



# The Essential BYOD Printing Guide

Launching a successful BYOD printing program at your school



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# Printing on a connected campus

“Things have changed”





Life on campus is a little different than it used to be. It's a digital world. People are connected. Students these days approach education through devices, often more than one. Smartphones, tablets, laptops, netbooks, and desktops too—they are all in the mix. Faculty, too, are increasingly reliant on their own devices to accomplish their work goals.

It's an evolution.



Although the impact of BYOD, or “Bring Your Own Device”, in the corporate world has grabbed most of the headlines, in many ways, higher education faces an even greater challenge: the need for security is no less significant, but the diversity of users, between faculty, staff and students, and turnover in devices requiring access to the networks, adds a layer of complexity that is unique to campuses.

Your college or university is probably already dealing with the challenges BYOD presents, hopefully with some success. You almost certainly have some sort of authentication implementation to allow students to access network resources from their devices. You may have a Mobile Device Management (“MDM”) solution in place, and require users to enroll; perhaps you have separate solutions for both faculty and students.



# BYOD Printing Challenges

“Too many obstacles”



Ironically, as BYOD has connected students and staff to school resources, it has actually disconnected them from the printers they often need to use. One of the most common complaints from students on campus is that although they can access school resources from their own devices, they can't print from those devices.

BYOD is meant to improve productivity, but lack of access to printers can become an obstacle. The truth is, among the myriad of challenges presented by BYOD, a BYOD printing solution is all too often just one more challenging integration point for IT departments.



Students, and staff, want to print from all their computing devices. The question for campus IT departments isn't *if* they should support BYOD printing, but rather *how* they can add print support to the current BYOD solution. What are the challenges, and how can you implement a system that overcomes those challenges?

Let's take a quick look at some of the major challenges BYOD printing presents.



## Locating and Connecting to Printers

The first challenge to solve is the most basic.

How do you connect users' mobile devices to your campus' printers?



## Controlling Access

Security is always at the forefront among the challenges BYOD presents, and printing is no different.

How can you support BYOD printing while still controlling who can access to printers and what they can print?



## Managing Paper Waste

The financial cost of paper waste is always a concern, especially for those schools leading the charge in green initiatives.

How can you reduce this waste while still offering BYOD printing?



## Integrating with Existing Systems

You've already got infrastructure in place - authentication services, perhaps a print management system, maybe even MDM solutions.

How can you offer BYOD printing services that work with the systems you already have?



# MYTH

*“Making network printers behind the firewall available to mobile devices requires costly network or other infrastructure changes.”*

# BUSTED

Actually, the PrinterOn solution works with a wide variety of printers and MFPs (multi-function devices) out of the box. No modifications or upgrades are necessary to the printers or the IT infrastructure.

Whatever the BYOD solution you choose for your institution, one thing is clear: there is no single blueprint for BYOD campuses. Different campuses have different requirements. This might make choosing a printing solution seem particularly daunting. How can you find a solution that fits your unique circumstances?

We've already taken a look at some of the challenges of BYOD print. Now let's look at how your BYOD print solution can work to help you solve them.

# Challenge 1

## The Connection Conundrum

Jenna is like any other student in her third-year bio-med program. Between classes, she spends much of her time working on her course work at the campus library. She use her own netbook to access her school account and retrieve her assignments so she can complete her work. She's just finished a paper for her Ethics course and wants to print it out to review it. There's a library printer right across the room from where she's sitting...

Wouldn't it be great if she had access to it from her netbook?





There are actually two challenges to connecting BYOD devices to campus printers. The first is the basic question of access: How do you allow Jenna to access the printer she needs on one network from the device she is using which is on an entirely different network with firewalls in between? Making network printers available to computing devices is a primary function of any print solution.

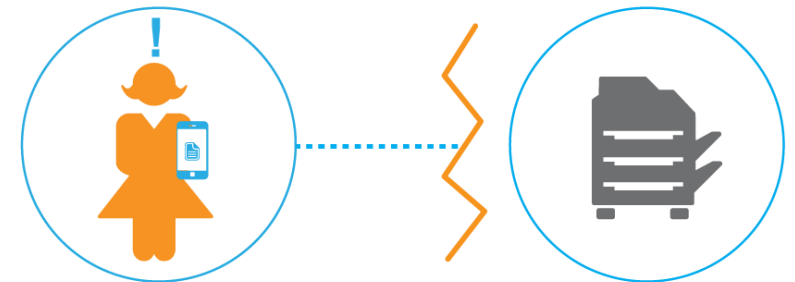
The second challenge is one of discovery: Jenna may have access to campus printers from her netbook, but how can she locate and connect to the specific printer she needs? Jenna knows which printer she wants to print to; she can see it. But she

may not know how it's identified on the network.

