

Managed Print Services, 2023

Building a secure and sustainable workplace



Executive Summary

Amid a challenging economic climate, organisations are looking to maximise operational efficiencies and re-evaluate technology infrastructure investments. Although a measured return to the office is underway, print volumes will continue to be pressured, particularly as organisations accelerate digitisation initiatives. Organisations using MPS have higher expectations of its ability to reduce environmental impact, while also looking to address ongoing costs associated with their print infrastructure.

Many are re-evaluating, optimising, and refreshing their printer fleet, providing MPS providers with opportunities to help customers transform their print and digital infrastructure through cloud-based, secure, and sustainable solutions and services. However, customer satisfaction is falling as expectations increase. MPS customers expect suppliers to demonstrate strong expertise across cybersecurity, cloud, and sustainability, reflecting the need for suppliers to enhance their competitive differentiation.

This report highlights the findings from Quocirca's primary research study, conducted in May 2023 across 208 organisations using MPS in the UK, France, Germany, and the US.

Key findings:

- **Changing office footprints are creating new workplace solution needs.** Real estate footprints are expected to change by 2025. Overall, 59% of businesses indicate that they expect it to increase, compared to 26% that anticipate a decrease. This suggests that some organisations may be moving to introduce more satellite offices or expand collaboration and social space. As hybrid work impacts office occupancy levels, organisations are looking at more effective workplace solutions to maintain employee productivity and engagement.
- **Hybrid work continues to impact print volumes.** While employees are increasingly returning to the office, with an average of 40% working fully in the office and a further 33% in a hybrid model, employee behaviour may have irrevocably changed when it comes to printing. On average, organisations estimate that print volumes are 52% of pre-pandemic levels, with this expected to stay relatively stable at 54% through 2024. While the UK is more optimistic at 60%, this compares to just 48% in France.
- **Organisations are refreshing and rethinking their printer fleets.** As organisations look to drive more efficiency and control costs, they are updating their printer fleets. Overall, 42% are moving to a more centralised fleet, with 41% indicating they are moving to a more distributed fleet. While this is strongly dependent on industry sector and organisation size, 36% are notably prioritising the introduction of inkjet printers in the office, rising to 45% in the retail sector.
- **Cost, sustainability, and security are top print management challenges.** Overall, 37% of respondents report that cost control is the top print management challenge, followed by the cost of purchasing and maintaining print servers (32%) and reducing environmental impact (31%). Larger organisations are more likely to consider reducing environmental impact a key challenge (34%), as well as securing home printing (23%).
- **Cloud usage is driving cloud print management adoption.** Overall, 48% of organisations using MPS report that they have implemented a cloud print management platform, with a further 39% planning to do so in the next year. However, despite this shift to the cloud, only 13% say they are prioritising reducing or eliminating print servers. This suggests a lack of awareness of the benefits of serverless printing, as well as an ongoing requirement amongst many organisations to operate an on-premise print infrastructure.
- **Cybersecurity and IT expertise are top MPS provider selection factors.** Cybersecurity expertise is the top requirement when organisations are selecting an MPS provider. Overall, 45% rate this as very important, rising to 51% amongst UK respondents. In the US, IT infrastructure expertise (along with analytics expertise) is rated as the top selection factor (52%), compared to just 33% in Germany. This reflects a more mature market potentially for managed IT services in the US, as well as acceptance of using a single supplier for both print and IT services.
- **MPS satisfaction rates have dropped since 2022.** Only 31% of respondents indicate that they are very satisfied with their MPS supplier in 2023, compared to 47% in 2022. Key areas where MPS is proving less effective include reducing environmental impact, service reliability, and reducing costs. Although active dissatisfaction is still low at only 6%, a lack of positive feeling towards suppliers increases the risk of customers reviewing their contracts or looking elsewhere.

Contents

Executive Summary 2

Methodology and Definitions 4

Introduction..... 5

MPS Drivers 8

MPS Satisfaction 9

MPS Supplier Expectations 11

Future Services 12

Recommendations 13

Quocirca MPS Vendor Assessment..... 15

Vendor Profile: Konica Minolta 17

About Quocirca 19

Methodology and Definitions

Quocirca conducted a survey among senior managers with responsibility for decisions relating to managed print services. The research was conducted in the UK, France, Germany, and the US, amongst 218 enterprises with 500 or more employees that were already using a managed print service. For the purposes of this research, organisations with 500 to 999 employees are referred to as mid-size organisations, and those with over 1,000 employees are classed as large organisations. The survey was conducted online and fielded in May 2023.

Definitions

Quocirca defines a 'managed print service' as the use of an external provider to assess, optimise, and continuously manage an organisation's document output environment and improve productivity and efficiency, while reducing cost and risk. It also leverages existing investments in multifunction printers (MFPs), while continually monitoring usage, so the optimised infrastructure continues to meet business needs.

MPS covers several service areas across three broad categories:

- **Assessment.** A review of the current print environment to provide recommendations for rationalisation and an estimate of potential future savings. These range from basic online assessments to full workflow assessments. Environmental impact analysis and document security assessments may also be included.
- **Optimisation.** Device rationalisation and consolidation to improve user-to-device ratios, and development of print policies as part of a governance framework for a full enterprise MPS, deployment, transition, and change management.
- **Management.** Continuous process improvement, business reviews, service level agreement (SLA) monitoring, remote management, and workflow improvement.

The MPS ecosystem

The MPS landscape includes printer/copier manufacturers, systems integrators, and software infrastructure vendors.

- **Printer/copier manufacturers.** These vendors' programmes are generally tied to their product offerings, although multi-vendor support is often available. Service offerings include assessment, design, implementation, and support services. They may also offer MPS programmes via their resellers. Vendors in this category include Brother, Canon, Epson, HP Inc., Konica Minolta, Kyocera, Lexmark, Ricoh, Sharp, Toshiba, and Xerox.
- **Systems integrators/resellers.** These are a channel to market for some printer and copier vendors, and may offer MPS as part of a wider managed IT services offering.
- **Independent software vendors (ISVs).** These provide software tools for use in the print environment. They vary from print management, security, and analytics tools to cloud printing solutions. Examples include Kofax, MPS Monitor, Print Audit, Eci FM Audit, PaperCut, Printix, Process Fusion, Ringdale, and YSoft. Providers often use such third-party products to add value to a particular element of their MPS portfolio.

Introduction

Print volumes are stabilising to a new normal

The MPS market remains vulnerable to economic uncertainty and shifts in customer demand. Print volumes appear to have now reached a new normal, reported to be an average of 52% of pre-pandemic levels (Figure 1). This appears unlikely to change significantly – while the UK estimates that it will rise to 60% by 2024, French respondents are the least optimistic, expecting print volumes to reach just 48% of pre-pandemic levels. Despite the ongoing decline in print volumes, organisations remain reliant on printing, with 51% saying it is very important to their business.

