Cloud Print Services Landscape, 2024

How cloud adoption is driving print infrastructure modernisation

The Cloud Print Services Market Landscape, 2024
Excerpt report: Lexmark
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QUOCIRCA

Executive summary

As the era of hybrid work becomes embedded, organisations are increasingly focused on digital transformation and the need to build a resilient IT infrastructure capable of adapting to the future. For many, the cloud has underpinned this journey, with its high availability, flexibility, and scalability helping businesses become more agile, while simultaneously helping them build resilience through advanced data compliance and security. The cloud can also help organisations manage both financial and environmental costs more closely than is possible when operating a traditional on-premise environment.

Cloud-based print management can reduce the burden on IT teams and lower both financial and environmental costs associated with procuring and managing print servers. Conventional print management typically relies on on-premise print servers and incurs a high IT administrative burden to manage driver installation, device configuration and compliance, device monitoring, reporting and management, server and queue management, firmware updates, and app deployment and maintenance. However, a cloud-based model removes the need for many of these tasks. As in-house teams work towards full digitisation, they will be grateful for any efficiencies to lessen the responsibilities placed upon them.

Although many organisations believe the cloud to be more secure than an on-premise environment, some consider security concerns to be the main barrier to cloud print adoption, along with unclear cost benefits and doubts about functionality and performance. Many are increasing their print server fleet simultaneously with their move to cloud services, which suggests hybrid models will become dominant in the immediate future.

Most print manufacturers and ISVs offer cloud-based solutions and services to cater for the different public, private, and hybrid cloud approaches customers are pursuing. Cloud print services and solutions encompass serverless printing, cloud-based print management and remote monitoring, and hybrid cloud print management platforms, which may be managed internally or by third-party managed print services (MPS) providers. Cloud print services may also include other adjacent services and solutions around digitisation, workflow, security, and collaboration.

This report highlights key market trends for cloud print services, covering offerings from both manufacturers and independent software vendors (ISVs). It draws on primary research conducted by Quocirca in 2024.

Key findings include:

- **The cloud print market is characterised by a diverse range of offerings from print OEMs and ISVs.** In Quocirca's assessment of the cloud print services market, which includes the major MPS providers, Xerox is considered to have the broadest cloud print services portfolio, covering secure print and capture along with comprehensive reporting for both enterprises and SMBs. Other vendors in the leadership category include Canon, HP, Konica Minolta, Lexmark, and Ricoh. Major players include Brother, Kyocera, Sharp, and Toshiba.
- **Cloud print management solutions have been widely adopted and will continue to grow.** According to Quocirca's latest research, 69% are already using a cloud print management solution, rising from 55% in 2023. The majority continue to operate a hybrid cloud environment, with 74% saying they manage their print environment using a mix of on-premise and cloud. Although just 4% say they manage their print environment fully in the cloud now, this rises to 18% believing that their print environment will be fully in the cloud by 2026.
- **IT admin tasks associated with traditional print driver deployment is a major challenge.** Overall, 49% indicate that the IT administration burden is the top challenge, followed by the complexity of print driver deployment (42%). Security risks are also a key challenge, with 38% indicating that potential security risks due to outdated drivers not being updated are a concern, rising to 43% among organisations with over 1,000 employees. For providers, taking on as much of this burden as possible and removing it from the organisation's IT team will be seen as positive across the board.
- **Despite the transition to the cloud, many are deploying more print servers.** Despite the tangible benefits of reducing or eliminating print servers, only 14% of organisations are doing so. Overall, 58% of

organisations plan to increase the number of print servers in the coming year, rising to 71% in the US and 68% among those working in finance organisations. Companies that consider print critical or very important are more likely to be increasing the number of print servers than those less reliant. The need to support a more distributed workforce may be leading this increase in print server deployment as more workgroup printers are introduced, although this will create challenges for IT teams, especially around administration, managing complexity, and security. It is apparent that providers are not positioning cloud-based solutions strongly enough – and this may have long-term consequences as more of an organisation's overall IT platform moves to the cloud.

