length. Banner printing allows retail organisations to produce promotional signs at a fraction of the cost of purchasing them commercially. For retailers and sales companies banner printing opens up a host of opportunities.

Professional services

For legal reasons professional service firms such as legal and accountancy practices still need to fax original documents with signatures to banks and other professional service providers. Consequently, the facility to fax documents from a MFD is an ongoing requirement which manufacturers continue to fulfil with fax enabled models.

As can be seen from these examples, it is a mistake to see investment in the latest print devices technology as purely an overhead. When purchased correctly print systems can provide a real return on investment, helping to automate document workflow processes in ways in which customers may not have considered previously.

With a team of documents solution specialists, and great relationships with our vendor partners, Midwich are well placed to help you find the right solutions for your 2020 print needs.

Talk to us about the wide range print hardware and software solutions we can offer, tapping into our expertise.

Contact our team on 01379 649278
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