At minimum, users need to be able to search a network to locate printers. A print solution needs to allow administrators to provide metadata about the printers so that users can search based on criteria such as name, location, even specific features, such as whether it prints in color or black-and-white.

One way to simplify the issue of discovery is to reduce the number of printers a user can choose from many to effectively one. This is the concept behind pull printing. Pull printing is an elegant solution that allows

administrators to create a pool of printers that share a single print queue. Users submit a print job to the printer queue, then “pull” the print job down to any printer in the pool of printers. With a pull printing solution in place, Jenna could submit her work to a shared print queue, walk over to the printer closest to her, and then release the job to that printer for printing.





# Challenge 2

## Securing the Perimeter

With the boom in BYOD, security has become a huge issue. Organizations are diligent about protecting their data and controlling access, and users are keen to protect their privacy. Finding a BYOD print solution that can help you to achieve both should be high on your list of priorities.





To address access, your BYOD print solution must support some sort of authentication. You probably already have some sort of authentication service in place to allow students and staff to access resources over the Internet. If so, you'll want a print solution to make use of that same service.

But you may want even finer control offered by rules-based access. For example, you might want to allow all students to be able to access printers in common areas, such as libraries, while granting students of a particular faculty special access to a specific printer that other students cannot access. If you intend to support BYOD printing for staff, you likely want to restrict them to using only the printers within their departments, even when printing from their mobile device. A printing solution that is versatile enough to allow you to support these and other scenarios lets you maximize the service you offer to your users without compromising security.

There are device-side security concerns as well. Students and staff are sometimes reluctant to use their personal devices because they are unsure how much access the school will have to their device and data. Security gaps could lead to personal information being accessed and printed which shouldn't be.

To combat this, some schools have taken a page from the corporate world and implemented a Mobile Device Management (MDM) solution, such as AirWatch, Good Dynamics, Samsung Knox, and MobileIron.

These MDM solutions enable an organization to "enroll" mobile devices and then finely control which apps, services, and data can be accessed by whom and for what.

However, an MDM can present additional barriers to printing; a BYOD printing solution must be able to work with the MDM solution. You may not be there yet, but it's wise to think about the future while planning for the present.



# MYTH

*“Before they can print from their devices, users need to install the appropriate printer drivers on their device.”*

# BUSTED

PrinterOn takes care of all the messy driver details, so users don't have to. PrinterOn is printer agnostic; even if you have a collection of printers from a variety of different vendors, users won't need to worry about installing multiple printer drivers.



# Challenge 3

## Tackling the Waste

In the computer lab, Sarah has finally finished her assignment, and just in time. She prints it out, but, even before she can go collect her print job, she notices an error in the footer of every page. Sighing, she fixes the error, and reprints. The first printout goes straight into the recycling bin.

Javed, trying to complete the same assignment, prints his out, grabs it from the printer and leaves. He doesn't notice he's grabbed some of Sarah's print jobs. Sarah tries one more time. Finally successful, Sarah collects her print job and leaves.



**Up to 20% of all print is waste.** Reducing paper waste is a major concern for many organizations. College campuses are in many ways leading the charge with green initiatives, both for environmental and financial reasons. Paper waste is seen as an obvious target for these initiatives.

There are lots of ways schools are trying to curb paper waste, from simply encouraging students to only print when truly necessary, to charging students to print, to incorporating print management systems to track print usage. Sarah wasn't trying to be wasteful, but she still needed to print her assignment three times.

A BYOD print solution can offer a couple of waste-reducing strategies.

First, to discourage unnecessarily large print jobs, a print solution can allow you to set limits on the number of pages a user can print at once.

Secondly, print solutions can help to combat “print amnesia”—that common problem where a user sends a job to the printer but forgets to pick it up.

