NETWORK PRINTING IN A COLLEGE OF EDUCATION: COST SAVINGS AND REDUCED SUPPORT

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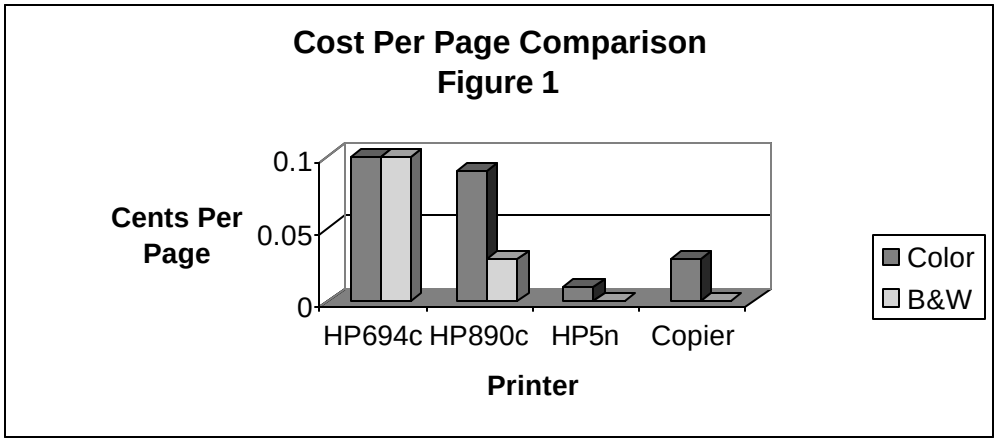
THE PROBLEM

In 1996, all faculty had individual printers connected to their desktop machine. Some of these printers were laser printers, most were ink jet printers. There were 120 different printers each requiring its own paper supply, toner or ink supply and troubleshooting. The Office of Information Technology (OIT) logged 173 help tickets directly relating to local printers. These help tickets ranged from changing toner or ink cartridges to clearing paper jams in local printers.

THE PLAN

The OIT began to investigate the benefits of network printing. The annual cost savings were projected to be $11,000. The College was spending an average of $300 per printer for each faculty member. The average number of machines replaced each year was 30, this maintains our four-year replacement cycle. The immediate hardware cost savings was $9,000. The cost of consumables was projected to fall with the adoption of network printing.

Figure 1 includes cost per page data supplied by Hewlett Packard.



The average ink jet cartridge costs $25, the average toner cartridge costs $95. But the life span of the cartridge is where the laser outshines the ink jet. The typical toner cartridge last 11,000 to 15,000 copies, while the typical ink jet cartridge prints less than 5,000 copies. Once the initial outlay for the 7 new laser printers was paid, the College should begin to see cost saving mount over time. This saving comes from the durability and reliability of the laser printers over the ink jets.

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THE OBSTACLES

Most faculty were reluctant to give up their local printers. The most common issues raised by faculty were confidentiality, security, and inconvenience. The inconvenience factor was combated by printer location. The OIT placed printers in each departmental office, where faculty needed to go for other purposes such as mail pick up and deliveries.

The security and confidentiality issues were addressed by supporting the policy that lead secretaries, chairs, directors, and deans would keep their local printers in order to print confidential student and personnel reports. But these printers would also be upgraded to laser printers to maintain consistency. Faculty who were concerned about security and confidentiality were encouraged to have the lead or departmental secretaries print sensitive materials. Making sure departmental printers were in secure areas that could be locked and only entered by appropriate faculty and staff helped reduce some of the concern in this area. The next issue involved special paper and color printing. The OIT solved this by purchasing the network printers with multiple paper trays that the departments could configure for letterhead, legal, etc. Faculty training sessions were held to show them how to switch between the different types of trays. Color printing was resolved by directing faculty to the Faculty Development Lab, which was already equipped with a Hewlett Packard DeskJet 1600c.

THE IMPLEMENTATION

The College purchased 7 new Hewlett Packard LaserJet printers with multiple paper trays and network cards. The average network printer cost was $2,000 for a total investment $14,000. Network printing was simply integrated into our existing Novell network. These printers were placed in strategic locations in the College to make access as easy as possible. Most printers were placed near faculty mailboxes to minimize additional trips and increase security. The existing local printers were not removed. The OIT and the College implemented a new policy that no College funds would to be spent on local printing, but existing printers would be supported until the end of their useful life. For disaster purposes the OIT purchased a spare, less sophisticated printer that could replace a broken network printer in less than 30 minutes. Training sessions were held to help faculty switch between their printers, select advanced printing options, and basic troubleshooting for off hours problems that may occur.

THE RESULTS

The College now has only a few local printers left. Most have been phased out and some have even been removed at the request of the user. None of the original network printers have experienced any failures, only routine maintenance has been performed. The faculty has taken quite well to network printing. There have been no major unplanned network outages that have caused interruptions in printing and network services. The positive feedback the OIT has received includes, faster printing, higher quality printing, and more reliable printing. The

negative feedback we have received centers on having to walk too far to pick up print jobs and problems with manual feed print jobs. We are working on solutions to these problems. The cost savings have been better than projected. Not only did the OIT eliminate $9,000 annual cost of replacing aging and failing printers, but consumables costs fell more than projected. The College has lowered its paper cost, most likely due to faculty limiting their printing to only necessary print jobs since they must pick them up. Faculty and staff have reported an increase in more on screen editing skills. Toner costs were lowered because we are able to buy in volume to lower the unit cost and the laser cartridges are simply more cost effective per page than ink jet cartridges. These cost savings have allowed us to increase the faculty desktop replacement cycle and upgraded the color printer in the Faculty Development Lab to a color laser printer. The number of man-hours spent servicing printers and printer related issues has also dropped significantly. The number of help tickets related to printing has dropped by 765 percent to a total of 20 help tickets. According to recent help tickets, the most common printing issue is clearing network printer paper jams.

THE FUTURE

As the College moves to NDPS (Novell Distributed Printing Services) it will no longer be necessary to install printer drivers on each machine. When the user selects the printer from the network, if the driver is not already installed the driver is pushed down to the user. One plan in consideration is to allow all faculty access to the color laser printer from their office. This will be piloted with two departments to see how much the costs increase.

RULES OF THUMB

For any College or school looking to adopt network printing, the key to a successful project is to migrate slowly and communicate with the end users. Extreme and abrupt changes disrupt faculty and staff's work lives making them uncomfortable. By slowly phasing in the changes over time it makes the transition much easier. Below are some basic pros and cons of network printing to take into account when discussing the issues. This list is by no means exhaustive but it is a good means of beginning the dialogue.

PROS

- Laser printers have longer duty cycles
- Laser printers are more durable and more repairable than ink jets
- Laser printers have lower costs per page
- Keeping all printers the same or similar models reduces inventory costs for consumables
- Laser printers have higher quality output
- Laser printers are faster than ink jets

CONS

- Inconvenience, most faculty and staff will have to walk to pick their printouts
- Envelopes and special paper printing
- Network failures cause sharing printing to be interrupted