ENABLING TRUE HYBRID WORK THROUGH CLOUD-BASED PRINT SERVICES

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Long-Term Hybrid Work Raises New Print Security and Compliance Challenges: Is Your Organization Ready?

From Remote Working to Fully Hybrid Work

The unprecedented health crisis experienced in the past two years has forced organizations around the world to implement new remote working policies across the entire knowledge workforce. This sudden shift to multiple dispersed access points has created huge challenges. Initially, the enterprise focus was on productivity and business continuity to ensure, for example, seamless online-offline communication and collaboration, remote system access, and digital workflow.

However, as the scale and duration of the pandemic became clearer, organizations have acknowledged the need for a much more holistic approach to build full resilience and to be prepared for new shocks in the future. Many have set up a fully hybrid work model, one in which knowledge workers are digitally enabled to operate from home, office, or any other location in a secure and compliant fashion.

Across all sectors, organizations have added countless access points, increasing exposure to security and compliance breaches. Security issues related to the use of home broadband have been a common challenge forcing organizations to invest in security solutions to remotely access enterprise applications (cited as a top 3 investment during the crisis). As for mobility, also on security grounds, hybrid working is high on the agenda in companies' transformation journeys, forcing them to abandon once and for all the "security within the firewall" policy and switch to a "zero trust" policy that best suits increasingly borderless IT infrastructures that often grant access to providers and clients as part of their day-to-day processes.

After nearly two years of pandemic learning, data security and compliance are now paramount for organizations to enable a full shift to hybrid work. In this transformation, print has been widely overlooked and rarely considered critical for business continuity.

But questions are now being raised:

- What is the role of print in the hybrid world?
- Are managed print services (MPS), with a focus in the office, still fit for purpose?

AT A GLANCE

KEY STATS
- » The daily percentage of total workers in the office is expected to be under 42% in 2022.
- » 66% of organizations interviewed by IDC expect their workforce to work from home on an ad hoc basis with no set rules post–COVID-19 vaccine.
- » 25% of organizations interviewed by IDC say adherence to compliance has been a key process challenge during the pandemic.

KEY TAKEAWAYS
- » Security and compliance are paramount to ensure a full shift toward a true hybrid work model.
- » Often overlooked, print is a key element to complete organizations' DX journeys.

- How can organizations continue to maintain control and security over their entire document workflow across all new access points?
- How can organizations control the cost of home printing?

This IDC Technology Spotlight answers these questions, assessing the current situation with regards to print in corporate environments and analyzing how cloud-based print services can securely integrate print in a hybrid work context.

Benefits of Cloud-Based Print Services for Hybrid Work

Recent IDC research demonstrates that, despite the strong acceleration in digital transformation (DX), print is still a component of day-to-day business activity. During the lockdown, the shift to home working required many people to print at home. Employees continued to rely on paper as they had done in the office for a wide array of applications.

However, unmanaged home printing cannot be accurately billed and can make companies regress on grounds of security and compliance. IDC research conducted in 2019 shows that even before COVID-19 12% of European organizations reported some form of print-related security or compliance breach. This figure was 57% for enterprises with more than 10,000 staff, which usually track this aspect more closely than smaller organizations.

Recent GDPR enforcement cases provide tangible examples of how printed documents can easily lead to breaches if not managed correctly:

- The Bucharest World Trade Center Hotel was fined for using a printed paper list to check breakfast customers. The list, containing personal data of 46 clients who stayed at the hotel, was photographed by unauthorized people outside the company and disclosed through online publication.
- On another occasion, a Hungarian accounting firm was fined for failing to dispose of a printed list of its customers. The list, which also contained personal data, was accessed by unauthorized persons.
- The Italian data protection authority (DPA) imposed a fine on an Italian healthcare organization for the transfer of health data to the wrong person. A patient's medical documents were sent by mail both to the affected patient and to another patient. The incident occurred due to an error in the printing process due to a lack of pull printing solutions.

Considering the enormous shift to home printing during the COVID-19 crisis, IDC estimates that print-related security breaches will have surged through the pandemic. The rapid shift to remote working has led to a lack of security, visibility, and control of sensitive customer information in printed form. Unsurprisingly, 25% of companies recently interviewed by IDC said that adherence to compliance was among their key process challenges during the pandemic.

