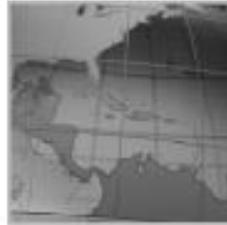


Analysis



Office Technology & Services



March 2014

New HP Officejet Enterprise Color X585 MFPs Offer Color Up to Half the Cost of Laser *North America Version*

[Comments or Questions?](#)

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Introduction

Over the years, color inkjet printers have become an established device in U.S. households and small offices. Nevertheless, inkjet printers and all-in-ones (AIOs) have been slow to migrate to the general office environment. Inkjet devices have been viewed as too slow or too expensive for everyday office output. For some time, InfoTrends has forecasted the wide deployment of inkjet technology to address a broad range of printing requirements. This technology is currently widely-deployed at the low end of the market; in specialty markets, such as wide format; and among high-speed, high-priced page printers, such as the Kodak Versamark. Nevertheless, InfoTrends believes inkjet offers many important attributes that could help spur the use of color in general office and business applications. Our interest is based on some basic principles: ink costs less than toner, inkjet printheads have relatively few moving parts, and the quality that can be delivered is high.

In October 2012, Hewlett-Packard (HP) announced the availability of its first ever desktop page-wide inkjet devices—the Officejet Pro X series. HP PageWide Technology is a stationary print bar that spans the width of a page and prints entire documents in a single pass. All of the products in this series are targeted toward the business market. From a hardware and supplies perspective, this technology has the most potential to create disruption within this market. The office market has traditionally been dominated by laser-based technology but, with the introduction of page-wide inkjet devices with robust speed, print quality, and paper handling capabilities from a market leader like HP, it could really change how customers view inkjet technology.

The timing could not be better for HP as InfoTrends forecasts the U.S. business inkjet market to grow at a 3.3% compound annual growth rate (CAGR) through 2016, while the market outlook for Western Europe is even more robust with business inkjet devices expected to grow at a 6.6% CAGR during the same period.

Business inkjet continues to capture share from laser-based multifunctional peripherals (MFPs); this is expected to persist for some time. In the U. S., roughly 31% of inkjets were destined for business applications in 2012, meaning more people are using ink in the office as a percentage of total ink printer sales. InfoTrends expects this share to reach 35% by 2016. In Western Europe, this share is expected to grow from 16% in 2011 to 30% in 2016.

Inkjet Technology

To date, inkjet technology has not been broadly deployed in the mid-market. We have yet to see an inkjet implementation that combines all of the desirable technology attributes into one solution: at least one metric typically suffers. For example, faster speeds are typically associated with products that produce lower quality, while unmatched print quality is typically implemented in less robust consumer products with slower speeds.

Current inkjet implementations provide net page costs that range from very expensive to the lowest-cost digital pages. Over the last several years, there have been numerous improvements in throughput speed and print quality of color inkjet printers. It has been the high cost of ownership, the high cost of inkjet replacement cartridges, and the corresponding high per-page printing costs, however, that have been the strongest barriers for many to accept these devices as an alternative to laser-based technology for general business applications.

HP is one company that has consistently pushed its inkjet technology into the business environment. In 2005, HP introduced its scalable printing technology (SPT), a photolithographic process for developing thermal inkjet printheads. The first product to leverage HP's SPT architecture was the Officejet Pro K550, which was unveiled in 2005. Since that time, the firm has continually advanced the K550 imaging platform with new product introductions that offer faster performance and lower operating costs. In March 2009, HP introduced a series of inkjet products based on its SPT architecture that promised to set new standards for lower operating costs of business inkjet printers. Among other claims, HP stated that its Officejet Pro 8000 Enterprise printer can reduce total cost of ownership by as much as 50% when compared with color lasers at similar price points. In October 2012, HP introduced the next phase of their commitment to inkjet technology with the development of a new generation of high productivity office desktop printers. HP's PageWide Technology allows them to deliver the quality and speed of laser with the benefits of page-wide inkjet printhead technology to office users. This spring, HP plans to introduce the enterprise version of this engine: the Officejet Enterprise color X555/X585, specifically designed for mid-market segments.

The purpose of this report is to further understand and test HP's claim of lower total printing costs for its newest page-wide inkjet color MFPs in relation to laser technology and comparable color laser MFP models in this class. InfoTrends developed a comparative based on certain criteria in regard to printing costs for small-business environments. The criteria for yearly page volumes, as well as monochrome and color coverage, were defined by several InfoTrends market research studies.

