

February 20, 2009

Analysis

New HP Inkjets Change the Game for Small Business: Color at Half the Cost of Laser

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Published by

Digital Peripherals Solutions
Consulting Services

Abstract

InfoTrends conducted a Total Cost of Printing study and product comparison on the competitive value of Hewlett Packard's latest inkjet printers, the Officejet Pro 8000/8500 series against comparable color laser printers. This report includes a cost per page and total cost of printing analysis.

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Table of Contents

Abstract 1

Introduction 3

Product Comparison..... 4

 Product Comparison – Single Function Printers 4

 Competitive Product Matrix – Single Function Printers..... 5

 Product Comparison – MFP Printers..... 5

 Competitive Product Matrix – MFP Printers..... 6

 Page Volumes..... 6

 Page Coverage 7

Methodology..... 9

 Cost-Per-Page 9

 Total Printing Costs..... 9

TCO Analysis..... 11

 Single Function Printers 11

Small Business (5-19 Employees), 1–3 Year Ownership 11

 Multifunctional Devices..... 13

Small Business (5-19 Employees), 1-3 Year Ownership..... 13

Conclusion 14

Introduction

Over the years, color inkjet printers have become the established device in U.S. households and small offices. However, inkjet printers and All-in-Ones (AIOs) have been slow to migrate to the general office environment. Traditionally, 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. Yet, InfoTrends believes that 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 print heads have relatively few moving parts; and the quality that can be delivered is high.

To date, inkjet technology has not been broadly deployed in the mid-market. For many reasons, we have yet to see an inkjet implementation that combines all of the 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. Nevertheless, it has been high cost of ownership, mainly, the high cost of inkjet replacement cartridges and the corresponding per-page printing costs that have been the strongest barriers for many to accept these devices as an alternative to laser-based technology for general business applications.

Hewlett-Packard 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 print heads. The first product to leverage HP's SPT architecture was the Officejet Pro K550, which was also unveiled in 2005. Since that time, the firm has continually advanced the K550 imaging platform with new product introductions offering faster performance and lower operating costs. In March, 2009, HP is slated to introduce a series of inkjet products based on its SPT architecture that promise to set new standards for lower operating costs of business inkjet printers. Among other claims, HP states that its new Officejet Pro 8000/8500 series printers and MFPs can reduce total cost of ownership by as much as 50% compared with color lasers at similar price points.

The purpose of this report was to further understand and test Hewlett Packard's claim of lower total printing costs for its new inkjet color printers relative to laser technology and comparable color laser printer models in this class. InfoTrends developed a comparative based on certain criteria with regard to printing costs for small-business environments. The criteria for yearly page volumes and monochrome and color coverage were defined by several InfoTrends market research studies.

Product Comparison

InfoTrends chose several competitive color printer models (*both single function and multi-function*) to compare HP's claim of lower total printing costs on the Officejet Pro 8000/8500 series. The competitive models were chosen based on comparable specifications including average selling price*, 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 SF & MFP – Comparison List

| Single Function Laser-based Printers | Laser-based MFP |
|--------------------------------------|--------------------|
| Dell 1320C | Dell 2135CN |
| Samsung CLP 315, CLP-315W | Samsung CLX-3175FN |

Product Comparison – Single Function Printers

The HP Officejet Pro 8000 single-function printer has a color print speed of 11 ppm and a monochrome print speed of 15 ppm. It supports up to a 250- sheet input capacity, PCL 3 Page Description Language and up to 8.5 x 14 (legal) size paper output. The Officejet Pro 8000 color printer has a suggested retail price of \$149.

Competitive Product Matrix – Single Function Printers

Table 2: Single Function Printers - Competitive Matrix

| | HP | Samsung | Dell |
|--|---|---|---|
| |  |  |  |
| Specifications | HP Officejet Pro 8000 | CLP-315 | 1320C |
| Price – US \$* | \$149 | \$194 | \$249 |
| technology | 4 individual ink | 4-pass laser | in line laser |
| Color PPM | 11 | 4 | 12 |
| Mono PPM | 15 | 16 | 16 |
| Input capacity | 250 sheets | 150 sheets | 250 sheets |
| Duty Cycle | 15,000 | 20,000 | 35,000 |
| Ink/Toner capacity | 1400 CMY 2200 K | 1000 CMY / 1500 K | 2000 C,M,Y,K |
| | in the box: 900 CMY/1000 K | in the box: 700 CMY / 1000K | in the box: 1,000 C,M,Y,K |
| Cost per page US¢ K/CMYK* | \$.016/\$.072 | \$.038/\$.185 | \$.030/\$.148 |
| Replacement parts (beyond print cartridges) | None | Drum 24K mono, 6K color; waste 10K mono, 2.5K color | None |

*Printer Acquisition cost and supplies pricing based on ASP's from NPD Group - Retail Scorecard and E-Commerce

Product Comparison – MFP Printers

HP's Officejet Pro 8500 color inkjet MFP has a print speed of 11 ppm full color and 15 ppm monochrome with a maximum color resolution of 4800 dpi. It has built-in Ethernet network capability with a duty cycle of 15,000 pages. Paper input capacity includes 250-sheet tray and a 50-sheet automatic document feeder (ADF).