To overcome this, organizations have taken different approaches to home print. In security-sensitive verticals such as banking and healthcare, many organizations — recognizing the risk of security and compliance breaches — have implemented a zero-print policy. Others have asked

staff to sign waivers to protect the company from any responsibility, a private agreement that is unlikely to be enforceable in the case of a breach.

In most cases, however, organizations have simply allowed home printing with no specific security policy around it. IDC's 2020 peripheral tracker data shows that many companies invested in new home imaging equipment including printers and scanners during the lockdown. A much higher percentage have relied on existing employees' home printers to meet hardcopy document needs.

All these approaches are not sustainable in the long term. From a finance perspective, the lack of control on home printing gives way to unstructured reporting on print expenses as well as spiraling and unpredictable overall costs.

From a sustainability standpoint, the shift from centralized office printing to dispersed and uncontrolled home printing is likely to lead to more printed documents, not least because of a lack of a print management system, higher energy consumption, and higher environmental impact. This could stop companies from meeting long-term environmental commitments.

But it is in security and compliance where the real risk lies. Documents sent to print with no encryption over unsecure home networks can easily be accessed by external third parties. Unsecure home networks were a key challenge for organizations that implemented work-from-home policies through the lockdown and IDC believes this remains an unaddressed challenge. Staff working from home often unknowingly process customer data in a noncompliant way. Unsecure printing of documents can also lead to severe compliance breaches due to incorrect disposal of documents, a common cause of GDPR violation. As an example, in 2019 a German financial service company was fined by the local data protection authority for disposing of paper documents containing personal data of customers in the general wastepaper recycling system, where the documents were found by a neighbor.

Zero-print policies and staff waivers do not address the root cause. They often force users to engage in shadow IT activity that generates new security concerns. Print is still part of daily business life and needs to be addressed to maintain business continuity in a hybrid work context.

As such, it needs the same seamless integration, security, and accountability that corporate organizations expect from all other applications covering home locations as well as offices. Yet traditional server-based print services fall short of managing and monitoring home printing based on corporate compliance policies.

Now, in fall 2021, all developments suggest that the COVID-19 pandemic is far from over and will continue to impact organizations in the long term. The new hybrid model is therefore here to stay, and companies require holistic long-term cloud-based print services that can address the challenges of home printing.

IDC sees the following as the key benefits of cloud-based print and document services that facilitate hybrid work:

- **Location independent:** As organizations shift to hybrid work, they will increasingly foster employee mobility with seamless online-offline transitions. Location-independent printing through cloud-based print services enables organizations to complete this shift and make important steps in their overall DX journey. It also empowers organizations to provide a consistent employee experience across offices and home locations while maintaining staff productivity.
- **Flexibility and convenience:** Employees can consult documents in the easiest and most appropriate format whether that is electronic or paper.
- **Control and accountability:** To survive this abrupt transformation, print service vendors face the hard task of bringing external printers into managed print services contracts in an "any printer anywhere" fashion. This would essentially restore overall visibility and control over print workflow and accountability to specific teams and projects, all aspects that corporate users have become accustomed to under office-based MPS.
- **Consistency:** Cloud-based print services that encompass remote printers enable the application of service levels across all devices, users, and activity regardless of location.
- **Security:** In today's environment, print — like any other application — needs to be in line with overall corporate security policies. A holistic cloud-based print service can, for instance, incorporate common security layers such as authentication and encryption.
- **Compliance:** A comprehensive print service helps organizations to test and verify user behavior against corporate print policies for the company office or for remote working — a requirement of both auditors and regulators.
- **Insight:** Capturing insights across the whole print fleet including home peripherals, cloud-based print services offer a true vision of overall document workflow, helping to identify, for instance, processes that over rely on hardcopy documents. In doing so they facilitate discussions with customers on existing processes and DX opportunities to reduce the reliance on printers and printing.
- **Environmental benefits:** By optimizing the use of paper and intelligently converting some paper workflows to digital, organizations can meet new environmental targets.