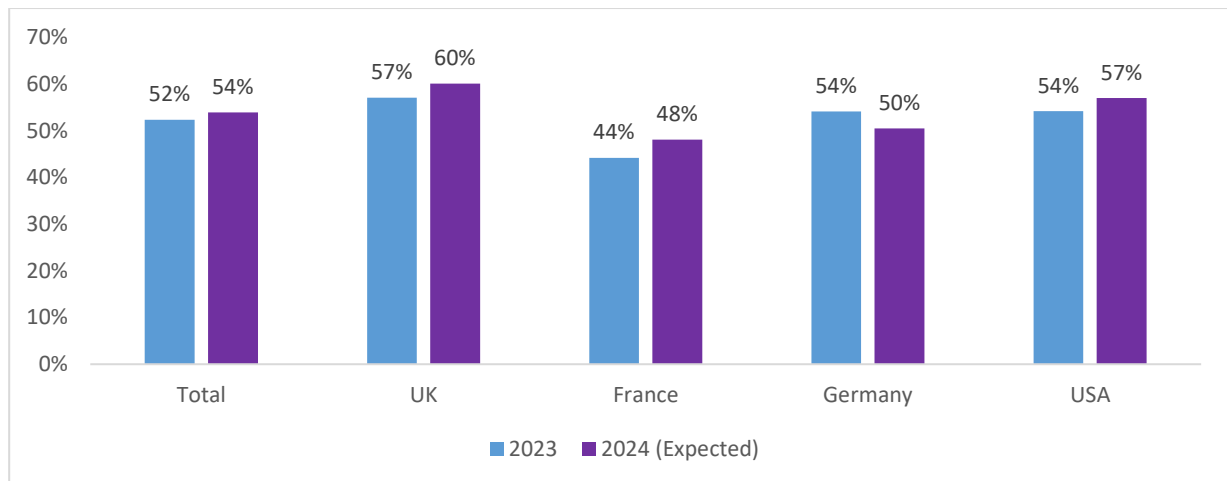


Figure 1. What percentage do print volumes represent of pre-pandemic levels (2023 and expected in 2024)?

This ongoing reliance on printing creates inefficiencies and increased costs – both financial and environmental (Figure 2). Overall, 37% of respondents report that cost control is the top print management challenge, followed by the cost of purchasing and maintaining print servers (32%) and reducing environmental impact (31%). Larger organisations are more likely to consider reducing environmental impact a key challenge (34%), as well as securing home printing (23%). While overall, 30% indicate securing printing across a hybrid workforce is a key challenge, this rises to 39% amongst organisations operating a multivendor environment and drops to 22% amongst those that have a standardised single-brand environment.

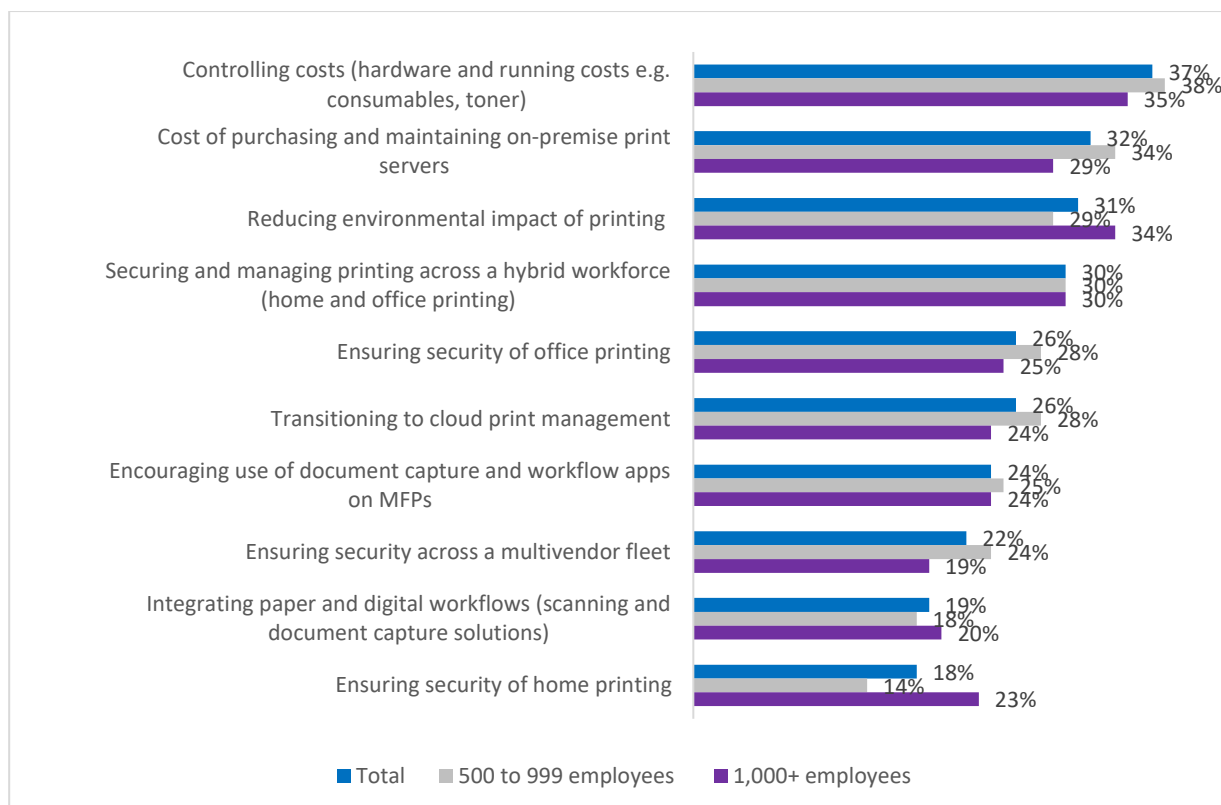


Figure 2. Top print infrastructure management challenges

As organisations re-evaluate their print infrastructure to support a more distributed and hybrid workplace, MPS providers are well positioned to help customers reduce both financial and environmental costs. This can be achieved by refreshing and rationalising the printer fleet with more energy efficient devices, moving to cloud printing to reduce or minimise print server utilisation, and implementing digital workflow solutions to reduce paper usage. Indeed, by 2025, 55% of respondents believe MPS will be key to their organisation's digitisation initiatives, a rise from 36% today.