HP PageWide Technology

- HP has put itself in an enviable position by investing in and owning the intellectual property for scalable page-wide arrays. This provides HP with the ability to scale products from small business up to production-level devices.. With only one pass needed, the printing speed increases significantly, and the amount of energy needed to print is reduced. Another advantage of HP's new products over laser devices is that they do not require belts, fusers, and drums. Page-wide array of 42,240 nozzles with uniform drop weight, speed, and trajectory
- 1,200 nozzles-per-inch native resolution for consistently high print quality
- Designed to last the lifetime of the printer in a higher usage enterprise environment

- Saves power by eliminating fuser required for toner-based technologies

HP has addressed specific barriers limiting penetration of inkjet into the office. A page-wide nozzle array and continuous paper motion overcome the speed limitations of inkjet printers with printheads that scan across a page with reciprocating motion. Each side of the paper passes once at constant speed under fixed page-wide printhead. Page-wide arrays make the most of inkjet's speed potential by avoiding the extra time that scanning printhead printers require to stop and start printhead and paper motion. (Figure 1).

Figure 1: HP Page-wide Array Printhead



The HP new Officejet Enterprise Color X555/X585 series features an innovative automatic drop detection system based on backscattered light from drops-in-flight that was specifically developed by HP for page-wide nozzle arrays. This Backscatter Drop Detection tests the performance of the printhead to help maintain dependable print quality.

Page-wide inkjet printing requires special ink formulations and highly controlled interactions between ink and paper to deliver high print quality in a single pass. HP's new formulated pigments inks for the Officejet Enterprise X555/X585 series meet the demanding requirements of high-quality, fast single-pass printing.

Figure 2: Evolution of HP Page-wide Array Technology



HP Officejet Enterprise Color X555/X585 Series

HP's new Officejet Enterprise Color X555/X585 devices include:

- Three multifunctional 4-in-1 (print/copy/scan/fax) models:
 - HP Officejet Enterprise Color MFP X585 dn¹
 - HP Officejet Enterprise Color MFP X585f
 - HP Officejet Enterprise Color Flow MFP X585z
- Two single function printer models:
 - HP Officejet Enterprise Color X555dn
 - HP Officejet Enterprise Color X555xh

With speeds up to 72 ppm U.S. letter speed in general office mode and up to 44 ppm U.S. letter in professional mode, the new HP Officejet Enterprise Color MFP series gains its speed advantage through the page-wide array, which is also referred to as the “print bar.” The 8.8 inch monolithic print bar is designed for long life with high enterprise usage, and

¹ HP Officejet Enterprise Color MFP X585dn does not include fax option

is field serviceable with a replacement kit. Suggested retail prices for the new MFP series are HP Officejet Enterprise Color MFP X585dn \$1,999, HP Officejet Enterprise Color MFP X585f \$2,299, and HP Officejet Enterprise Color Flow MFP X585z \$2,799.

What's New

The new HP Officejet Enterprise X585 series is based on the popular Officejet Pro X Series, but specifically designed for enterprise environments offering professional quality color and up to twice the speed and half the cost per page (CPP) of comparable lasers. The new models have all the advantages of the HP PageWide technology, plus they are fully loaded with the following HP Enterprise LaserJet features:

- Enterprise security, hard disk drive
- Enterprise-level fleet management
- HP FutureSmart firmware, full OXP solutions support
- Enterprise mobile printing options
- HP Easy Select color touchscreen
- Advance workflow features

In addition to the feature list above, overall improvements over the Officejet Pro X series include an 8" touch control panel with pull-out keyboard, a workgroup class scanner and ADF, new power supply for increased power requirements, universal power, and a very low CPP at 5.5 cents full color and 1.1 cents monochrome. Furthermore, the new models support near field communications (NFCs)' tap to print, and wireless direct printing capability, for quick and convenient mobile printing. In addition, the X585z supports the HP Flow MFP bundle with HP EveryPage integrated keyboard with embedded OCR/Sharepoint. Features typically found in the HP LaserJet Enterprise series.

A single-function printer version of the enterprise series will also be available at launch: the HP Officejet Enterprise Color X555 Series, with print speeds up to 44 ppm in professional mode print speed, and up 72 ppm max in general office mode. Available in two configurations: the Enterprise Color X555dn with duplex and network standard, and the Enterprise Color X555xh, which supports an additional 320 GB secure encrypted hard disk and extra 500 sheet paper tray. Suggested retail prices for the new single-function printer series are \$749 and \$1,199 respectively.

