



What enterprises need to consider before implementation

Mobile printing – who needs it?

Smartphones and tablets haven't rendered printing documents superfluous. As before, paper printouts are essential in day-to-day business. However, mobile device and printers aren't really compatible with each other straight out of the box. Previously, the demand for printing from mobile devices usually came mostly from companies' senior management.

For the past two to three years, mobile printing has been a component in many large requests for proposal on the subject of printing infrastructure. Companies are already making productive use of extensive mobile printing solutions. However, many IT officers and buyers still ask themselves: Do our users need this? Companies are increasingly relying on strategic use of mobile printing when implementing business processes. Although smartphones and tablets were previously mostly provided to field staff, in order to deliver email and calendaring functionality in addition to telephony, there are now an increasing number of employees who primarily or exclusively work with mobile devices. For example, a multinational company recently equipped 600 sales staff from its German subsidiary with tablets instead of laptops. However, these employees still want to (or must) print. Currently mobile devices will not replace laptops as the frontend for text processing or document creation. The subject of "mobile printing" can no longer be dismissed out of hand. Consequently many companies are already considering what an optimal solution for their users would look like. Depending on the requirements, they can choose between four possible solutions: manufacturer's apps and e-mail, the output devices' printing features, using cloud services, and output management systems (OMS).

Mobile printing by means of a manufacturer's app and e-mail

Nearly all printer manufacturers currently provide apps (printing services) that produce paper printouts of data from mobile devices. Printing services get by without the usual drivers and installation programs: Usually all that's needed is an app download and a printer that is compatible with it. The app allows print jobs for documents, e-mails, or pictures to be sent directly to the printer. Some vendors simplify this workflow even more, by omitting the application and equipping the printer with its own e-mail address. Other solutions for mobile printing by email provide an mail server to which the

| Solution possibilities | Hardware independent | Administration possibilities | Security | Print quality |
|---|----------------------|------------------------------|-------------|---------------|
| OEM solutions output devices | ✗ | ● | ● | ✓ |
| OEM solutions mobile devices | ✗ | ✗ | ● | ✓ |
| Cloud printing services | ✓ | ✗ | ● | ✓ |
| Output management systems | ✓ | ✓ | ✓ | ✓ |
| | Infrastructure | Scope of services | Flexibility | Expense |
| OEM solutions output devices | ● | ● | ● | ● |
| OEM solutions mobile services | ● | ● | ✗ | ✓ |
| Cloud printing services | ● | ● | ✗ | ✓ |
| Output management systems | ● | ✓ | ✓ | ✗ |
| ✗ Not suitable / unavailable depending on the requirement profile ● Dependent on the requirement profile or adapted if applicable ✓ Suitable for all requirement profiles | | | | |

user can send his/her print job. When doing so, in some cases output options can be submitted along with the print job by means of a specially encoded syntax (such as the printer and number of copies). Such an email server allows multiple printers from a single vendor to be connected. When doing so, the mobile device and the printer must be on the same WLAN, or the printer must be connected to the internet. WLAN printers have their own internet access, and consequently no longer need an upstream computer in order to be controlled over the internet.

Printing features of mobile devices

In addition to the solutions from the various printer manufacturers, there are also solutions from mobile device manufacturers. For example, most large printer vendors support Apple's AirPrint printing service. This printing service can work together with printers from a wide variety of manufacturer's; its coverage is relatively broad.

Samsung, for example, also offers a printing feature on its mobile devices. The mobile device and the printer must be connected to the same WLAN network

Eight questions that companies should answer

1. Is the solution device-agnostic?
2. What administration options does the solution offer?
3. What level of security does the solution provide?
4. What print quality does the solution provide?
5. What infrastructure does the solution require?
6. What scope of services does the solution provide?
7. How flexibly can the solution be configured and deployed?
8. What is the total cost of implementation?