Print technology priorities

As they adapt to the changing hybrid workplace business environment, organisations are making a range of changes to their print infrastructure. From a hardware perspective, 42% indicate that they are moving to a more centralised A3 device environment, with 41% moving to a workgroup A4 print environment (Figure 3). The retail sector (with its branch-based structure) and industrial companies lean towards a distributed A4 fleet, while public sector and professional service companies favour A3 machines. Organisations operating a mixed fleet environment are most likely adopt an A3 centralised model (50%), compared to 36% of those operating a standardised fleet.

Implementing security solutions is a key priority amongst 39% of organisations. Midmarket organisations are more likely to be prioritising security solutions (46%), compared to 33% of large enterprises. Security is also a top priority for the industrial sector, of which 55% indicate they are implementing security solutions across their print environment, compared to just 23% of the public sector.

Notably, despite the cost concerns of print servers, just 13% of respondents are focused on reducing or eliminating print servers. This indicates that not many organisations have yet been convinced of the benefits (or are unaware of them), such as decreased maintenance of print servers and reduced costs. This represents a potential opportunity for MPS providers to articulate propositions around serverless printing, particularly for organisations that are committed to shifting their IT infrastructure to the cloud.

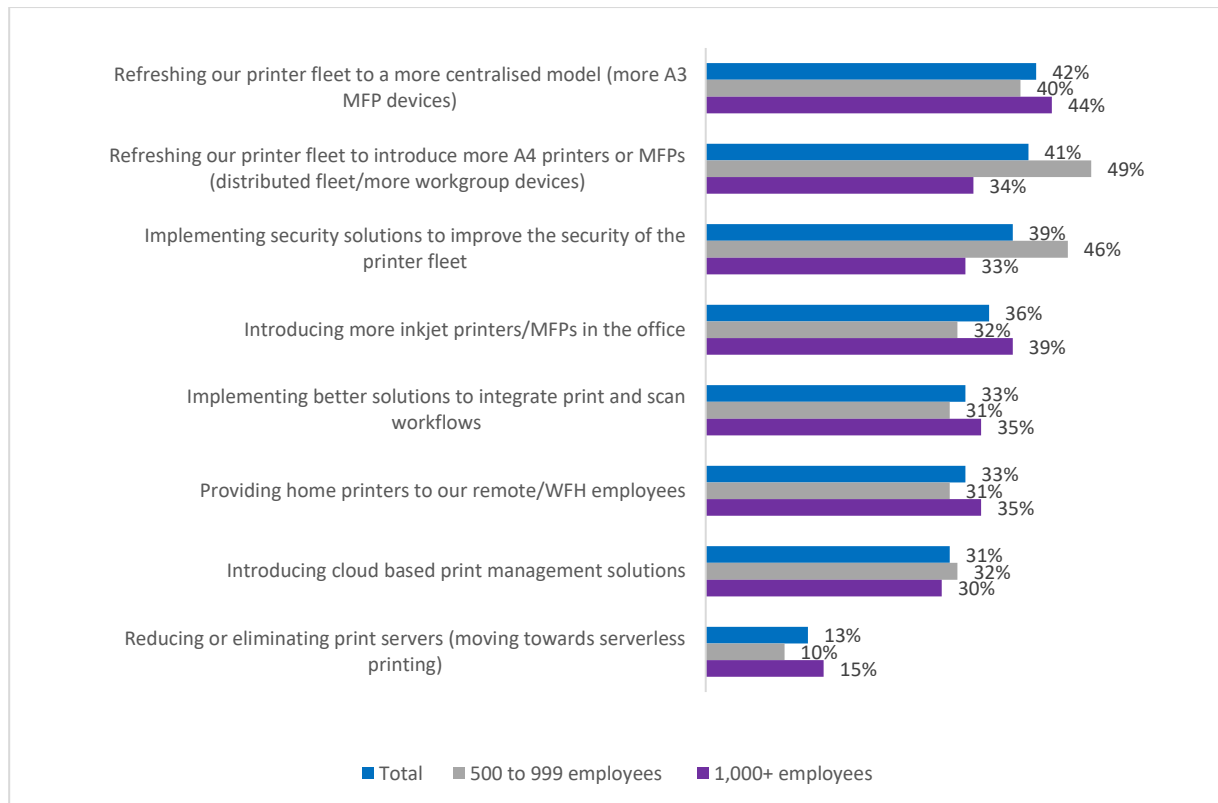


Figure 3. Top three print-related priorities in the next 12 months

MPS Drivers

This year, spend on MPS services is expected to increase following a more subdued situation in the last two years. One-quarter (25%) of businesses anticipate they will be investing significantly more on MPS services in the next 12 months. This rises to 36% among the professional services sector and 43% among those that have a multivendor fleet.

This year sees a shift in MPS customer expectations. While overall, half of customers say improved service quality is the top driver for MPS (rising to 55% amongst large enterprises), the need to lower environmental impact is moving higher on the agenda (Figure 4). The percentage of companies that say reducing the environmental impact of printing is a very important benefit of MPS has increased from 37% in 2022 to 48% this year – the biggest percentage change of all criteria. There are some significant variations by organisation size – reducing environmental impact is the top driver for midmarket MPS customers that are also more focused on reducing consumables costs (47% compared to 37% of larger organisations). Notably, shifting the print infrastructure to the cloud is the lowest-rated factor for using MPS – although it is viewed as more important by larger organisations (41%) than by midmarket organisations (31%).

This presents an opportunity for MPS vendors to differentiate themselves by offering products and services that help organisations reduce environmental impact. Such services include monitoring and analysing environmental performance, reducing energy usage, intelligent monitoring and control of printer fleets, and minimising wasteful printing.