- **Organisations operating a multivendor fleet are more likely to have increased the number of print servers**. In this study, 73% of respondents indicate they operate a multivendor fleet. Over two-thirds of these (68%) have increased their print server volume, compared to just 34% of those using a standardised fleet. Although this reflects the traditional on-premise model of managing a multivendor fleet, 53% of those operating a multivendor fleet say their top print management challenge is IT administrative burden, compared to 43% operating a standardised fleet. This should be seen as a major opportunity for providers: lowering the IT administrative burden is a way of freeing up IT staff's time to work on areas that add to an organisation's overall value.
- **Security is the top barrier to cloud print management adoption.** Overall, 32% of respondents say protecting corporate data is a top concern, rising to 37% in the US and 41% in the industrials sector. This is slightly lower than seen in 2023, in which 36% cited security as a barrier. Functionality is the second most prevalent concern, with one-quarter (25%, rising to 30% in France and 28% for larger organisations) citing this as a barrier, and lack of demonstrable cost savings and impact on performance come in joint third place overall (24%, respectively). Providers do not seem to be getting messages across as to how much better the cloud can be in managing security through managing zero-day threats more effectively, or how data sovereignty can be more easily managed through cloud policies.

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Vendor landscape – Cloud MPS vendors

Quocirca's vendor landscape for the cloud print services market includes the major MPS providers offering cloud-based services (Figure 1). Independent software vendors (ISVs) have not been included in this vendor landscape. This evaluation of the cloud print services market is intended as a starting point only. Please note that Quocirca's scoring is based on an unweighted model, and prospective buyers should use this as guidance alongside the more detailed vendor profiles to assess suppliers based on their specific requirements.

Quocirca has based this landscape on vendors' completeness of offerings and strategies across the following key areas:

- **Overall cloud strategy and vision.** The comprehensiveness of the vendor's cloud strategy, the quality of its overall value proposition, and its future roadmap.
- **Maturity of offerings.** How long the vendor's cloud print services offering has been established in the market.
- **Geographic reach.** A vendor's geographical reach, either via direct engagement or through the channel.
- **Breadth and depth of service offering.** Provisioning, deployment, and implementation of cloud-based print services, as well as support for hybrid cloud models.
- **Multivendor support.** Support for a mixed-fleet environment.
- **Digital workflow automation.** Adjacent cloud-based services to optimise print and digital workflow automation.
- **Cloud security and zero trust.** Approach to zero-trust and cloud security models.
- **Analytics and reporting.** The breadth and depth of capabilities to provide analytics and reporting.
- **Channel tools.** Flexible cloud platforms to support channel partners.

Vendors are categorised as:

- **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 on a regional basis, and may be more focused on a single brand environment.

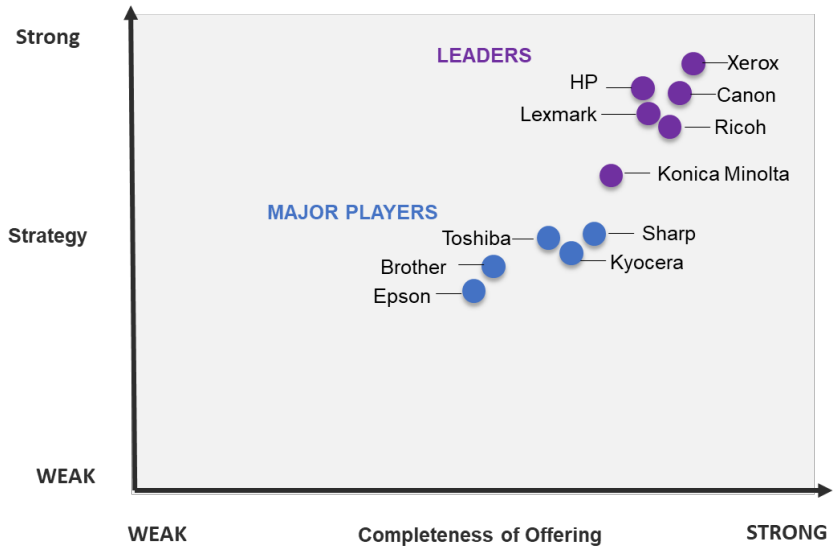

Figure 1. Quocirca Cloud Print Services Landscape, 2024

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 the best available resources and opinions that reflect judgement at the time. All opinions are subject to change. Where a vendor does not submit a survey, Quocirca bases positioning on analyst knowledge.

Vendor profile: Lexmark

Quocirca opinion

Lexmark retains a leadership position in Quocirca's assessment of the Cloud Print Services market in 2024. The company is deepening its commitment to its cloud services platform, enhancing scan workflow capabilities and augmenting its reporting features with advanced artificial intelligence (AI) and machine learning technologies. This is bolstered by strong security measures and a flexible implementation process.