Figure 3 : HP Officejet Enterprise Color MFP X585 Series Product Overview

		
HP Officejet Enterprise Color MFP X585dn (B5L04A)	HP Officejet Enterprise Color MFP X585f (B5L05A)	HP Officejet Enterprise Color Flow MFP X585z (B5L06A)
<ul style="list-style-type: none"> - 42 ppm / 70+ max ppm - Duplex - 50 sheet MP Tray - 50-sheet ADF (m-duplex) - Adjustable 8" color SVGA - 320GB Encrypted Hard Drive - HIP & Easy Access USB - Full OXP, FutureSmart FW - 10K Black/6.6K CMY - Accessory: Add! 500-sheet, product stand and cabinet <p style="text-align: center;">\$1,999</p>	<p>DN plus:</p> <ul style="list-style-type: none"> - Fax <p style="text-align: center;">\$2,299</p>	<p>F plus:</p> <p>Workflow Scan/ADF</p> <ul style="list-style-type: none"> - E-duplex - High-capacity input - Ultrasonic double feed detect - Integrated keyboard - Embedded capture functionality - Extended ADF life <p style="text-align: center;">\$2,799</p>

Product Comparison

InfoTrends chose several competitive color laser MFP models to compare HP’s claim of lower total printing costs on the Officejet Enterprise Color X585 series. The competitive models were chosen based on comparable specifications including average selling price², color and monochrome print speeds, and duty cycles. All the competitive models are based on laser imaging technology. The competitive models included in this analysis are listed in the Table below.

Table 1: Competitive Laser-based MFP & SF Printer Comparison List

Laser-Based MFPs
Konica Minolta bizhub C35
Kyocera FS-C2626 MFP
Lexmark x745de
Ricoh MP C2050SFP

² ASP Source is from GAP Intelligence Monthly Pricing & Promotions Report.

Table 2: Competitive Print Speeds vs. HP Officejet Enterprise Color 585 Series

Model	HP OJ Enterprise Color X585	Konica Minolta bizhub C35	Lexmark X745de	Ricoh MP C2050SFP	Kyocera FS-C2626MFP
Color Print Speed	Up to 44ppm Up to 72ppm General Office Mode	31ppm	35ppm	20ppm	26ppm
Mono Print Speed	Up to 44ppm Up to 72ppm General Office Mode	31ppm	35ppm	20ppm	26ppm

Product Comparison - Multi-Functional Printers

InfoTrends compared HP's new page-wide array MFPs: the HP Officejet Enterprise Color X585 series against competitive color laser-based MFPs. The Officejet Enterprise Color X585 series has a color and monochrome print speed of up to 44 ppm in professional mode and up to 72 ppm in general office mode. The models have a 550-sheet paper input capacity, auto duplex, and 50 sheet automatic document feeder (ADF). They also support up to 8.5" x 14" legal size paper. The devices have a built-in Ethernet network capability with a duty cycle of 75,000 pages. In addition, all the models have a first copy out time of 9.5 seconds. An additional 500 input tray and cabinet are also available. The Officejet Enterprise Color X585 series comes in three configurations; the X585dn, X585f and Flow MFP X585z. Suggested retail pricing is \$1,999, \$2,299, and \$2,799 respectively.

Competitive Product Matrix – Multi-Function Printers

Table 3: Multifunction Printers - Competitive Matrix

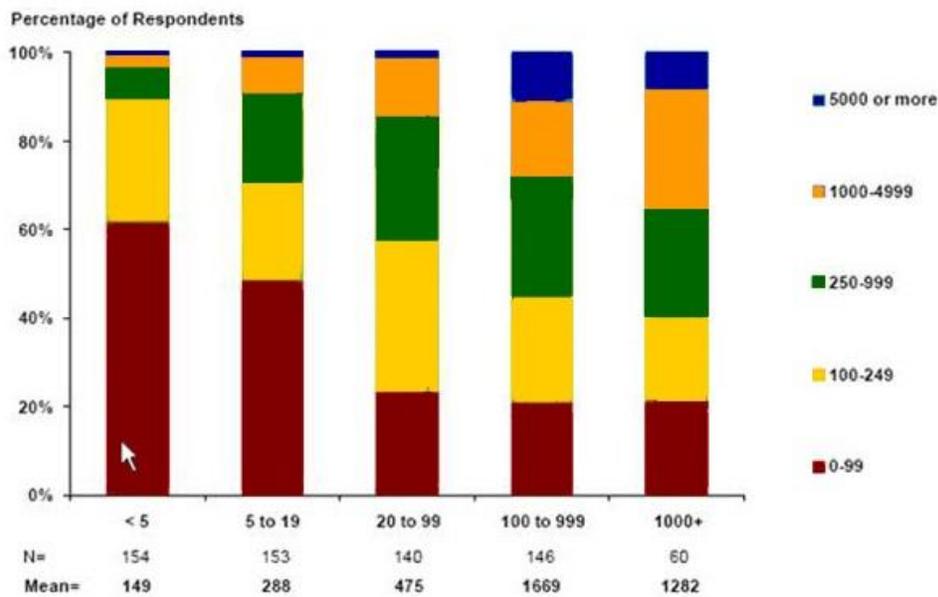
	HP	HP	Konica Minolta	Kyocera	Lexmark	Ricoh
						