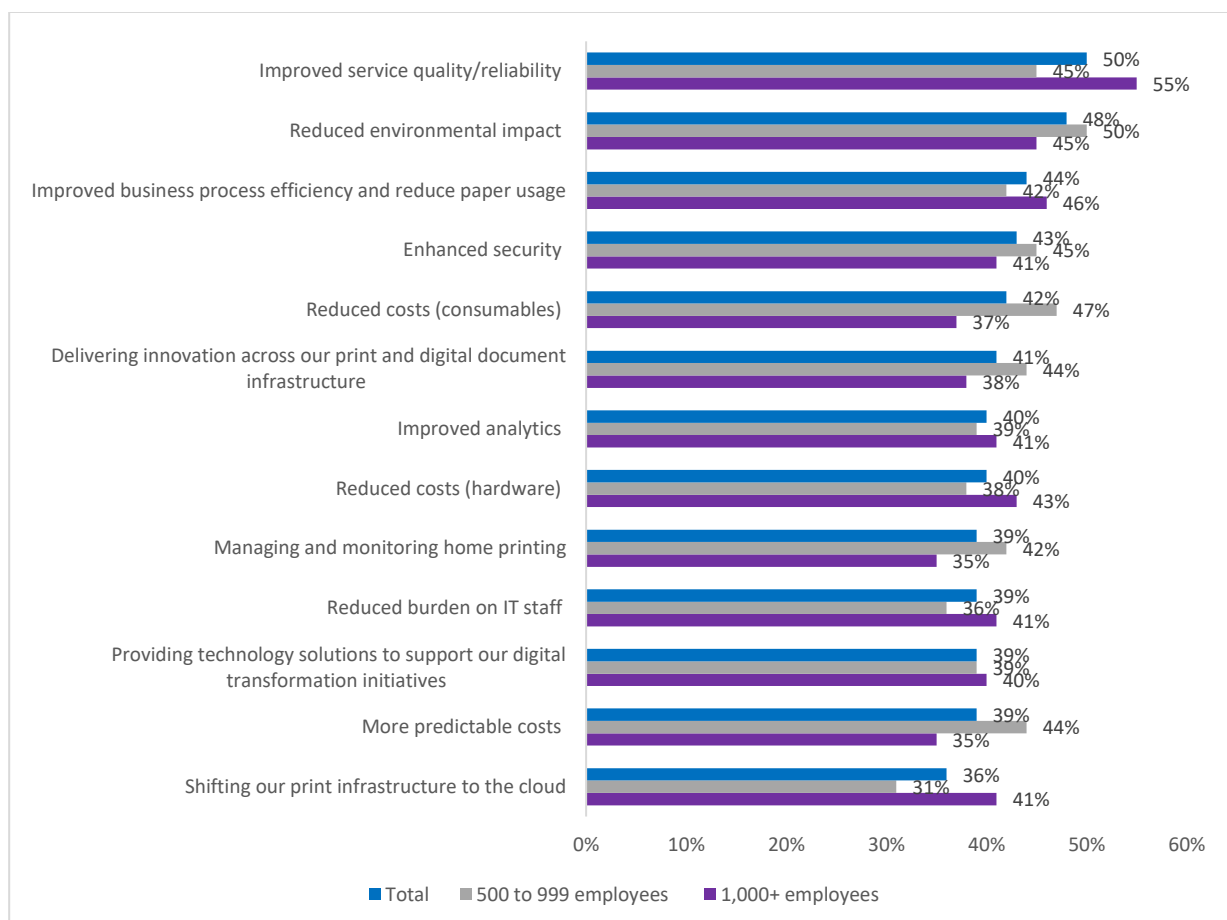


Figure 4. How important are the following benefits of MPS? (Percentage rating 'very important')

MPS Satisfaction

Where are MPS suppliers falling short?

Satisfaction levels have fallen since 2022, with 31% of respondents indicating they are very satisfied with their MPS provider in 2023, compared to 47% in the previous year. Just 25% of respondents in France and Germany indicate they are very satisfied, compared to 37% in the UK and US (Figure 5). Organisations using a fully outsourced MPS provider are more satisfied (38% indicate they are very satisfied) than those organisations using a hybrid approach, with some print management tasks undertaken in house (24%).

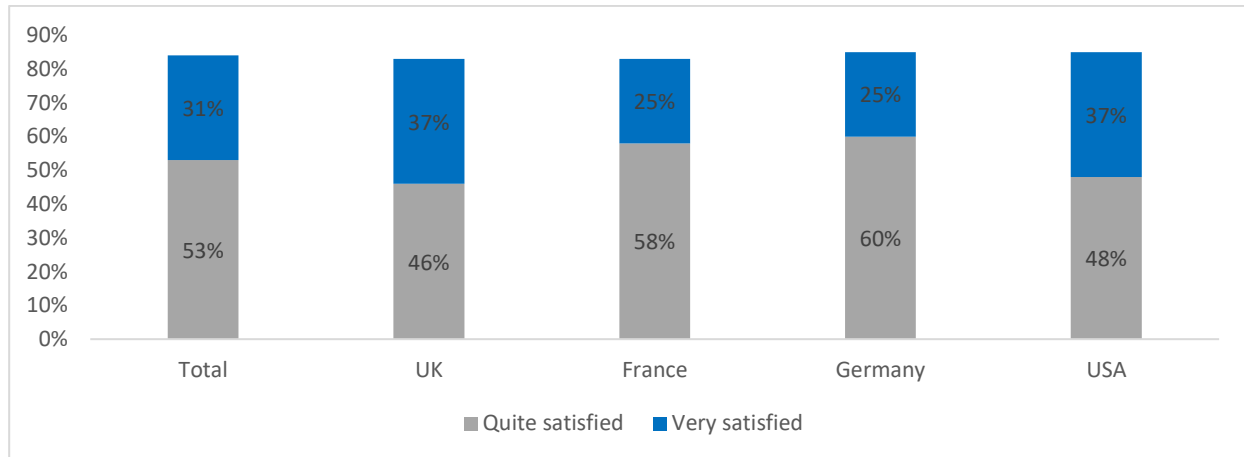


Figure 5. How satisfied are you with your MPS provider? (Quite and very satisfied responses)

When considering how effective MPS is across key areas, the biggest gap between customer expectation and effectiveness is around environmental impact (Figure 6).