Comprehensive cloud print and scan platform
Lexmark Cloud Services, launched in 2018, is designed as a versatile, multi-tenant platform that caters to the varied needs of both large corporations and SMBs. It is distinguished by its extensive suite of cloud solutions, which cover device and fleet management, print management, and document workflow processes.

Lexmark's Cloud Print Management platform is one of the few products in the market that are fully featured (secure printing, scan workflow) almost on parity with its on-premises print management product. It is particularly suitable for companies operating a distributed printer fleet. The Lexmark Cloud Bridge connectivity suite supports a variety of print environments through different connectivity agents. This ensures consistent support across a range of fleet configurations – centralised, decentralised, or USB-connected devices.

Robust security
Lexmark Cloud Services handles the full identity management life cycle and manages user credentials in a secure cloud-based authentication system. As print servers are not required, print jobs are sent to the Lexmark Cloud, where they reside in a personal queue until securely released through either PIN or badge authentication. For organisations that prefer not to send their documents to the cloud, Lexmark provides a hybrid option in which only metadata is sent to the cloud, with print jobs not leaving the network.

Enhanced scan workflow integration
Lexmark stands out for its broad range of cloud productivity applications. These include a variety of cloud capture and routing applications that streamline scanning workflows. Lexmark Scan Management provides secure scanning of documents to cloud repositories. Lexmark plans to launch its Cloud Solutions Center in Q3 2024 – a platform that will provide a central point for users to create cloud-based workflows, including the ability to capture (scan email and digital upload), process (translate, OCR, redaction), and route documents (via SharePoint, OneDrive, Google Drive, Dropbox, and Box), as well as print.

As organisations look to gain more efficiency around print management and eliminate the use of print servers, Lexmark Cloud Services is a good choice, particularly for organisations operating a standardised Lexmark environment that can fully leverage the breadth of Lexmark's print and scan workflow solutions.

Product overview

Lexmark Cloud Services (LCS) is a single, integrated platform that enables all of Lexmark's cloud-based offerings, including fleet and device management, print, scan, and document management. LCS also serves as an advanced services platform for Lexmark direct and partner-led MPS engagements, enabling access to predictive services for supplies replenishment and break/fix actions. Lexmark has also expanded the use of AI/ML algorithms within its Cloud Print Management and Cloud Fleet Management functionality to enhance visualisations and add new data sets into its customer governance portfolio, as well as incorporate new data collection paths into its Cloud Bridge suite.

Lexmark Cloud Print Management (CPM)
Lexmark Cloud Print Management is charged on a cost-per-user or cost-per-device basis, and it is easy to add new users and devices as required. CPM enables users to send documents from any device, including Chromebooks, and retrieve them from any enabled Lexmark printer or multifunctional product once they authenticate. It also allows guest printing without the requirement for visitors to join the local network.

The print queue resides in Lexmark's secure multi-tenant cloud, enabling organisations to eliminate the need for physical print servers and completely offload tasks such as print driver management, print queue management, and premises-based software maintenance.

Data waiting to be uploaded to Lexmark Cloud Services is protected at rest using AES-256 encryption. While the data is in transit to the Lexmark Cloud, TLS protects the data. Once the incoming print data is converted to a printer-ready format, it is again encrypted using an AES/CBC 256-bit encryption key unique to each file.

Microsoft Universal Print integration provides a connector that enables Microsoft Universal Print to submit jobs through CPM, while Linux Lexmark Print Management Client (LPMC) provides a version of the LPMC for submitting jobs into CPM from Linux.

Cloud Scan Management
This enables the easy conversion of physical documents into a digital format by scanning them directly into a cloud-based file-sharing system. The cloud-based portal enables users to add shortcuts to a Lexmark-enabled device for scanning directly to remote file-sharing services such as Microsoft OneDrive, SharePoint, Google Drive, Dropbox, and Box.

Lexmark Cloud Bridge technology
This enables all types of print devices and complete fleet network environments to connect to Lexmark's cloud infrastructure in a simplified, secure, flexible manner. Cloud Bridge leverages the cloud and IoT to simplify and optimise print environments, as well as increase uptime through predictive support capabilities such as AI-driven automatic supplies replenishment and predictive service.

