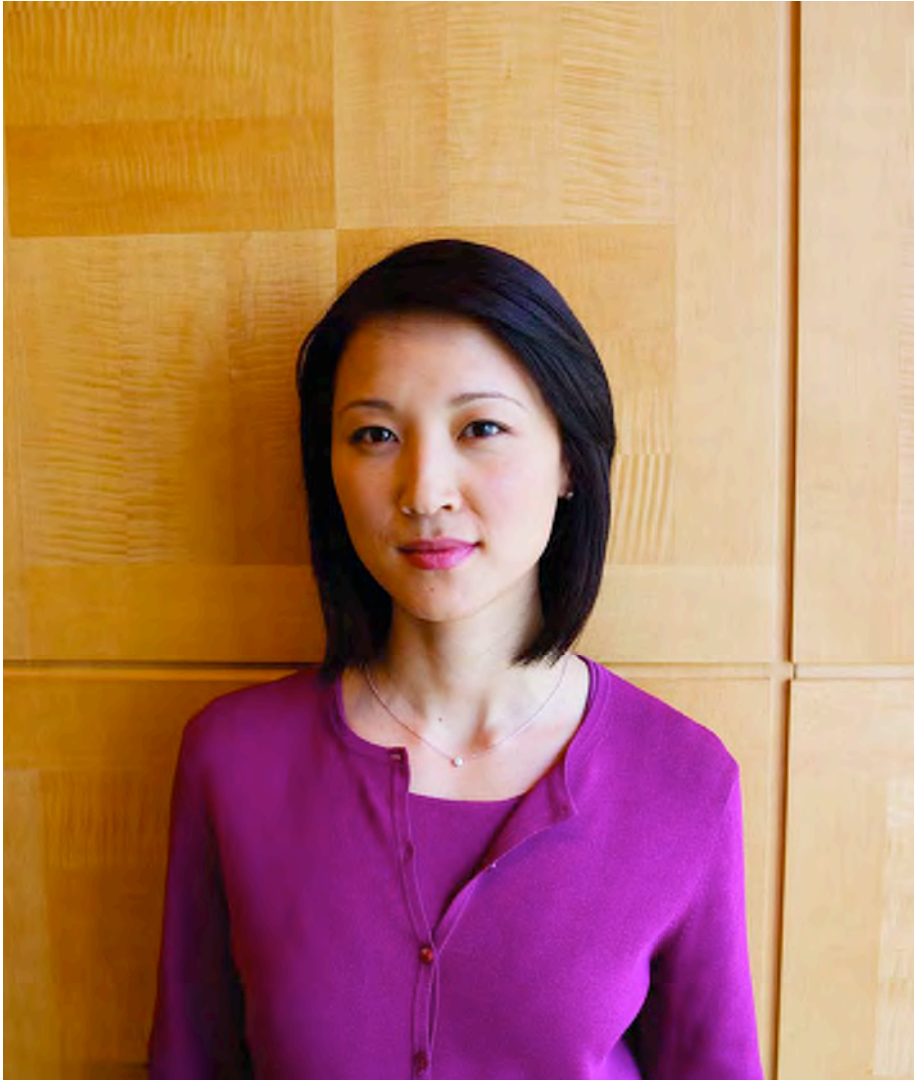


# Head to head comparison: color versus black-and-white printing



Apples and oranges? Not necessarily. As you will see in the comparison of HP technology below, color and black-and-white printing build on similar printing technologies, deliver comparable performance and are equally manageable as networked devices. See page 3 for a surprising look at the ever-narrowing gap in the cost and value of color and black-and-white printing—especially when you bring color printing in-house.

## Performance

Consideration	Color (Example: HP Color LaserJet 4700n*)	Black-and-White (Example: HP LaserJet 4350n*)
Print speed	Up to 31 ppm color and black-and-white	Up to 55 ppm black-and-white only
Maximum input capacity	2,600 sheets	3,100 sheets
First page out	Less than 10 seconds	Less than 8 seconds
Resolution	600 x 600 DPI (with ImageREt 3600)	1,200 DPI
Maximum monthly volume	100,000 pages	250,000 pages
Intuitive control panels	Yes	Yes
Memory (standard)	160 MB total	80 MB RAM
Processor	533 MHz RISC	460 MHz
Hard disk	Optional 20 GB HP high-performance via EIO slot	Optional 20 GB HP high-performance via EIO slot
Technology	In-line technology	In-line technology

## Connectivity

Consideration	Color (Example: HP Color LaserJet 4700n*)	Black-and-White (Example: HP LaserJet 4350n*)
Interfaces	Bidirectional IEEE-1284-C parallel port, Hi-Speed USB 2.0 port, two open EIO slots, foreign interface for third-party solutions, Host USB accessory	Hi-Speed USB 2.0 port, IEEE 1284-B compliant parallel port, two open EIO slots, HP Jetdirect Fast Ethernet embedded print server
Network connectivity	HP Jetdirect Fast Ethernet embedded print server	HP Jetdirect Fast Ethernet embedded print server
Print languages	HP PCL6, HP PCL5c, HP postscript level 3 emulation, direct PDF printing (v 1.4), PML (Printer Management Language)	HP PCL 6, HP PCL 5e, HP postscript level 3 emulation, direct PDF (v 1.3) printing (with at least 128 MB printer memory)
Technology	In-line technology	In-line technology