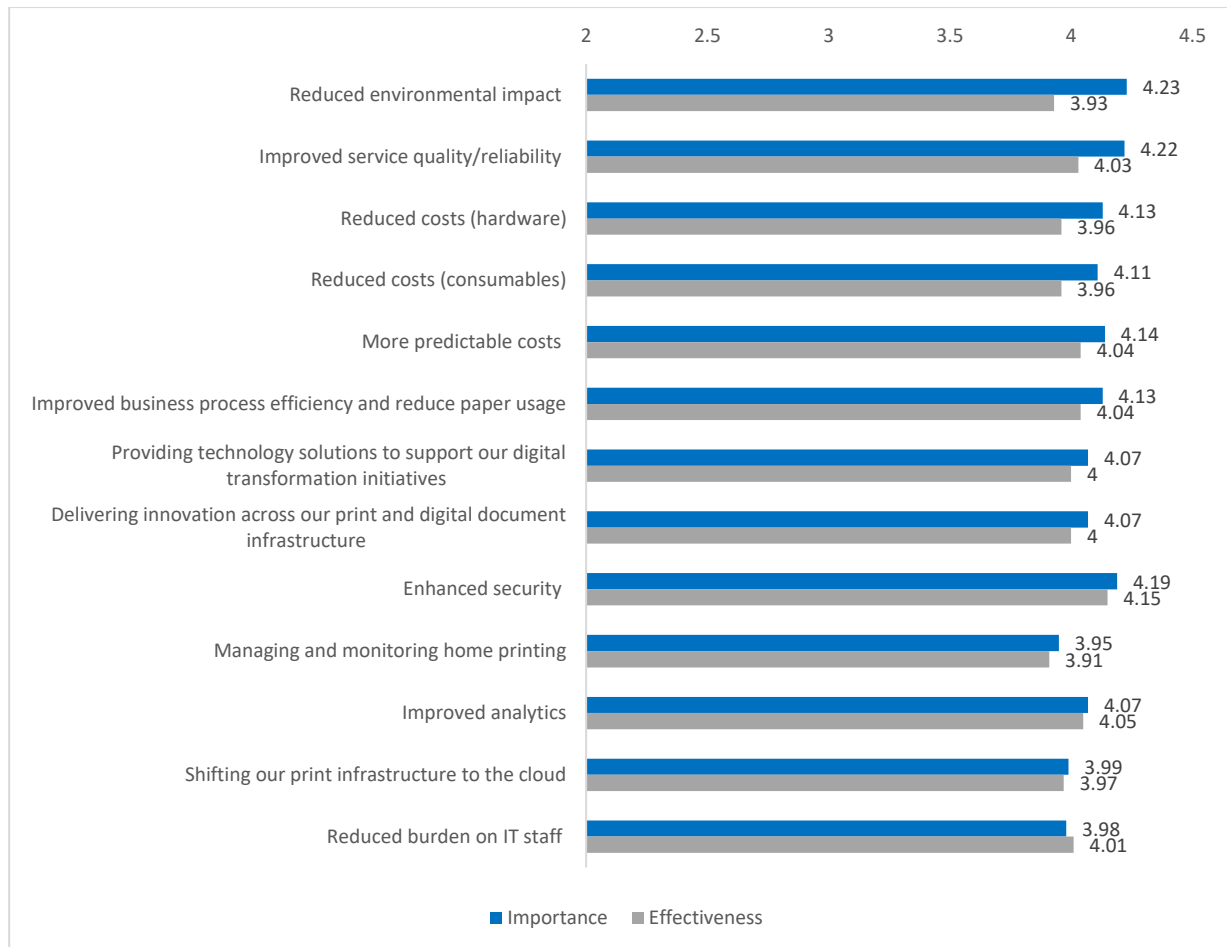


Figure 6. MPS satisfaction gap – average scores on a scale of 1 = not important/effective to 5 = very important/effective. Ranked by size of gap

Given the increasing importance of sustainability, this should be a top priority for MPS vendors moving forward. Other areas in which customers report significant gaps include service quality, reliability, and cost reduction for both hardware and consumables. Since these attributes are among the most important requirements identified by customers, failure to meet expectations in these areas risks impacting customer satisfaction.

MPS vendors have been more successful at meeting customer expectations in other areas, such as easing the workload of IT staff (the only area where respondents rate providers as more effective than the level of importance they place on it), migrating print infrastructure to the cloud, and enhancing analytics. They have also made progress in meeting customer demands for improved security, which is a crucial factor, as it ranks as their third most important requirement from MPS.

MPS Supplier Expectations

Cybersecurity expertise is the top requirement when organisations are selecting an MPS provider (Figure 7). Overall, 45% rate this as very important, rising to 51% amongst UK respondents. IT infrastructure expertise comes second overall, while in the US, it is rated as the equal top selection criteria compared to just 33% in Germany. This reflects a more mature market potentially for managed IT services in the US and acceptance of using a single supplier for both print and IT services.

Analytics expertise is in third place, at 41%. This rises to 46% among UK organisations and 52% in the US (equal with IT infrastructure expertise). Delivering data insights to improve the performance and efficiency of the print infrastructure is a key area where MPS providers can deliver increased business value to customers.

Notably, the breadth and depth of a vendor's hardware portfolio is the lowest-rated selection factor, with 35% indicating this as very important. However, it rises to 43% among the midmarket and drops to 28% among large organisations. This suggests that smaller organisations are more receptive to a standardised portfolio from a single supplier, while larger organisations may be more likely to operate a mixed fleet with multiple brands.