Specifications	Officejet Enterprise Color Flow MFP X585dn	Officejet Enterprise Color FlowMFP X585z	Bizhub C35	FS-C2626 MFP	X745de	C2050 SFP
Price – US \$	\$1,999	\$2,799	\$3,639 SRP/\$2,298	\$4,799 SRP	\$2,199 Street	\$4,852 SRP
Technology	Page wide array	Page wide array	Laser (Dry Mono-component toner)	Laser (Dry Dual component toner)	Laser (Dry Mono-component toner)	Laser (Dry Dual component toner)
Color PPM	Up to 44ppm/72ppm	Up to 44/72ppm	31ppm	26ppm	35ppm	20ppm
Mono PPM	Up to	Up to 44/72ppm	31ppm	26ppm	35ppm	20ppm

	44ppm/72ppm					
Input Capacity	550 sheets	550 sheets	250 sheets	250 sheets	550 sheets	250 sheets
ADF Capacity	50	50	50	50	50	100
Duty Cycle	75,000	75,000	120,000	65,000	100,000	N/A
Ink/Toner Capacity	K-10,000pgs CMY – 6,600pgs	K-10,000pgs CMY – 6,600pgs	K – 5,200pgs CMY - 4,600pgs	K- 7,000pgs/CMY - 5,000pgs In the box – K- 3,500, CMY – 2,500pgs	K – 12,000pgs CMY – 7,000pgs In the box – CMYK- 6,000pgs	K, 10,000pgs CMY – 5,500 pgs
CPP U.S. cents K/CMYK*	\$0.011/\$0.055	\$0.011/\$0.055	\$0.018/\$0.113	\$0.026/\$0.112	\$0.022/\$0.114	\$0.007/\$0.077
Power when Printing in Watts	80 Watts	80 Watts	Not Available	468 Watts	560 Watts	496 Watts
Replacement Parts(beyond print cartridges)	Ink Collection Unit that is required at 115k pages - \$19.99	Ink Collection Unit that is required at 115k pages - \$19.99	Black Imaging Unit - \$130 CMY Imaging Units @ - \$230ea. Fuser Unit - \$149/Transfer Belt - \$299	Fuser Main. Kit - \$599.99	CMYK Drum - \$117.99 Fuser Main. Kit - \$250/ Transfer Main Kit - \$250/ Waste Toner Kit - \$9.99	Black and Color Drums

Page Volumes

InfoTrends utilized an internal multi-client market research study to determine typical yearly page volumes for small business environments. The business size was determined by an InfoTrends primary market research study, titled *Office Color: Accelerating Demand and Maximizing Profits*. The mean survey research results were applied to determine the average prints per week for calculating yearly page volumes. InfoTrends utilized the North American mean of 475 pages per week for companies that had between 20 to 99 employees. Respondents were split evenly between company sizes and all major vertical industries were represented in the study.

Figure 4: Average Number of Pages Printed per Week on Inkjet Printer or MFP device



Page Coverage

The assumptions for page coverage were based on an InfoTrends study, titled *Buying Habits in the Retail Channel Study*, which was a web-based survey deployed across the U.S. The respondents represented a variety of vertical markets, income levels, and ages. The question was based on the end-users’ main application for printing on their single-function color inkjet printers. Survey results were averaged out to obtain a standard for color and monochrome page coverage (Figures 4 & 5 below). Usage period or length of ownership was determined to be one year, two years, or three years for this total cost of printing comparison.