PRAAS Enabling Hybrid Work

Fulton Francis, an international provider of MPS, has been in the market since 1999. The company was founded in Australia and grew thanks to its proprietary contracts management system, which enables support of multivendor environments across global print fleets.

Fulton Francis is present across the Americas, EMEA, and APJ. Its proposition has traditionally been centered around offering customers centralized visibility and control over their print fleet to reduce total cost of ownership and to eliminate unnecessary print. The company has always striven to maintain a vendor-agnostic profile and focus on providing outcome-based print services.

Last year, Fulton Francis founded PRAAS Limited to take its new print-as-a-service offering to market. PRAAS provides an innovative cloud-based global platform enabling management of printers irrespective of brand and location. PRAAS maintains the vendor-agnostic approach toward peripheral supply, not only to the company office (the traditional domain of Fulton

Francis) but now also for remote working. PRAAS aims to replace paper-based processes with digital alternatives using platform data to help customers eliminate non-essential printers and printing.

The PRAAS platform supports users, peripherals, and activity consistently regardless of location and removes the need for print servers. For the home office, this means that remote printing is secure and compliant. The platform works by obtaining a comprehensive image of the types of documents being printed across office and remote locations. It then provides a consistent view of print workflows across the organization with a view to reduce print and bring quantifiable savings. PRAAS intends to leverage usage data to empower customers to make key decisions on their workflow and ultimately drive DX. The company offers an end-to-end service with a platform that includes:

- Print management
- IT service management
- Contract and billing management (including print assets and consumables management)

From an architecture perspective, the PRAAS platform is SaaS based on Microsoft cloud (Azure), which gives it ease of scalability, security (with security built into the platform), and compliance — all key requirements for enterprise-grade solutions.

PRAAS has taken a best-of-breed approach in the selection of platform components where there is market choice. The PRAAS print management technology is provided by Printix, recently acquired by Kofax, whose solution value proposition is centered around eliminating corporate print servers and shifting to cloud print management. The PRAAS IT service management technology is provided by ServiceNow IT, widely used by enterprise and corporate entities. But the key to providing customer savings and enabling DX is data and PRAAS is using iConsolidate, the PRAAS proprietary contract and billing management technology, which serves as a single source of truth for everything print related for the home and office.

When implementing PRAAS, the Printix client is deployed to users' computers through Microsoft Intune or Microsoft Configuration Manager using Active Directory and authenticated by user phones through a Printix mobile app. User rules are established at a corporate level through single sign-on for different groups and departments. Printix can automatically add networks and printers, either in the company office or the home office.

By tracking users' printing at home PRAAS enables employees to claim back the cost of home peripherals and consumables. Alternatively, PRAAS can facilitate the supply, return, and secure disposal of home devices and consumables on behalf of the organization.

Security and compliance are key elements of the partnership with Microsoft. Already a key proposition in their agenda, through the pandemic, the Microsoft Zero Trust security model has gained even more traction to support enterprises in their shift to remote working.