Lexmark Cloud Fleet Management (CFM)
This enables Lexmark partners to remotely secure, control, monitor, and manage customers' fleets. After a one-time set-up, printers can be managed from anywhere in the world without the need to go on site or be on the same local network. Key features include automated firmware and security updates; new device discovery and configuration; days to depletion monitoring, which uses sophisticated predictive algorithms to calculate and display the number of days until a device's toner will run out; and predictive alerts for service support.

Lexmark Translation Assistant
This provides real-time document translation services. Customers can scan documents in the original language using a Lexmark MFP, select the appropriate output language from dozens of choices, and receive a translated document within minutes.

Key differentiators

- **True, multi-tenant cloud architecture.** Lexmark Cloud Services was architected from the beginning to be a true cloud platform with multi-tenant configuration that keeps customer and partner information segmented, secure, and private.
- **Cost-efficient for a distributed fleet environment.** Lexmark Cloud Print management eliminates the need for print servers, reducing both financial and environmental costs associated with print server procurement and maintenance. The Lexmark Cloud Bridge connectivity suite supports a variety of print environments, ensuring consistent support across a range of fleet configurations – centralised, decentralised, or USB-connected devices.
- **Extensive print and scan workflow support.** Lexmark offers a range of cloud capture and routing productivity applications to help Lexmark customers streamline scanning workflows. This includes Lexmark Scan Management, which provides secure scanning of documents to cloud repositories.
- **Strong security.** Lexmark Cloud Services supports all SAML 2.0 and OIDC-compliant identity management systems, features 256-bit AES encryption and end-to-end TLS/SSL, and requires firmware and apps to be digitally signed. It allows for secure printing and scanning through PIN or badge authentication and job accounting and tracking.

Buyer recommendations

The market has been going through a complex period, with a mix of proprietary print management systems mainly using on-premise platforms now beginning to move over to a more standardised cloud-based platform. However, this does not mean a full cloud-only platform will be right for everyone. The key is to find a platform that meets your organisation's needs now, but that also has the flexibility to change to meet future needs – and adapt to changes in future technologies.

Although many organisations will still have dependence on print management software installed on physical on-premise servers, many should now be finding ways to migrate away from such systems toward something that is more flexible. Serverless platforms, whether via public cloud or on-premise virtualisation, make particular sense to SMBs, as well as to larger organisations looking to minimise the number of print servers they are operating.

The cloud print services market continues to evolve. There is a move away from cloud-based systems, with only a low amount of per-device functionality via early-generation universal print drivers, to ones where the default functionality is almost equivalent to that obtained via complex and hard-to-maintain dedicated drivers. This is then leading to better support for mixed printer fleets and freeing up IT administrators to concentrate on adding value to an organisation's business. However, buyers must ensure that the solution chosen is suitable for the organisation's needs.

- **Evaluate functionality carefully.** There may be significant disparities between on-premise and cloud print management solutions. Ensure that prospective solutions can deliver the features you need, such as pull printing, analytics, and reporting.
- **Explore the differences between on-premise, hybrid, and fully cloud.** On-premise solutions are expensive in both direct costs and ongoing management. However, although a full cloud-based platform may offer fixed pricing and lower needs for administration, it may not meet the organisation's needs around security and data sovereignty. For many organisations, this will result in the use of hybrid solutions, with some parts of the print environment managed on-premise and others in the cloud.
- **Compare universal and dedicated print drivers.** Historically, universal print drivers have only provided basic functionality across a printer fleet – even where it is a standardised fleet. Organisations often had to implement dedicated drivers to support the advanced functions of the more complex MFPs. Now, however, universal drivers are improving and beginning to compare favourably against dedicated drivers. Buyers must evaluate what they require and ensure they get what they need.
- **Factor document security demands into decision-making.** Buyers should look for data encryption throughout the whole print management process. Alongside this, they should also evaluate information protection support such as data leak prevention (DLP) and digital rights management (DRM). These are unlikely to be included in the basic product, and therefore buyers need to ensure that third-party solutions can be easily integrated into the print management system.
- **Implement output security tools.** Buyers need to ensure that any chosen solution also allows for user authentication at any device using smart card release or other forms of near-field communication (NFC)/Bluetooth, biometrics, or PIN printing. This not only provides increased information security, but also cuts down on paper and toner/ink wastage.
- **Adopt identity access management and multi-factor authentication.** Identity management is becoming a much stronger focus for many providers, with integration into existing identity access management (IAM) systems on offer. Buyers need to ensure that a chosen solution allows such systems to be directly integrated.
- **Ensure zero-trust support is available.** The print environment must now be seen within the broader area of IT and information management. As the attack surface offered by intelligent devices both in the home and at the office increases, printers are increasingly being targeted as a means of accessing an organisation's network. Buyers must ensure that any chosen system fits within their organisation's security posture and existing security tools – not just for now, but also for the future. Zero-trust architectures are

designed to create a cohesive security approach – buyers should ensure that any solution fits in with such an approach.