Figure 5: Page Coverage Assumptions – SF Inkjet Printers

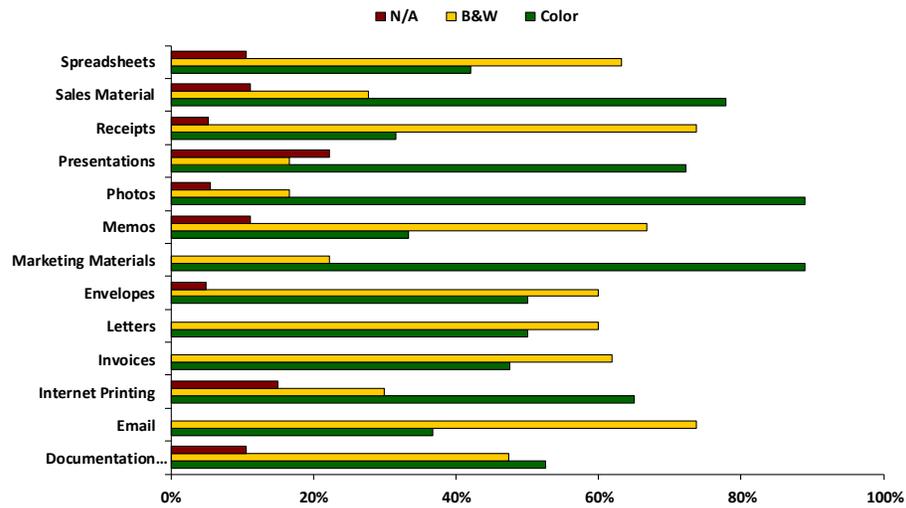


Figure 6: Page Coverage Assumptions – MFP Inkjet

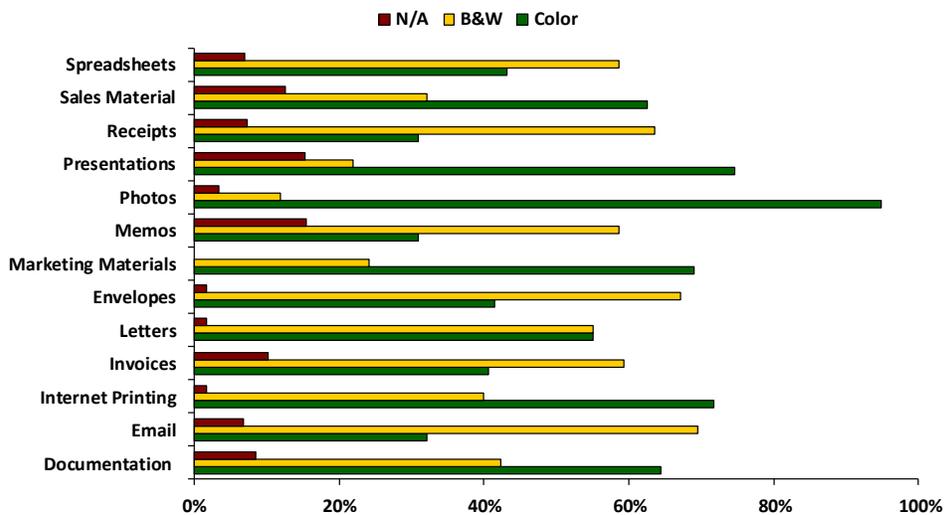


Table 4: Location Size, Percentage of Page Coverage, & Length of Ownership for TCO

Location Size	Average Page Volume (weekly)	Percentage of Pages Color & B&W	Length Of Ownership
20-99 employees	475 pages	Color Coverage 55% B&W Coverage 45%	Year 1 ,Year 1 + Year 2, Year 1 + Year 3

Methodology

Cost-Per-Page

Supplies yield assumptions were based on the industry standard measurements of using the specified yields for monochrome and color under standard ISO/IEC 24712 testing coverage, with continuous printing and highest-capacity cartridges (for a normal color and normal monochrome text page). The CPP calculations were determined utilizing supplies pricing and yields from data supplied by GAP Intelligence. InfoTrends chose to use third party figures for supplies yields and pricing to remain objective and to eliminate any potential for skewed results by using figures reported by vendors.

To calculate total CPP, InfoTrends included all replaceable supplies for each model. One of the advantages of inkjet technology is that it typically requires fewer replaceable supplies compared with laser-based imaging. For example, the only replaceable supplies used in the new HP Officejet Enterprise Color X585 series are the individual color ink cartridges and a long-life waste kit, which lasts 115,000 pages. In fact, the new HP model utilizes separate printheads and ink tanks, and the printheads are designed for long life, but are replaceable in the field. This is an important benefit because it reduces the cost of the replacement ink cartridges, which leads to lower overall printing costs. The new inks have the ability to perform at high speeds and produce quality/usable documents that are fast-drying, long-lasting, and highlighter-resistant. Another feature of HP's new devices is a "very low ink" warning as well as a gauge indicating approximately how many pages remain before the supply runs out. The printer will also finish printing the last page at resolution, which HP refers to as "out of ink page completion." The high yield supplies available for these devices are more environmentally friendly than low-yield cartridges because they involve less intervention and, consequently, less waste. Overall the ink cartridges have less packaging than laser toner cartridges.