FIGURE 1

PRAAS Architecture
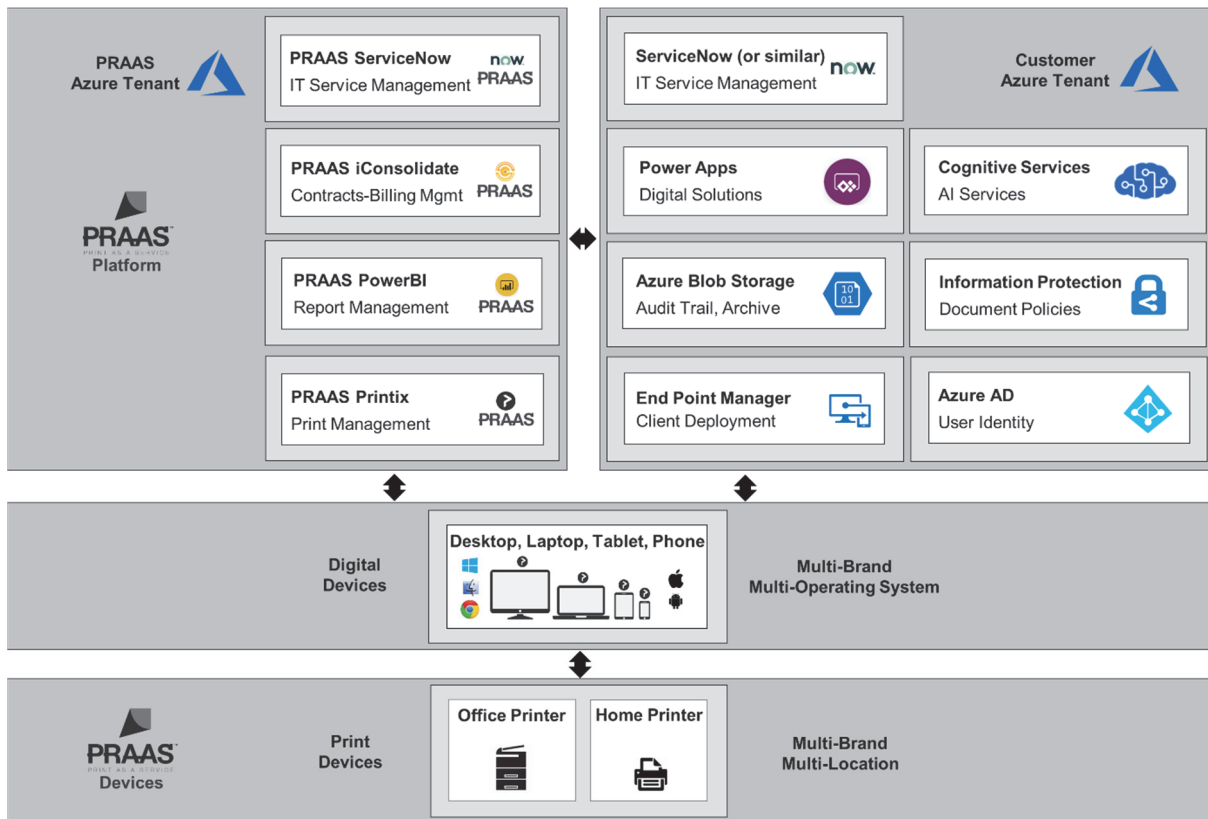
Source: PRAAS, 2021

Cybersecurity models have traditionally relied on a "castle and moat" approach that enables staff to move sideways within the firewall perimeter. But this model is outdated for several reasons. First, as discussed, the huge increase in staff accessing company networks not only from home connections but also from public networks and third-party clouds has created a surge in overall external accesses. Additionally, the organization security perimeter has become increasingly blurry with companies granting access to their partners, suppliers, and clients. This, together with the implementation of IoT endpoints, has expanded the potential attack surface and made malicious attacks harder to detect. Companies are therefore increasingly shifting to new "never trust, always authenticate" approaches.

PRAAS benefits from Microsoft's Zero Trust security technology model. This means that every access request is authenticated and authorized by analyzing all elements including the user's identity and the application's hosting environment to prevent security breaches. Microsegmentation and least privileged access principles are utilized to minimize lateral movement and protect data at a file level.

Microsoft's security model enables companies to better integrate printing as part of wider enterprise commitments to zero trust. The PRAAS solution is effectively Microsoft architecture incorporating multilayer security addressing user data, devices, and imaging services including printing and scanning.

PRAAS also benefits from Microsoft Information Protection, a solution that supports users in automatically identifying and classifying sensitive data and applying information protection policies to documents. Documents containing credit card details, for instance, can be automatically encrypted and labelled as non-printable to prevent data breaches. Following classification of documents, the system can monitor user behavior and policy violations and ultimately adapt policies to maintain a productive document workflow. Additionally, key components of the PRAAS platform use Microsoft Power Business Intelligence primarily for reporting.