## Operating environment

Consideration	Color (Example: HP Color LaserJet 4700n*)	Black-and-White (Example: HP LaserJet 4350n*)
Power consumption	Printing: 567 watts Standby: 55 watts PowerSave: 17 watts Off: 0.3 watts	Printing: 790 watts Standby: 20 watts PowerSave: 13 watts Off: 0.3 watts
Power consumption Footprint (W x D x H)	20.5 x 23.5 x 22.9 in (521 x 598 x 582 mm)	16.5 x 17.8 x 14.8 in (418 x 451 x 377 mm)
Intuitive control panels	Yes	Yes

\*Comparison of selected features of the HP LaserJet 4350n black-and-white printer and the HP Color laserJet 4700n model. Learn more about these and other HP printing solutions at <http://government.hp.com>

# Head-to-head comparison: color versus black-and-white printing costs

So just how big is the cost difference between color and black-and-white today? Not very—especially when you factor in the savings that result from printing in-house and the value that color can add to many everyday communications.

## Hard costs

Consideration	Color (Example: HP Color LaserJet 4700n)	Black-and-White (Example: HP LaserJet 4350n)
Device**	Starting at \$1,999**	Starting at \$1,649**
Paper	\$ 0.1/sheet	\$ 0.1/sheet
Cost-per-page (CPP) (5%)	Color CPP (20%): 9.0 Black-and-white CPP (5%): 1.7	Black-and-white CPP (5%): 1.5
Print cartridges	Color (10,000 pages per) Cyan, yellow, magenta: \$254 each  Black-and-white (11,000 pages per) \$179	Black-and-white (10,000 pages) \$150

### Printing savings opportunity

The temptation to save money by purchasing a black-and-white printer makes sense for anyone who is sensitive to the need to make the most prudent use of public dollars. Yet, when you consider additional cost factors, such as the price you'll pay an outside vendor to handle your color printing needs, that black-and-white printer may not be such a bargain as the following example shows. In this case we are assuming:

- Both printers have similar features and speed for black-and-white printing.
- Assumed volume: 100 black-and-white pages per day, 5 days per week, 52 weeks per year for 3 years. Total: 78,000 pages.
- All color pages are printed on both sides.
- The organization will print 200 color pages per month over the lifetime of the printer (approximately three years) for a total of 7,200 lifetime pages.

#### First compare printer prices:

Price of color printer**	\$1,999
Price of black-and-white printer**	– \$1,649
	<hr/> \$350

**Cost factor #1:**  
The black and-white printer costs \$350 less.

#### Next, compare cost-per-page<sup>a</sup> prices for black-and-white printing:

Cost-per-page of black-and-white printing on color printer \$0.017

Cost-per-page of black-and-white printing on black-and-white printer – \$0.015

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\$0.002

**Cost factor #2: Using the assumed print volume of 78,000 pages, it costs \$156 less to print black-and-white pages on the black and-white printer.**

#### Then compare cost-per-page<sup>c</sup> for color printing:

Cost-per-color-page printed at outside vendor<sup>1</sup> \$1.68

Cost-per-color-page printed in-house on color printer<sup>1</sup> – \$0.40

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\$1.28

**Cost factor #3: Using the assumed print volume of 7,200 pages<sup>d</sup> and an assumed cost for the print jobs it costs \$9,216 less to print color pages on the color printer than it would to have them printed by an outside vendor.**

#### Finally, compare total cost-savings (printing color in-house versus outsourcing color):

Purchasing a color printer and printing color in-house saves \$9,216

Purchasing a black-and-white printer saves \$350

As you can see from the example on page 3, using the color printer instead of outsourcing color jobs can help you save, even when relatively few color pages are printed. Of course, once you take into consideration the impact color has on communication, you should ask yourself if you can really afford not to choose a color printer.

## Want to know more?

At HP, we understand that knowledge is an organization's most important tool. Please visit us on the web at [www.hp.com/go/govcolor](http://www.hp.com/go/govcolor) for a dynamic repository of informative white papers, hands-on training resources and success stories about the power of color. You'll find everything you need to understand your printing and imaging environment and what you can do to get the most from your color printing investments.

## Value of color

Color printing:

Increases retention by 78 percent<sup>2</sup>

Increases comprehension by 73 percent<sup>3</sup>

Increases brand comprehension by 80 percent<sup>3</sup>

Reduces search time by 80 percent<sup>3</sup>

## How HP can help

HP is the industry leader in printing and imaging innovation and reliability. Whether you need to buy one printer, develop a strategy for effectively deploying color, multifunction and document management devices, or you want to completely transform your printing and imaging environment, HP has the experts, experience and technology to deliver the right solution, right now. Please contact your HP representative today to talk about how HP can help you save money and increase productivity.

### Notes

1. David Stone, "Color printers: ready for prime time at last"
2. Pantone Institute
3. Virginia Johnson, "The Power of Color," *Successful Meetings*
4. Jan V. White, *Color for Impact* (Berkeley: Strathmoor Press, 1997), 3

\*\*Estimated HP U.S. prices from [www.hp.com](http://www.hp.com) as of September 2006. Actual prices from other locations or Websites may vary.

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