Many of the color laser products in our comparison grid require other replaceable components, such as fuser units, organic photo-conductor (OPC) belts, and waste toner kits. These additional supply components add to the total cost of printing and are often overlooked when users consider total operating costs. Whenever possible, InfoTrends selected high-capacity toner cartridges to achieve the most economical CPP for competitive laser devices. In fact, HP printers have up to 90% fewer long-life consumables than the competition, resulting in \$200 to \$400 in cost savings in reduced interventions over the life of the printer

**Figure 7: Service Visits Driven by Wear Out Items
(Over 300K total pages, 50% color pages)**

	Officejet Enterprise X585dn	Lexmark X748de	Kyocera FS-C2626
Black Drums	N/A.	14	1
Color Drums Sets	N/A	7	1
Ink/Toner Collection Units	2	11	9
Fusers	N/A	2	1
Transfer Belts	N/A	2	1
Total Service Events	3	36	13
Typical Expected Visits (Combining Some Service Events)	2	~18	9
Expected Service Cost (\$30/visit)	\$60	\$540	\$270

** Color drums are assumed to be 50% utilized (i.e. engaged 50% of the time), on average, when printing black only pages. Source, Hewlett Packard Company*

It used to be that the question of ink versus laser was a combination of two factors: initial investment (price of unit) and the cost over time. Typically laser printers have a higher price but, deliver a lower CPP despite having more expensive cartridges. Inkjet printers were typically cheaper to purchase, but become more expensive to own over time as the cartridges are replaced more frequently. In the past, in a CPP analysis, laser printers would fare much better; however, with the introduction of HP's new Officejet Enterprise Color X585 series and page-wide array technology, HP has been able to address both of these requirements—thus offering up to 50% cost per print savings compared to color lasers and a competitive price point, along with up to twice the speed.

Compared with the competitive color laser printers we have listed below, the new HP Officejet X series offers up to twice the speed and up to a 50% cost savings in CPP. When compared to the Kyocera FS-C2626 color laser MFP, the HP Officejet Pro X 585 series has a total CPP of just five cents versus the Kyocera FS-C2626: 14 cents. The HP Officejet Pro X series offers a savings of roughly 63%. In addition, both the Lexmark's X746de and

Konica Minolta's bizhub C35 color laser MFPs have a total CPP of roughly 13 cents. The HP Officejet Pro X 585 series offers a CPP saving of 51% compared to those models. The table below outlines HP's total CPP savings against key competitors.

Table 5: Cost Per Page Savings by Model

Model	Consumables	Price	Yield	Coverage	Color CPP	B/W CPP	HP OJ	% of Savings	
KM bizhub C35	Toner Black	\$45.00	5,200	5%	\$0.009	\$0.009			
	Toner Cyan	\$110.00	4,600	5%	\$0.024				
	Toner Magenta	\$110.00	4,600	5%	\$0.024				
	Toner Yellow	\$110.00	4,600	5%	\$0.024				
	Waste Kit	\$20.00	36,000		\$0.001				
	Black Imaging Unit	\$130.00	30,000		\$0.004	\$0.004			
	Cyan Imaging Unit	\$230.00	30,000		\$0.008				
	Magenta Imaging Unit	\$230.00	30,000		\$0.009				
	Yellow Imaging Unit	\$230.00	30,000		\$0.009				
	Fuser Unit	\$149.00	100,000		\$0.001	\$0.001			
	Transfer Belt	\$299.00	100,000		\$0.003	\$0.003			
	2 nd Transfer Roller	\$39.00	100,000		\$0.0004	\$0.0004			
					<i>Total</i>	<i>\$0.113</i>	<i>\$0.018</i>		
				<i>Total CCP</i>	<i>\$0.132</i>		<i>\$0.055</i>	<i>51%</i>	
Kyocera FS-C2626	Toner Black	\$160.00	7,000	5%	\$0.023	\$0.023			
	Toner Yellow	\$160.00	5,000	5%	\$0.032				
	Toner Magenta	\$160.00	5,000	5%	\$0.032				
	Toner Cyan	\$160.00	5,000	5%	\$0.032				
	Fuser Main. Kit	\$599.99	200,000		\$0.003	\$0.003			
					<i>Total</i>	<i>\$0.122</i>	<i>\$0.026</i>		
					<i>Total CCP</i>	<i>\$0.148</i>		<i>\$0.055</i>	<i>63%</i>
Lexmark X746de	Toner Black	\$181.99	12,000	5%	\$0.015				
	Toner Yellow	\$203.99	7,000	5%	\$0.029				
	Toner Magenta	\$203.99	7,000	5%	\$0.029				
	Toner Cyan	\$203.99	7,000	5%	\$0.029				
	CMYK Drum	\$117.99	20,000		\$0.006	\$0.001			
	Waste Toner Container	\$9.99	25,000		\$0.0004	\$0.0004			
	Fuser Main. Kit	\$250.00	100,000		\$0.003	\$0.003			
	Transfer Main. Kit	\$250.00	100,000		\$0.003	\$0.003			
					<i>Total</i>	<i>\$0.114</i>	<i>\$0.022</i>		
				<i>Total CCP</i>	<i>\$0.136</i>		<i>\$0.055</i>	<i>52%</i>	