Because a print solution is software sitting between the user and the printer, it can be configured to hold print jobs until they are released by the user. The user must actually

go to the printer and enter a release code before the job is printed, so print jobs are less likely to be printed needlessly or printed and then forgotten.

**20%**  
of all print  
is waste







# Challenge 4

## The Matter of Legacy Systems

Flagler College had a problem. They had a successful printing program in place, where print charges were automatically calculated via Print Manager Plus, and were deducted from students' allowance. And they had successfully supported BYOD for students, using Active Directory to authenticate users as they accessed the network from their devices.

But students were complaining: they could only submit print jobs from the campus computer system.



Because network infrastructure costs are significant, systems tend to evolve slowly, rather than all at once. As they attempt to adapt their systems for future needs, IT departments are looking for solutions that work with and improve upon their existing infrastructure, especially when their current infrastructure is still serviceable.

This was the issue facing Flagler College. Infrastructure decisions had already been made, and now they had to find a way to allow students to print from their devices. How could they add support for BYOD printing without triggering an expensive upgrade and disrupting their current systems?

With so many infrastructure-related variables, the best BYOD print solution is a flexible solution: one that can integrate with your specific infrastructure constraints. Print management solutions, in particular, can play a major factor in how you implement your BYOD print solution.

Print management solutions, such as Equitrac, Pharos, PaperCut, and others, are designed to monitor and manage how users use print resources. They are commonplace on many campuses, and provide valuable services that allow colleges and universities to offer printing programs like the one offered by Flagler. If you are using a print management system, it's imperative that any BYOD print solution you implement allows your print management solution to continue to track the print activity of users, even when they are printing from their personal devices.



# MYTH

*“Allowing users to access your printers means either controlling their devices, or making all printers available to everyone. You can no longer control who can print where.”*

# BUSTED

With PrinterOn, you can have very granular control over who has access to a specific printer.

# Planning your BYOD printing solution

“What do I really need?”



Before you choose a solution, you'll need to assess your needs and take stock of your current environments.

Some of the key questions you need to ask include:

- What are my expected printing requirements?
- What devices do I want to support?
- What submission methods do I want to support?
- Do I need a cloud or on premise solution?



# What are your expected printing requirements?



How many printers do you need to make accessible to BYOD users? What are the expected print volumes?

You'll want to make sure that the solution you choose can support the printing requirements you have, both now and in the future. Balancing the needs of today and with evolving needs of the future without overspending is key.

Therefore, any selected solution should service your current needs while providing an upgrade path should your needs grow. This is an important consideration and can help build in a kind of "insurance policy" against the risks of the upgrade needs in the future.



# Which devices and submission methods do you want to support?

Users may want to connect to your printers from a variety of mobile devices, on a variety of different platforms. A laptop running Windows. An iPad. An Android-based smartphone. A Surface tablet. A MacBook. Your BYOD print solution should offer a way to submit jobs to printers no matter which device a user has. It should not be limited to certain devices or operating systems.

This may not seem like an important consideration, but it is because each platform has its own print workflow. A BYOD print solution must either work with that workflow, for example, by supporting File > Print on Windows, or offer a way to submit print jobs outside of that workflow by providing submission via a web page, a web app, or a third-party app on a device.

Before choosing a print solution, make sure that it supports all of your potential users.

# MYTH

*“Allowing users to print from remote devices will lead to more paper waste.”*

# BUSTED

BYOD printing may lead to more print submissions overall as access to printers is increased. However by requiring users to release the print jobs at the printer, you can eliminate the problem of “print amnesia,” where users submit a print job only to forget it at the printer. Print jobs that are not released are eventually deleted from the system.

# Are you looking for a cloud-based or on premise solution?

An on premise print solution is one that you install behind your firewall on your own servers. A cloud-based solution is hosted in the cloud by a third party. Both have their benefits, but the right solution depends on your available resources and printing needs.