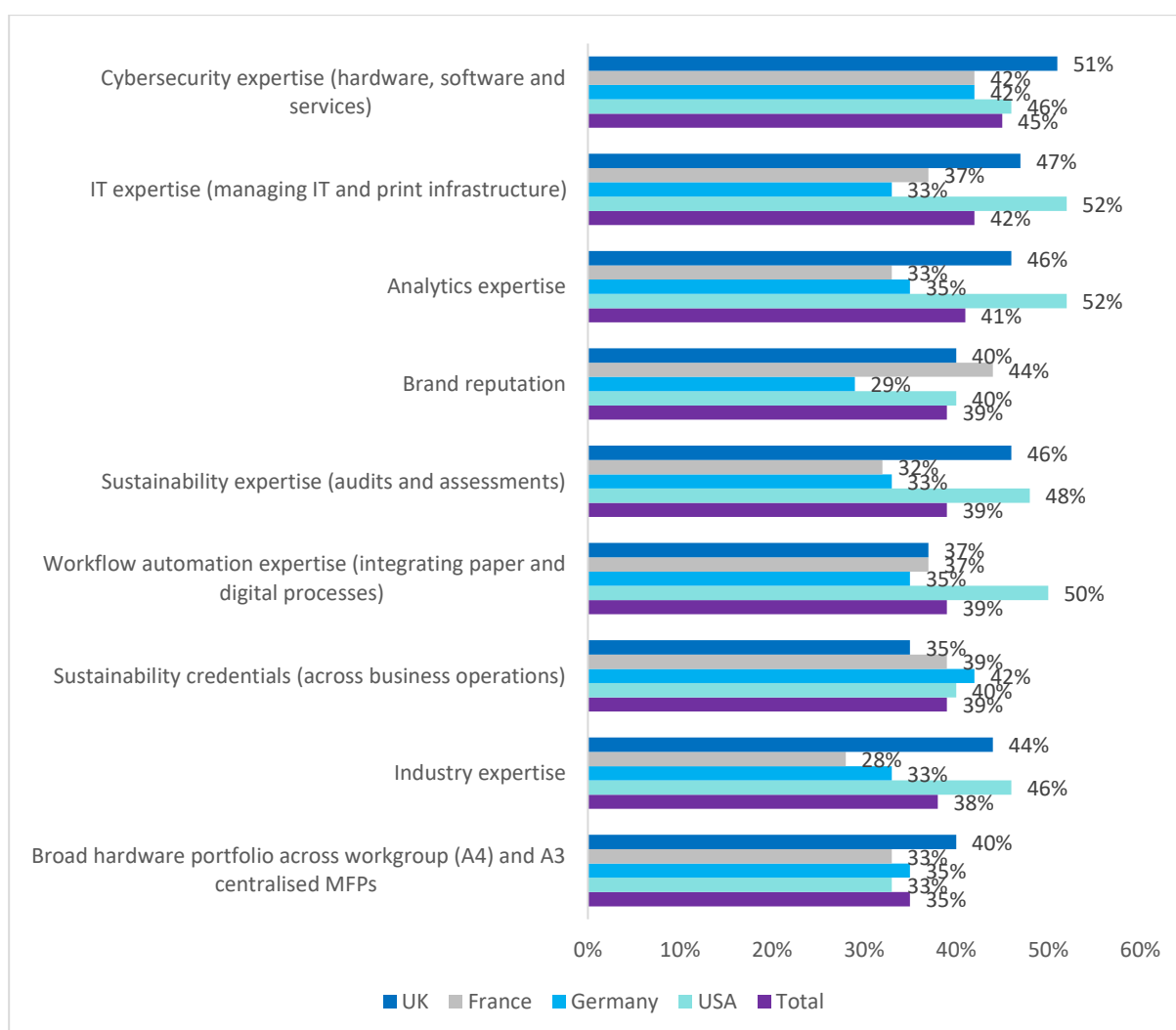


Figure 7. How important are the following factors to your organisation when selecting an outsourced MPS provider? (Percentage rating as very important)

Future Services

As organisations reconfigure their offices to address the needs of hybrid workers, they are looking for a range of services from MPS providers (Figure 8). Workplace services that include redesign of physical workspaces, audio-visual solutions, and workplace productivity tools are seen as a top requirement. Overall, 66% of respondents indicate that they are interested in workplace service offerings from MPS providers, rising to 75% in the US. This is followed by 45% that are interested in cloud print services and 42% for collaboration services. Notably, sustainability services are of most interest in France and Germany.

Managed security services and managed IT services are of most interest to US organisations (both 42%), with German organisations showing the least interest (29% and 15%, respectively).

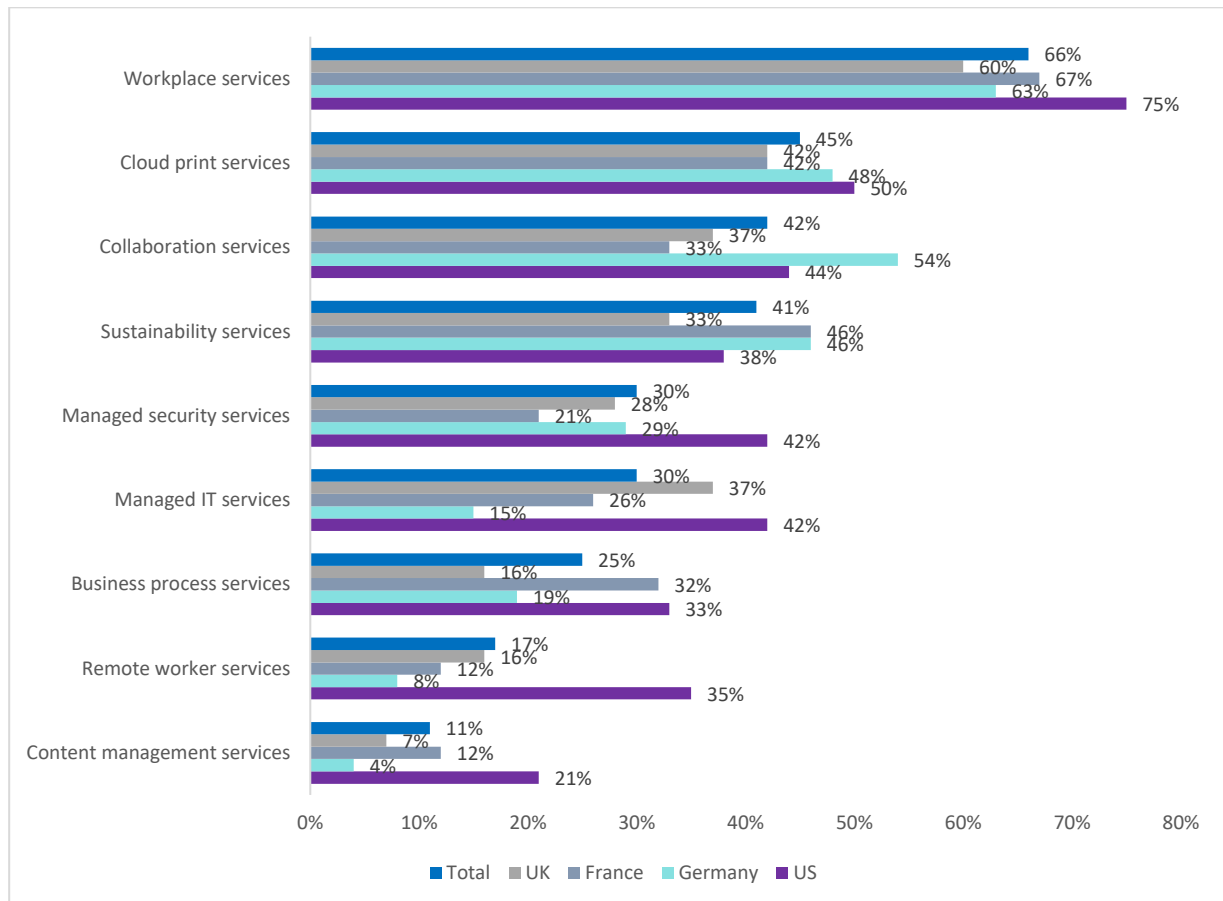


Figure 8. Which service offerings would make your organisation more likely to choose a specific MPS vendor?

Recommendations

This year we have seen a shift towards focusing on long-term goals, particularly improving environmental performance. This issue has become more significant over time, but is now at the top of many organisations' agendas due to government policy and consumer pressure. This shows the biggest gap between customer expectation and MPS vendor delivery.

At the same time, in a period of economic uncertainty, businesses are being forced to focus on cost control. MPS providers must offer great value by efficiently meeting customers' needs, as well as be seen as trusted advisers helping customers meet their print challenges and broader business goals.

Vendors can guide customers as they navigate changes, such as by refreshing printer fleets, managing the development of customers' estate portfolios, and migrating infrastructure to the cloud. However, they could expand their remit into supporting sustainability, digitisation, and IT security by targeting their offers at organisations at the forefront of these developments.