Model	Consumables	Price	Yield	Coverage	Color CPP	B/W CPP	HP OJ	% of Savings
Ricoh Aficio MP C2050 SPF	Toner Black	\$65.00	10,000	5%	\$0.007	\$0.007		
	Toner Yellow	\$117.00	5,000	5%	\$0.021			
	Toner Magenta	\$117.00	5,000	5%	\$0.021			
	Toner Cyan	\$117.00	5,000	5%	\$0.021			
					<i>Total CPP</i>	<i>\$0.077</i>	<i>\$0.055</i>	<i>22%</i>
HP Officejet Enterprise Color X585 Series	Black Ink	\$110.00	10,000	5%	\$0.011			
	Yellow Ink	\$97.00	6,600	5%	\$0.015			
	Magenta Ink	\$97.00	6,600	5%	\$0.015			
	Cyan Ink	\$97.00	6,600	5%	\$0.015			
				<i>Total CPP</i>	<i>\$0.055</i>			

TCPP determined using the Industry Standard ISO/IEC 24712 for color CMYK pages

Total Printing Costs

To calculate total printing costs, InfoTrends included the acquisition cost of the hardware, plus the cost of the consumable supplies based on yearly page totals. This shows the total cost of printing, but it is not intended to show total cost of operation, which might include other variables such as the cost of paper, maintenance costs, and any extended warranties.

To ensure accurate printing costs for the first year of usage, InfoTrends calculated the amount of pages that each competitive model could print before starter supplies (supplies that ship with the device) were consumed. Yields for starter supplies varied for each model and were calculated individually based on page coverage and yield assumptions. As a result, annual supplies costs may be different for each year of usage, depending upon the number of pages that could be printed with the starter supplies.

Figure 7: Total Cost of Printing Calculation Assumptions were Based on the Following Formula:

$$\left\{ \frac{\text{Cost of Supplies}}{\text{Supplies Yield}} \times \text{Printed Pages Per Year} \times \text{Length of Use} + \text{Hardware Acquisition Cost} \right\}$$

Multifunctional Devices

InfoTrends compared HP's new page-wide array MFPs: the Officejet Enterprise X585 series against competitive color laser-based MFPs. The assumptions for page volumes by company size are the same as those outlined above for single-function printers.

Small Business (20-99 Employees), 1–3 Year Ownership

InfoTrends calculated printing costs for multifunctional devices based on typical usage in a small business environment. Therefore, we also analyzed the MFP data based on a yearly page volume of 24,700 pages, which matches our assumptions for print volumes of small businesses with 20 to 99 employees. At these volumes, HP's Officejet Enterprise X585 series demonstrates substantial cost savings compared with competitive laser-based models.

Based on our conclusions, the Officejet Enterprise X585 series is the most economical device, with a total cost of ownership of \$2,801 over a one year period. In contrast, Kyocera FS-2626 MFP is the most expensive with a total operating cost of \$6,879 during the same period. It should be pointed out that while the higher equipment cost for laser products contributes to increased total operating costs, it is clear from our calculations that HP's page-wide array inkjet-based MFPs are less expensive to operate based on the on-going supplies costs.

Figure 8 below provides a competitive overview of total cost of printing for small and medium size business customers with (20 to 99 employees) over a one, two, and three year period. As the chart shows, HP is the only vendor to hold total printing costs under \$5,000 for a three year period. In fact, the Officejet Enterprise X585 series has a total printing cost of just \$4,515 for three years. This represents a cost savings of 57%, or \$5,884, over the three year period compared to the Kyocera FS-C2626, which has a total cost of ownership of \$10,399 for a three year period.