FIGURE 2
PRAAS-Microsoft Alignment
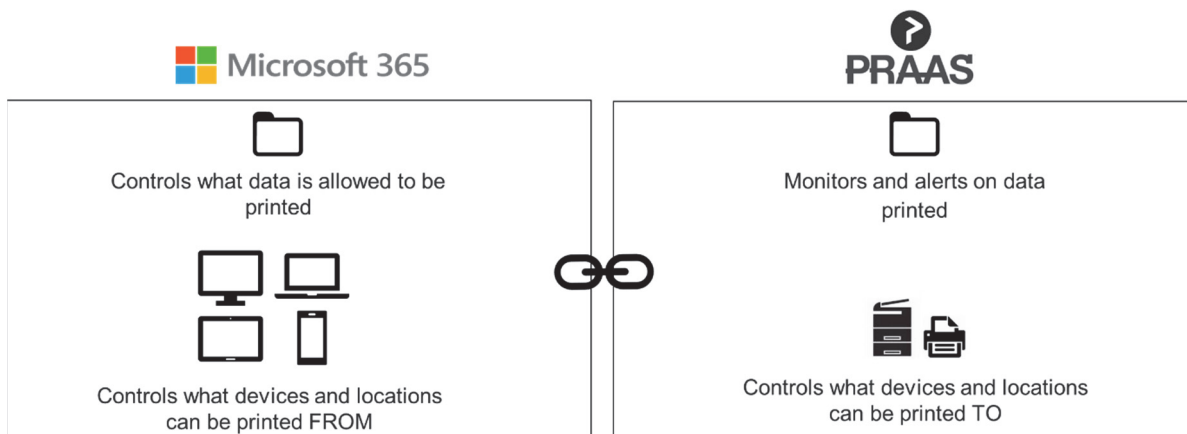
Source: PRAAS, 2021

Figure 2 summarizes the alignment of Microsoft and PRAAS and how the two technologies complement each other. More specifically, Microsoft compliance policies:

- Allow/block printing based on user and group and classification of data
- Allow/block printing based on device type and ownership
- Allow/block printing based on OS version, security settings, and security application version
- Allow printing to the PRAAS application only; MIP policies only allow printing if the classification level is approved to be printed
- Allow printing if the classification level is approved for the location

On the other hand, PRAAS policies:

- Allow/block who can print based on user, group/department
- Allow/block printing based on device type and ownership
- Allow/block printing to printers that are approved
- Monitor and record what is printed for alerting and audit purposes
- Allow/block printers on trusted (company) and specific untrusted (typically home) networks

Microsoft's security layer completes PRAAS' corporate proposition to add peace of mind for the enterprise user. The companies share a common goal to give print the same security and

integration that today's organizations expect from all other corporate applications supporting hybrid working models and ultimately drive transformation. Besides the already mentioned synergies, from a product perspective, IDC sees numerous other potential joint developments. Microsoft is among the most capable organizations when it comes to the analysis of large data sets, and PRAAS is currently integrating AI analysis tools to identify processes and workflows that would benefit more from digitization. A joint development on these grounds could lead to the release of a powerful suite of tools.

The partnership also brings substantial advantages to PRAAS' sales and marketing abilities. PRAAS' go-to-market plan will unfold in three stages, all tightly integrated with Microsoft's network:

- PRAAS will initially go to market through a direct sales model in conjunction with Microsoft and targeting Microsoft's Enterprise and Corporate client base with a full-service offering (comprising platform, devices, and optimization service).
- In a second phase PRAAS will provide a platform only offering through Azure Marketplace/AppSource.
- Finally, in a third phase, the company plans to enable select partners in Microsoft's P2P program to provide PRAAS to their customers.

Additionally, the company will join the Microsoft Geo Expansion program designed for Microsoft partners in high-growth-potential categories. Granting access to high-level conversations with corporate customers, the program could strongly accelerate PRAAS' commercial development.

To cover different implementation scenarios, PRAAS pricing will be based on four different bases, comprising per platform user, per device, per page, and per outcome. The latter will be key to engaging in long-term client relations aimed at overall DX. The different charging mechanisms will be delivered via one contract, invoice, and management service.

PRAAS' Challenges

PRAAS is currently offered on Microsoft AppSource and listed as a preferred solution, distinguishing it as a partner with deep, proven expertise and capabilities to address print needs.

The partnership with Microsoft, a brand rarely associated with printing, undoubtedly reinforces PRAAS' overall proposition around DX and enables it to stand out in an industry where consolidation of print fleet and reduction of unnecessary print is a common denominator. Leveraging Microsoft's network, PRAAS has invaluable opportunities to target large corporate customers at a time when hybrid working, employee experience, and compliance are high on the agenda.