Supplier recommendations

- **Broaden collaborative and workplace services.** MPS providers should offer distributed collaboration systems that organisations are already investing in to support their distributed workforce, such as cloud-based synchronised file-share platforms, VoIP systems, and cloud-based document storage and management. Beyond a means for a distributed workforce to operate more cohesively, such services provide more secure document and records retention, a more auditable and reportable environment, and a better way of ensuring continuous access to systems via high-availability cloud systems.
- **Expand flexible and scalable cloud offerings.** At least some on-premise capability will still be needed, specifically for customers that want to maintain a degree of print management services on-premise for security and compliance. This may be an opportunity for providers to apply continued premium pricing to cover the additional costs of managing updates and patches, as well as offer discrete and bespoke support.
- **Provide broader home-printing/home-office support.** MPS providers should look at how best to support the home worker with suitable printers and support, as well as continuous monitoring and provision of consumables. Tying lifecycle management of home print devices into existing MPS agreements is useful for businesses: they can cut costs through access to better pricing for devices and consumables while gaining better control of the device as part of an overall MPS agreement.
- **Shift to a zero-trust security model.** Security services should extend to both information and device security – with focus on information, as this is the key to an organisation's ongoing health. Many leading MPS providers have expanded their security assessments and monitoring capabilities, which will be vital in closing security gaps around the hybrid workplace. Looking to provide more rounded solutions, such as data leak prevention (DLP) and digital rights management (DRM), will give customers the information control they need and could result in rapid payback.
- **Leverage the value of analytics.** As organisations continue to accelerate their digitisation initiatives, MPS providers should adapt data-driven business models to uncover opportunities for business process automation. Expectations around environmental analytics are also increasing, creating a demand for comprehensive assessments of the print infrastructure to identify ways to reduce energy usage and wasteful printing. MPS providers should also establish measurement criteria to monitor progress.
- **Build relationships with companies seeking to change their office footprints.** Such organisations are likely to need to reassess their requirements, which will create opportunities for new providers.

Buyer recommendations

MPS providers are expanding their provision of services to meet the long-term objectives of their customers. Buyers can take advantage of these developments by choosing providers that:

- **Look for a coherent solution to support the hybrid workplace.** Providers should be able to advise on and deliver home-office device provision, monitor usage and security patterns, and offer solutions that allow closer collaboration between the home and office environment, including secure print management alongside consumables replenishment services.
- **Consider support for the transition to a cloud print environment.** Providers should be able to deliver cloud consultancy and design solutions that are appropriate to the organisation's level of cloud maturity and ambition. They should offer clear metrics on the benefits of a cloud transition.
- **Evaluate workflow automation services.** Explore solutions such as business process automation, broader workplace technology solutions, and the benefits of the provider's wider partnership ecosystem to ensure digitisation can proceed at the desired pace and sophistication level.
- **Consider a zero-trust-based print infrastructure.** Security continues to be critical as IT environments evolve to a distributed, perimeter-less model. Buyers should evaluate zero-trust MPS approaches and how solutions integrate with existing tools such as SIEM and end-point detection and response, while ensuring devices remain protected and monitored by built-in security features.
- **Leverage analytics to gain continuous improvement and value-added services.** Analytics from the print environment can deliver valuable information around areas such as device and workspace usage patterns and service requirements.
- **Look for measurable sustainability benefits.** As supplier sustainability due diligence enters the realm of regulatory compliance, expect MPS providers to supply detailed data around the environmental and social impacts of their own operations. Buyers should look for solutions that contribute to key environmental targets, such as reducing energy consumption, waste, and carbon emissions.

Quocirca MPS Vendor Assessment

Quocirca's vendor assessment is based on a range of criteria that determines an overall score for market presence and completeness of offering. Each score is based on a scale of 1 to 5, where 1 is weak and 5 is very strong. This evaluation of the MPS market is intended as a starting point only. Please note that Quocirca's scoring is based on an unweighted model, although prospective buyers may wish to weight the scores to meet their own specific needs.

Strategy criteria

- **Enterprise customers.** The strength of the vendor's global enterprise customer base.
- **Vision and strategy.** The comprehensiveness of the vendor's MPS strategy, the quality of its overall value proposition and its evolutionary vision for MPS.
- **Maturity of offerings.** How long the vendor has been active in the market and how developed its offerings are.
- **Geographic reach.** A vendor's geographical reach, either via direct engagement or through partners or channels.
- **Market credibility.** The effectiveness of the vendor's initiatives to promote its brand, increase awareness of its service offering and influence market development. This also includes the clarity, differentiation and internal/external consistency of the vendor's market messages.
- **Alliances and partnerships.** The strength of the vendor's partner and alliance network.
- **Investment and dedicated resources.** The vendor's investment in its MPS portfolio and resources, and innovation that will add improvements in approach, processes or service offerings.

Completeness of offering criteria

- **Modularity of services.** The flexibility and scalability of the service portfolio to provide a customised offering.
- **Breadth and depth of service offering.** The range of services available, including complementary ones such as business process services and IT services.
- **Helpdesk capabilities.** Centralised helpdesk capabilities and integration, remote diagnostics and support.
- **Production printing.** Central reprographics department (CRD) or print-room services to support high-volume printing requirements.
- **Multivendor support and maintenance.** The vendor's ability to service and support third-party products.
- **Reporting.** The breadth and depth of capabilities to provide analytics and reporting.
- **Workflow automation.** Capabilities and expertise for business process automation – both software solutions and business process services. This includes solutions to support document capture, routing and integration with enterprise content management (ECM) systems.
- **Industry solutions.** Ability to offer industry software solutions in key vertical markets and industry alignment of sales force.

Figure 9 represents Quocirca's view of the competitive landscape for vendors that deliver MPS.

- **Market leaders.** Vendors that lead the market in both strategic vision and depth of service offering. Leaders have made significant investments in their service portfolio and infrastructure and are supported by strong delivery capabilities.
- **Major players.** Vendors that have established and proven offerings supported by demonstrable customer success.

