

Computer Tech Talk

Buying a Printer
By Dennis Henson

My SUV has a 30 gallon gas tank and costs \$64.50 to fill an empty tank with gasoline at \$2.15/gal. If I filled the same tank with printer ink, the bill would be a little over \$71,000. It makes sense to select a printer that is as economical as possible with expensive ink yet still does a great job printing. This article discusses many topics to consider when buying a printer.

What Kind of Printer?
Inkjet printers have the lowest purchase price. Inkjets squirt micro-dots of ink through specially designed heated nozzles. Inkjet printers are typically found in the home and small office where occasional printing of color is required. Inkjet printers create excellent prints of digital photographs when printed on specially designed glossy photo-printing paper.

Black and white printing LASER printers are the heavy duty printers found in the office. LASER printers melt small pieces of plastic dust attached to iron filings (called toner) onto printing paper at 350 to 375 degrees Fahrenheit in patterns controlled by static electricity. LASER printers print black using a single toner cartridge. Color LASER printers need four toner cartridges (magenta, cyan, yellow, and black). Color LASER printers are more expensive and are more prone to mechanical failure than LASER printers that only print black.

How does it Connect?
Older printers connected to your PC via a 25-pin connector and a cable called a "Centronix" or IEEE 1284 cable. Many computers sold today don't have this "parallel" printer port. Universal Serial Bus (USB) connectors are the current standard for connecting printers and other peripherals directly to your computer. There are also wired and wireless network connection options. Choose a printer with a connection type that is compatible with the computer(s) you will use. You probably have to buy a cable separately.

What's the Printer Cost?
You should select a printer that has the lowest total cost of ownership to meet your printing needs. Cost of ownership includes not only purchase price, but the cost of consumables (ink or toner). You can easily spend \$60 replacing the color and black

ink cartridges in an inkjet printer. That printer that you thought you got for free -- isn't free anymore. The table accompanying this article shows one way to evaluate total cost of ownership. Look at the purchase price, but also look at the cost to print a page. Select the printer that has a purchase price that is reasonable and also has a low cost per page. I determined cost per page for this table by looking at the number of pages a particular printer cartridge yields and divided the cost of a replacement cartridge by the yield in pages. Most page yields are determined by the vendor assuming 5% black coverage (typical text on a page). For photographs, I used the available vendor data and estimated two times the text cost where there was no vendor data. This is a random sample of 10 printers from three popular manufactures and is not a purchase recommendation by me. Use the techniques in the table, but do your own shopping.

Photo Printing. Printing high quality photographs on inkjet printers can be expensive in both the consumption of ink and special paper. One sheet of 4x6 glossy photo paper is about \$0.25. Add \$0.15 for the ink and you can spend \$0.40 for a single print, more if you don't comparison shop for supplies. Discount retailers and chain pharmacies have printing kiosks or photo departments that deliver a 4x6 print from your digital media for \$0.19 in one hour. That's about 1/2 the cost of doing it yourself. Carefully consider how much photo printing you want to do at home.

Where Can I Buy One?
You can buy printers at computer stores, discount retailers, office supply stores, electronic stores that sell PCs, and on-line, usually for a discount. I like to determine reasonable street prices for items by using Google to search. Pricegrabber, Dealtime, and Nextag will be in the search list. Pick one of them to see vendors purchase prices online. Most sites compute total cost including shipping and sales tax if you enter your zip code. Be mindful of open-box and refurbished items (unless that's what you're looking to buy).

Can I Share My Printer?
Do you want to print to your new printer from more than one computer without changing the connection? If you have a computer network in your home or office, you can.

Printer Sharing. You can "share" the printer with other computers in your network. Sharing a printer through one computer is a feature built-in to modern Microsoft Windows operating systems. After you install the software and physically connect the printer to the host computer you "enable" printer sharing by giving the printer a "share name". Other printers in your network should be able to see and use the shared printer as long as the host computer and printer are turned on. You just have to instruct the remote PCs to use that shared printer.

Network Printers. The second method of sharing a printer requires purchasing a printer that is network ready. Network printers have a built-in Ethernet LAN card that is compatible with your wired network, or has 802.11 wireless capability that is compatible with your wireless network, out of the box. Just connect the printer to your network, install the drivers on all the computers that will print from the new printer and tell the computers in your network to use the new networked printer.

What is An All-in-One?
Printer manufacturers have combined printing, copying, scanning, and sometimes faxing into a single device called a multi-function or all-in-one (AIO) device. For small offices and many home users, these AIO devices are great. If you find yourself needing to copy occasionally the capability is there. If your bank wants a fax of some document, you've got the capability. If you have a precious ancestral photograph that you would like to digitize for storage (scan), you can do that too. These AIO devices are a little more expensive, but not a bad when you consider all the features you get for the money.

Previous Articles.
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Questions and comments about this article may be emailed to: hcs@mchsi.com

SAMPLE PRINTER COMPARISON CHART

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Type	Vendor	Model****	Retail Price	Print Speed (pages/minute)		Cost Per Page		Special Features
				Text	Photo	Text*	Photo**	
Inkjet	HP	Deskjet 5440	\$70	7.4	2.4	\$0.071	\$0.215	Photo Printer
		Photosmart C3180	\$100	7.1	4.9	\$0.071	\$0.114	All-In-One
	Lexmark	Z845	\$50	12	5	\$0.053	\$0.126	Photo Printer
		X4270	\$100	10	2	\$0.053	\$0.276	All-In-One
	Canon	Pixma iP1700	\$50	13	7	\$0.041	\$0.250	Photo Printer
		Pixma MP830	\$300	15	12	\$0.020	\$0.158	All-In-One
Laser B/W	HP	LaserJet 1018	\$100	12	n/a	\$0.035	n/a	Compact
	Lexmark	E120N	\$124	20	n/a	\$0.034	n/a	Small Footprint
Laser Color	HP	Laserjet 2605dn	\$450	12	10	\$0.030	0.167***	Network Port
	Lexmark	C500N	\$400	31	8	\$0.011	0.262***	Network Port

* Text cost per page is based on 5% black coverage and does not include paper.

** Print cost for a 4"x6" print, not including paper.

*** 8.5x11 sheet at 5% coverage (not a photograph)

****These are major printer manufacturers who have many other models from which to chose. Prices are from vendor website.