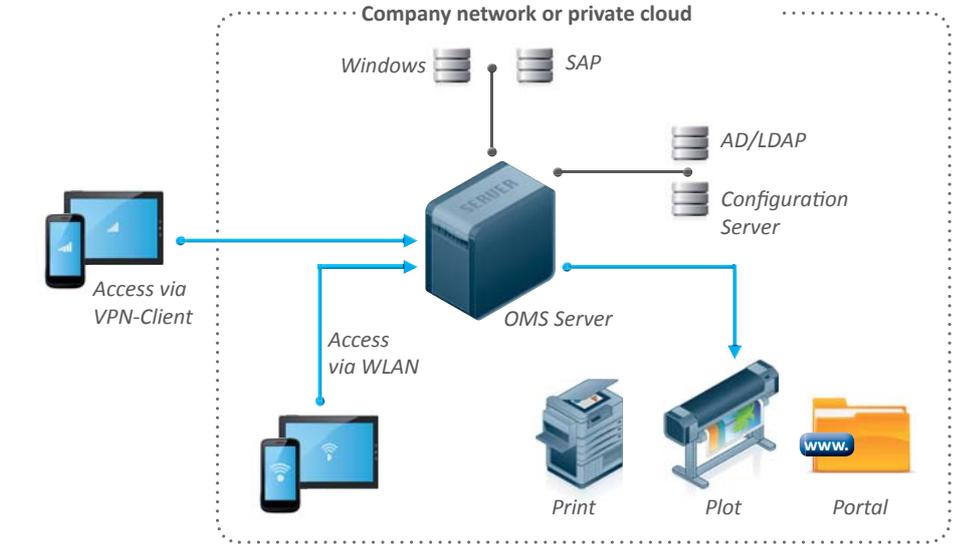


Mobile printing via cloud services

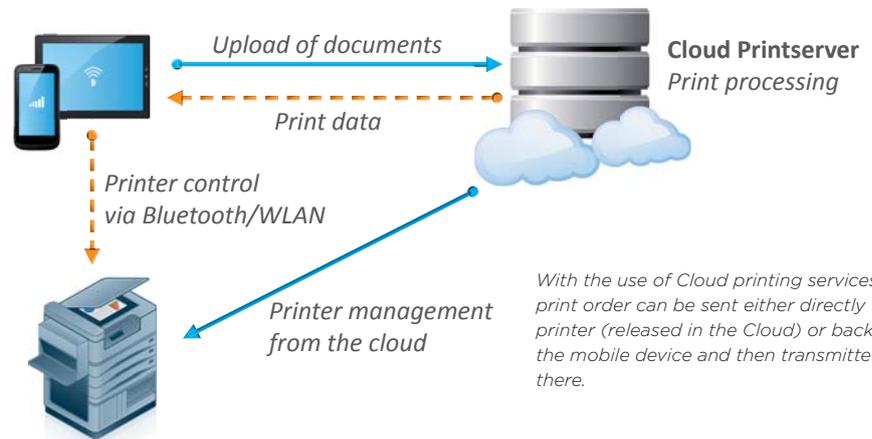
Cloud printing services such as Google Cloud Print use a different approach, in which the print formatting and printer control occurs via a cloud server. For this to work, the printer must be internet capable or have internet access through a connection to an upstream computer that is online. The documents that are to be printed are uploaded to the cloud server by means of an app. The print formatting and spooling occurs on the server. The printer is connected to the cloud server beforehand, and can then be directly controlled from the server. Google Cloud Print can most conveniently be used when the "Google Docs" cloud service and Android devices are also used. A new enhancement allows Google Cloud Print to be extended in such a way that it can also be used from standard Windows applications such as Microsoft Office. Another variation on printing via the cloud involves only doing the print formatting of transmitted documents on the cloud server. The print data is then output by means of the app and the user's mobile device to the previously selected printer via WLAN or Bluetooth.

Mobile printing via output management

Many companies use output management systems (OMS) from vendors of specialized systems to efficiently operate their decentralized printing infrastructures. Some of these systems also provide the possibility of integrating mobile devices into the OMS. When doing so the documents to be printed are usually transmitted to an output management server by means of an app from the OMS vendor. Access occurs either by means of the company network (WLAN), or a VPN client on the mobile device. When using cloud printing services, the print job can either be sent directly to a printer (which is connected to the cloud), or sent back to the mobile device, and then transmitted from there. When doing so, the apps also provide various output options. The OMS performs the conversion and spooling of the print job, and routes it to the desired printer. Output management systems normally provide a broad range of additional functionality related to printing and administration/operation of printing infrastructure. The output management server is usually operated as a physical or virtual



With mobile printing over an output management system the transmission of the print order is carried out via VPN client or Wi-Fi.



With the use of Cloud printing services, the print order can be sent either directly to a printer (released in the Cloud) or back to the mobile device and then transmitted from there.

When using cloud printing services, the print job can be sent directly to a printer from the cloud, or sent back to the mobile device and then transmitted from there.

in-house server. However, the solution can also be implemented with a private cloud design. What factors should companies consider? Based on experience it can generally be said that none of the alternative solutions is better than the rest in all respects. Whether a solution is suitable depends on the customer's requirements. The saying "you get what you pay for" doesn't necessarily apply. Nevertheless, when implementing a strategy for mobile printing, there is a list of criteria that every company should consider (see box).

Conclusion

For companies with large and/or complex printing environments and high business standards for administration and security designs, the systems from professional output management vendors provide the most mature solution. It also involves the highest cost of implementation and the most demanding infrastructure requirements. However, considering its many uses, implementing an OMS usually allows

long-term benefit to be achieved in multiple departments within a company. If the company already uses an OMS, the relative cost factor is significantly reduced, because the modules for mobile printing can then be acquired for a small cost of integration, and minimal additional license costs. For small and medium sized companies, in many cases the other solutions may be adequate and sometimes a more cost-effective solution. The question of whether to enter into an intensive vendor lock-in relationship with respect to the choice of printers and mobile devices something that each company must answer for itself. Answer If there are demanding functional and security-related requirements for a mobile printing solution, it may also be worthwhile for medium-sized and even small companies to implement an output management system.