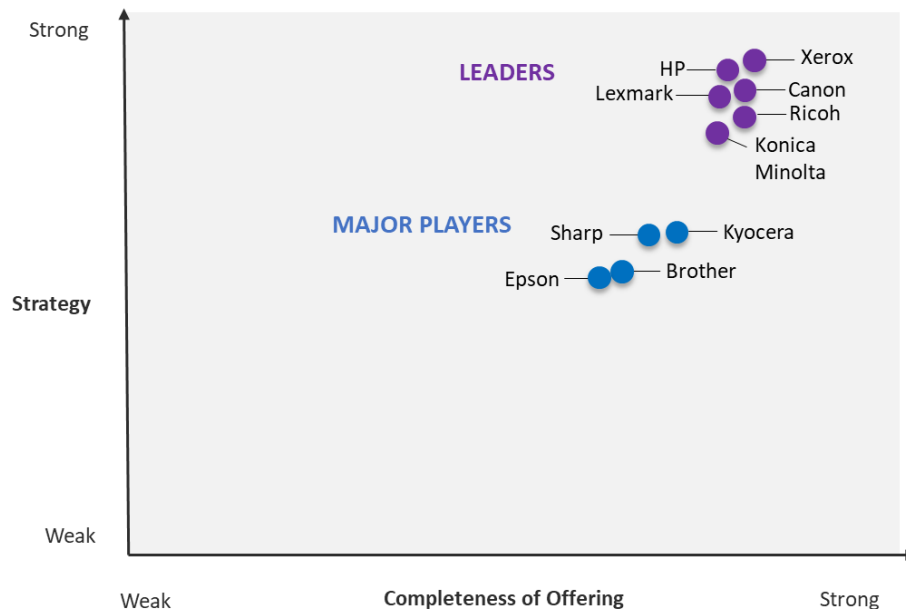


Figure 9. Quocirca MPS Vendor Landscape, 2023

The Quocirca Vendor Landscape is a graphical representation of Quocirca's opinion of the market and is based on Quocirca's scorecard methodology. This information is provided as a visual representation only and should be combined with other sources to determine the suitability of any vendor. Quocirca does not endorse any vendor, product, or service. Information is based on best available resources and opinions reflect judgment at the time. All opinions are subject to change.

Vendor Profile: Konica Minolta

Quocirca opinion

Konica Minolta has a well-established MPS offering called Optimised Print Services, which is now delivered under its wider Intelligent Connected Workplace (ICW) services portfolio. As part of its ICW strategy, Konica Minolta delivers a broad range of solutions and services that support customers in their digital transformation. The assessment and discovery phases of customer engagements include recommendations for workflow automation, network security, print optimisation, and information management.

Sustainability-led offerings

Konica Minolta offers environmental audits of the printer fleet using its bizWORKPLACE total cost of ownership (TCO) assessment tool. This assesses energy consumption devices as well as use of paper and ink/toner to identify opportunities for reducing waste. Other service offerings include rules-based-printing to ensure that resource-saving print settings and secure print release printing are applied by default to minimise waste.

Expanded security-led offerings

Konica Minolta's ICW services provide outsourced monitoring and management of print devices and systems, including device security profile management, vulnerability scanning and intrusion detection, and print policy enforcement. bizhub SECURE helps end users establish enhanced password protection and hardware security measures. bizhub SECURE Platinum and SECURE Ultimate also include BitDefender technology and offer further layers of security, such as audit logs and periodic device scanning.

Cloud-centric offerings

Konica Minolta has developed a flexible and scalable service portfolio within its core print business that is designed to support clients' migration from on-premise to SaaS and cloud platforms. Workplace Pure – its own IP cloud platform – is a device-agnostic service provisioning and management platform that provides a broad range of services including cloud print, document conversion, document translation, cloud fax, direct upload to cloud repositories, and more – all from a single source.

Cloud print services are an integral part of the ICW offering, and Konica Minolta continues to build out and enhance its cloud offering. Its portfolio includes Dispatcher Paragon Cloud, a secure SaaS solution for centralised print management; Workplace Pure, which provides access to a suite of cloud business services in one marketplace; and Y Soft SAFEQ Cloud.

AI-driven innovation

Konica Minolta has integrated artificial intelligence, including image analysis and diagnosis technology to quantify image defects in printing presses and identify the source of image problems, into its printer hardware. Additionally, sensing and AI technology can automatically distinguish between different paper types that affect print quality. The company is also developing and implementing AI-OCR and content analysis with AI/ML/DL technologies as unique selling points for its IIM solutions.

Flexible pricing

Pricing models are aligned with customer preferences for payment. In the US, OneRate is a programme that simplifies, streamlines, and reduces print costs, providing customers with invoicing predictability. OneRate also provides expert remote and on-site support, eliminating metre reads, overage charges, reconciliation, escalators, hidden fees, and variable costs. It offers similar local programmes in Europe, which are individually designed depending on the national operating country.

Key differentiators

- **Broad range of services.** Konica Minolta's Intelligent Connected Workplace portfolio encompasses a broad range of solutions that address customers' digital transformation needs. Konica Minolta's hybrid working solutions extend beyond print to also include digital document and workflow solutions.

- **IT services expertise.** Konica Minolta's managed IT services offerings enable it to offer integrated MPS and IT services to customers that prefer a single supplier to manage both elements of the IT infrastructure. Capabilities and support vary by region.
- **Cloud-centric approach.** Cloud print services are an integral part of the ICW portfolio, and Konica Minolta continues to build out and enhance its cloud offering.
- **Sustainability focus.** Konica Minolta offers a range of sustainability-led products and services. This includes the bizhub Refreshed programme in Europe, which offers refurbished devices, an Eco Calculator tool, and environmental analytics.

About Quocirca

Quocirca is a global market insight and research firm specialising in the convergence of print and digital technologies in the future workplace.

Since 2006, Quocirca has played an influential role in advising clients on major shifts in the market. Our consulting and research are at the forefront of the rapidly evolving print services and solutions market, trusted by clients seeking new strategies to address disruptive technologies.

Quocirca has pioneered research in many emerging market areas. More than 10 years ago we were the first to analyse the competitive global market landscape for managed print services (MPS), followed by the first global competitive review of the print security market. More recently Quocirca reinforced its leading and unique approach in the market, publishing the first study looking at the smart, connected future of print in the digital workplace. The [Global Print 2025 study](#) provides unparalleled insight into the impact of digital disruption, from both an industry executive and end-user perspective.

For more information, visit www.quocirca.com.

Usage Rights

Permission is required for quoting any information in this report. Please see Quocirca's [Citation Policy](#) for further details.

Disclaimer:

© Copyright 2023, Quocirca. All rights reserved. No part of this document may be reproduced, distributed in any form, stored in a retrieval system, transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without express written permission from Quocirca. The information contained in this report is for general guidance on matters of interest only. Please note, due to rounding, numbers presented throughout this report may not add up precisely to the totals provided and percentages may not precisely reflect the absolute figures. The information in this report is provided with the understanding that the authors and publishers are not engaged in rendering legal or other professional advice and services. Quocirca is not responsible for any errors, omissions, or inaccuracies, or for the results obtained from the use of this report. All information in this report is provided 'as is', with no guarantee of completeness, accuracy, timeliness, or of the results obtained from the use of this report, and without warranty of any kind, express or implied. In no event will Quocirca, its related partnerships or corporations, or its partners, agents, or employees be liable to you or anyone else for any decision made or action taken in reliance on this report or for any consequential, special, or similar damages, even if advised of the possibility of such damages. Your access and use of this publication are governed by our terms and conditions. Permission is required for quoting any information in this report. Please see our [Citation Policy](#) for further details.