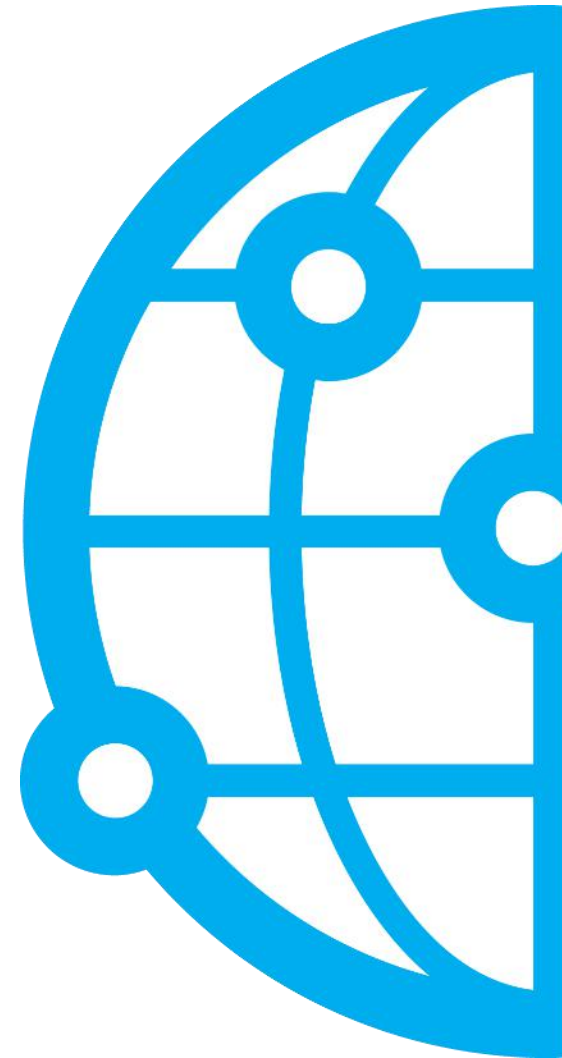
A cloud-based solution is typically more cost effective since you don't have the expense of additional hardware. Instead, a third-party hosts and maintains the service, and charges you a subscription fee to use it. However, although less expensive, a cloud-based solution is typically intended for lower printing volumes. Be sure that any cloud-based solution can handle your expected print volumes before subscribing to the service.

On premise solutions are typically more robust, but require added infrastructure costs and maintenance by IT staff. Again, before choosing an on premise solution, make sure that you select one that can handle your expected print volume.



# Do you have multiple campus locations?

If your college or university is multi-campus in different physical locations, ask yourself: do you want to implement a printing solution for each campus, or a single solution which connects together all the printers on all campuses? Do you want users from one campus to have access to other campuses?



# Do you intend to support just students, just faculty or both?

Students and faculty represent two quite different sets of users with different printing requirements—and possibly different printing destinations. Providing a BYOD print solution for both will impact printer volumes, and, as a result, the cost of your solution. You'll want to take the time to consider whether your printing solution needs to support one or both of these groups of users.

You'll also want to determine what level of access control you want to be able to enforce. Will your printers be made available to all BYOD users? Do you want be able to restrict which users can access which printers? To allow different groups to access different printers, look for a solution that provides granular access controls, such as rules-based authentication.

# What existing systems, if any, do you need to integrate with?



Do you currently have a print management solution? If so, print jobs will need to be tracked in the print management system. How about student chargebacks? Print jobs need to be recorded there. Are you using an MDM solution? Your BYOD printing solution should have mobile apps which are “wrapped” in the MDM vendor’s technology so you can take advantage of all their security features and app management capabilities.



# MYTH

*“A BYOD printing solution requires costly network infrastructure and maintenance.”*

# BUSTED

PrinterOn offers a cloud-based solution that can be implemented with virtually zero impact on your current network infrastructure.

# Taking a test drive

“Try before you buy”



PrinterOn is the premier mobile printing solution that enables users to securely print from any smartphone, tablet, laptop or desktop, to any printer, no matter the networks in between. With PrinterOn you can “Print Simply Anywhere®”.

Today PrinterOn is operated under License by ePRINTit USA, LLC and has the broadest and deepest secure mobile print and payment offering available for cloud or on premise deployment. This is a direct result of cumulative product innovation and evolution since 2001 when PrinterOn pioneered secure mobile printing.



ePRINTit has been providing hyper-secure cloud printing to enterprise, higher education, and public print locations since 1997. We believe that the future is here and cloud technologies are surpassing the old on-premise servers and print driver technology. Together, we are on a mission to help you make every cloud printing experience infinitely better. The ePRINTit solution provides its users with a global pay for print, scan, copy features directly embedded in iOS and Android Apps as well as email printing, web portal, and file-to-print drivers, servicing clients without the need for a print driver or print server management





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