Figure 8: 1-3 Year Total Printing Cost Overview for Small Businesses - (20-99 Employees) Multifunctional Products

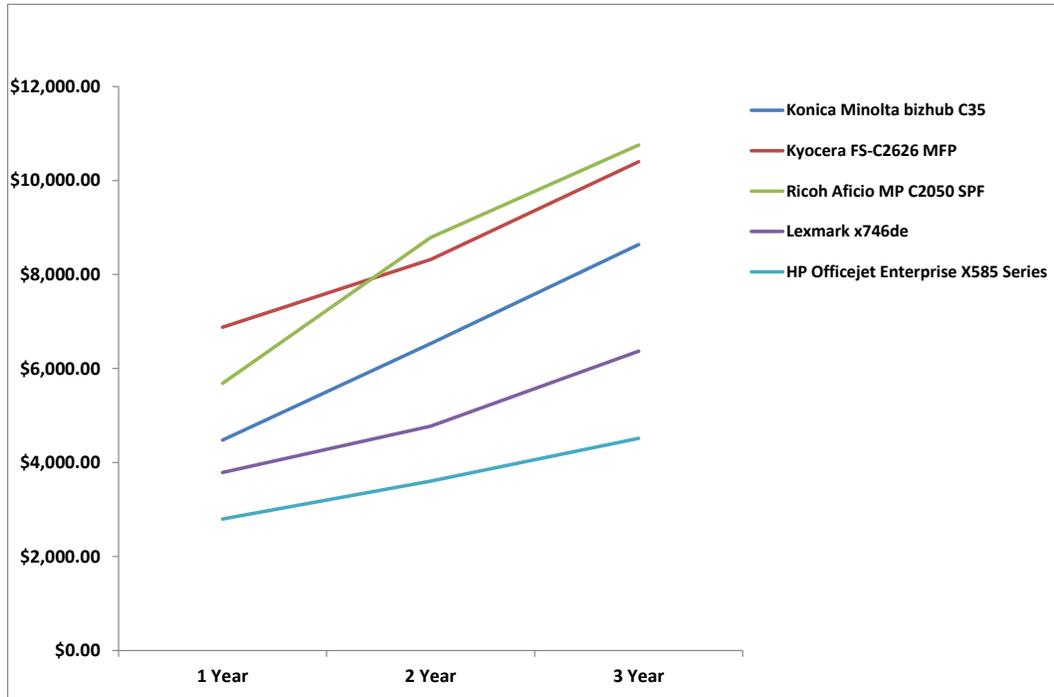


Table 6: 1-3 Year Total Printing Cost Overview for Small Business - (20-99 Employees) Multifunctional Products

	1 Year	2 Year	3 Year
Konica Minolta bizhub C35	\$4,479.00	\$6,534.00	\$8,638.00
Kyocera FS-C2626 MFP	\$6,879.00	\$8,319.00	\$10,399.00
Ricoh Aficio MP C2050 SPF	\$5,684.00	\$8,787.68	\$10,755.52
Lexmark x746de	\$3,786.92	\$4,772.86	\$6,370.77
HP Officejet Enterprise X585 Series	\$2,801.00	\$3,603.00	\$4,515.00

Conclusion

As previously mentioned, the purpose of this report was to further evaluate HP's total printing cost claims in regard to its new page-wide array inkjet devices. Based on our assumptions and methodology, InfoTrends has concluded that not only can HP's Officejet Enterprise Color X585 series deliver color printing at significant cost savings reduction compared to competitive color laser products, but the cost budget savings can be substantially greater in certain cases. Of course, there are many variables that impact total operating costs, yet HP Officejet Enterprise is the better value for companies printing, on average, less than 10,000 pages per month.

Nevertheless, InfoTrends' assumptions are based on primary research, and we believe that our page volume assumptions represent typical usage in small to medium-sized businesses (SMBs) and enterprise business environments. Some argue that while inkjet products might offer a more economical option, the technology is not robust enough to withstand the everyday use of an office environment. That may have been the case in the past, but HP's new page-wide array technology incorporates advancements in speed, performance, cost to print, sustainability, and image quality that has not been seen before in this class of products. The HP PageWide Technology print bar is not a mechanical moving part, so it does not suffer the same wear characteristics that a traditional geared toner cartridge and drum endure. Another question is whether HP can help eliminate some of the bias that exists toward inkjet technology in the office. Chances are that the strength of the technology and HP's messaging will at least help build the inkjet argument in the office.

As a result, InfoTrends believes that HP's new Officejet Enterprise Color X585 series MFPs represent a strong alternative to laser for SMBs and enterprise environments, especially those looking to take advantage of the value of color. InfoTrends has long predicted an increased penetration of inkjet technology into traditional business applications, and we believe that HP's latest products are a strong example of the value that inkjet technology can bring to the SMB and enterprise market.

Additional information is available from HP at

<http://www.hp.com/go/officejetenterprisex>.

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