- **Analyse reporting and analytics capabilities and integration.** Print management solutions offer extensive reporting on printer utilisation, device performance, consumables usage (toner and paper), and service information. With print devices now being sophisticated internet of things (IoT) devices, there is a growing need to ensure that data can be aggregated via other systems. Buyers should evaluate solutions as to their integration with traditional business intelligence tools, along with advanced reporting around environmental analytics and user behaviour.
- **Seek clarity over pricing models.** Pricing models for cloud print management software platforms should be considered, as these can vary. Some providers offer per-device, per-user, and per-queue models. This can have an impact depending on how many users or devices are deployed, particularly where hybrid working needs to be taken into account. Buyers need to ensure that flexibility as to increasing or decreasing numbers of devices or users, as well as fluctuations in throughput, are allowed for.

Supplier recommendations

The cloud has continued to become more mainstream – although some users have found that their approach was ill-considered, and 'cloud repatriation' (a move back to on-premise) has occurred in a few cases. To cover all bases, a mixed capability of equally functional cloud and on-premise solutions will allow customers to move along the cloud journey at their own pace – even retreating from the cloud if they feel that they made the wrong decision. Suppliers of cloud-based print services and solutions should consider the following:

- **Offer education and consultancy to address buyer uncertainty.** Print buyers have not historically been general IT buyers. As such, the print environment has been slower than other areas of IT infrastructure in its move to the cloud. Increasingly, print is being seen as part of IT, and this is accelerating the migration of print to the cloud. This must be a wakeup call to the channel to ensure that MPS solutions are fit for the cloud – or are cloud-native. Customers do still need educating on why a move to cloud-based MPS makes sense – arguments around availability, more manageable costs, and better updating of available functionality should be used as preliminary discussion points with any customer (or prospect) still wary of such a move.
- **Adapt solutions to customer cloud preferences and maturity.** Few organisations are operating on a single-cloud platform. Due to the nature of providers setting up on different underlying cloud architectures, most organisations will be using multiple different platforms. Although the ultimate goal around cloud usage may be a hybrid or single-cloud model for organisations, those selling cloud-based print management solutions must recognise that each variant of the cloud offers its own advantages and obstacles to adoption. Standardisation on how MPS services operate will make interoperability across such disparate clouds easier.
- **Ensure security is adequately addressed.** Cloud security is still not fully trusted by end users – even though the majority of cloud platforms have demonstrably better levels of security than most on-premise platforms. Providers must be able to address such perceptions and demonstrate (via use of security standards such as ISO:27001) that the solution is highly secure and meets all their needs.
- **Look to integrate with existing security platforms.** Building all security into an MPS solution is both ill-advised and expensive. Identity access management (IAM) and security information and event management (SIEM) systems are already widespread in the market, offering mature security solutions. The channel should look to integrate into systems that are already strong in the enterprise environment, such as Okta and Ping Identity for single sign-on (SSO)/IAM and Cisco Splunk, LogRhythm, and Fortinet for SIEM systems. At a minimum, multi-factor authentication (MFA) systems should be implemented, preferably using biometrics or mobile device-based apps.
- **Accelerate the move from a traditional to a consultative mind-set.** The future of the channel is no longer a transactional model that depends on the customer acquiring new devices or automatically renewing maintenance annually, but one that works with the customer to uncover extra areas where more value-

add can be built in over time. Successfully working with customers in this manner will lead to extra revenue accruing for the provider.

- **Look outside print-specific offerings to adjacent services.** Alongside cloud-based print management services, providers should look at other workplace services, particularly in the areas of collaboration, videoconferencing, managed desktops, and workflow. These can be low-hanging fruit where good margins can be made. Working with other suppliers in areas such as managed security and other managed IT services is also possible.

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.

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