The PRAAS offering is distinct from an entire ecosystem of print peripheral vendors and print service providers. PRAAS is seeking the digital transformation of workflows to have documents in the best format at the best time throughout the organization and ensuring a central data repository for printed document metadata. Other solutions tend to be more print-peripheral focused, seeking to optimize the efficient use of devices and minimize paper waste.

PRAAS also has a modular architecture that enables it to always strive for best-of-breed partners. Since PRAAS was first launched in 2020, Printix, one of the first cloud print management solution providers and a key partner contributing to PRAAS' architecture, was acquired by global digital workflow solution provider Kofax. While the partnership between PRAAS and Printix remains in place, the acquisition of Printix by Kofax extends Printix' market reach and could facilitate new partnerships with solutions providers that mimic the PRAAS model. Time, however, is key. Organizations are rapidly shifting to a hybrid work model, so existing and proven solutions such as PRAAS have a strong competitive advantage.

Conclusion

IDC's end-user surveys and conversations with large organizations confirm that as of fall 2021 organizations are returning to office locations at least for selected activities such as customer meetings and trainings. In some cases, the model has shifted to favor spoke offices rather than central hubs. In many other cases working from home remains the preferred option, especially for tasks that require greater concentration.

Whether working from home or in a hub or spoke office, the need for location-agnostic printing has become clear. PRAAS enables companies to use any available print peripheral in a secure and compliant fashion and accurately bill for usage. It also addresses increasing demand for "as-a-service" models and enables organizations to eliminate print servers, taking print costs off the balance sheet.

PRAAS' proposition addresses many important requirements. As well as optimizing existing office peripherals, it solves remote risk and compliance issues. The platform can connect users to any printer anywhere, giving organizations visibility of connected networks and peripherals. It provides document tracking from origin to destination, creates print-job audit trails, and can archive copies of print files in corporate cloud storage. This enables organizations to "test and verify" user activity against corporate remote print policies.

PRAAS' main objective is to empower customers to accelerate their DX journey, promote sustainability through digitization of document workflows, and rely less on printed documents. Providing a view of the overall corporate document workflow, PRAAS enables organizations to take decisions on which processes need to be digitally transformed. This view is shared by many leading MPS and peripheral vendors. What is distinctive about the PRAAS service, however, is that it strives to empower the customer to use any peripheral including existing home devices that would otherwise be underutilized — an "any printer anywhere" proposition. This is in contrast with the trend observed in the corporate world where print peripherals have become increasingly smarter over time, essentially transforming into digital hubs that provide access to all main document workflows. If successful, PRAAS can contribute to commoditization of print, drawing users' attention away from smart features of print peripherals (for instance around integration, connectivity, and security) and more toward the management platform.

PRAAS has the potential to engage in long-term customer DX journeys. The company will rely less on print-related revenues and will have to continue to build a value proposition to enable it to monetize the achievement of print reduction targets and overall digital transformation.

About the Analysts

[Mick Heys](#), Vice President, Future of Workspace and Imaging, IDC EMEA

Mick Heys offers strategic direction and advice to both vendors and end-user clients. He is responsible for research into the future of work as it relates to physical aspects and spaces. He is particularly interested in the future of the office in the world of flexible and mobile working and in optimization of the workplace. He has over 30 years' experience in the office automation and print industries in business development, product management, and consultancy roles. His analysis and opinions are widely sought by industry leaders and investors. He is a frequent speaker, presenter, and moderator at industry conferences and client events.

Mario Lombardo, Senior Consultant, Future of Workspace and Imaging, IDC EMEA

Mario Lombardo has a strong background in imaging technology including print and digital workflow. He is currently part of IDC's Future of Workspace practice and collaborates in projects involving core enabling technologies such as IoT, AI-driven automation, Big Data, and cloud computing. He designs and manages bespoke projects that support clients in their marketing strategies, business plans, and R&D. His contribution varies from data-driven product tracking all the way to thought leadership pieces. He is often quoted in the European press and invited to speak at major industry events.

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