Competitive Product Matrix – MFP Printers

Table 3: Multifunctional Printers - Competitive Matrix Assumptions

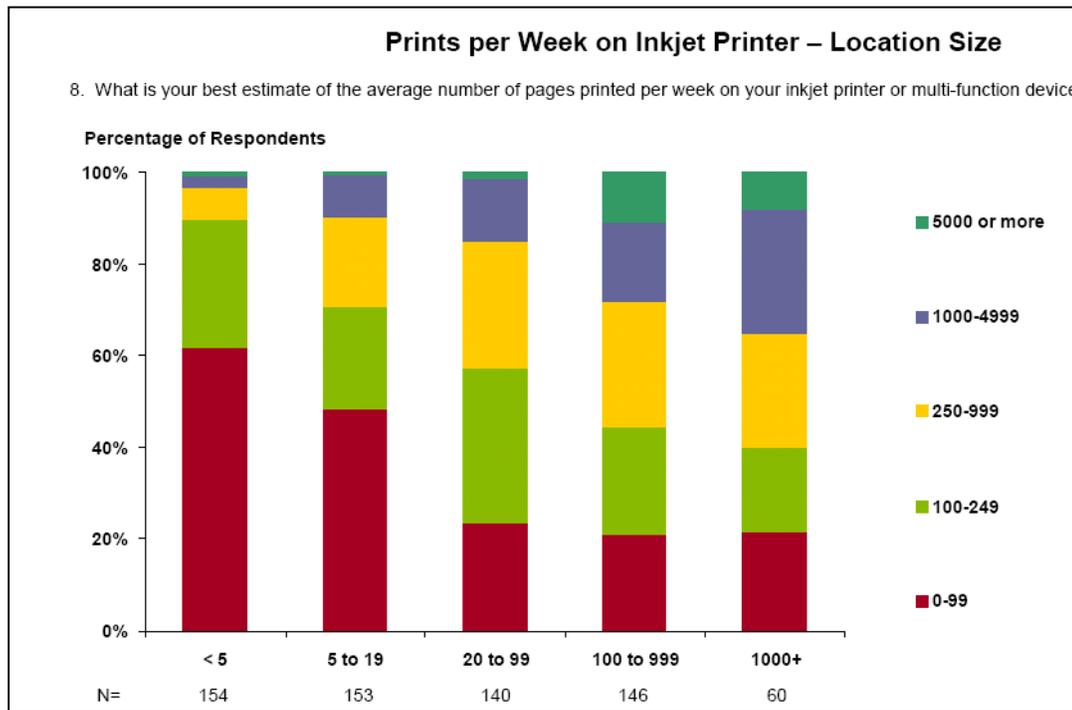
| | HP | Samsung | Dell |
|---|---|---|---|
| |  |  |  |
| Specifications | HP Officejet Pro 8500 | CLX-3175FN | 2135dn |
| Price – US \$* | \$299 | \$393 | \$384 |
| technology | 4 individual ink | 4-pass laser | in-line laser |
| Color PPM | 11 | 4 | 12 |
| Mono PPM | 15 | 17 | 16 |
| Input capacity | 250 sheets | 150 sheets | 250 sheets |
| ADF capacity | 50 | 15 | 35 |
| Duty Cycle | 15000 | 20,000 | 40,000 |
| Ink/Toner capacity | 1400 CMY 2200 K | 1000 CMY / 1500 K | 2500 CMYK |
| | in the box: 900 CMY/1000 K | in the box: 700 CMY / 1000K | in the box: 1000 CMY, 2500 K |
| Cost per page US¢ K/CMYK* | \$.016/\$.072 | \$.038/\$.018.5 | \$.028/\$0.142 |
| Replacement parts (beyond print cartridges.) | None | Drum 24K mono, 6K color; waste 10K mono, 2.5K color | |

*Printer Acquisition cost and supplies pricing based on ASP's from NPD Group - Retail Scorecard and E-Commerce

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 entitled 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 149 pages to determine the yearly prints for less than 5 employees and 288 pages per week for companies that had between 5 to 19 employees (see Figure 1 below). Respondents were split fairly evenly between small, medium-sized, and large companies, and all major vertical industries were represented in this study.

Figure 1: 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* a web-based survey deployed across the U.S. in late 2007. 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 and multi-function color inkjet printers. Survey results were averaged out to obtain a standard for color and monochrome page coverage (see Figure 2 & 3 below). Usage period or length of ownership was determined to be either one year, two years, or three years for this total cost of printing comparison.

Figure 2: Page Coverage Assumptions – SF Inkjet Printers

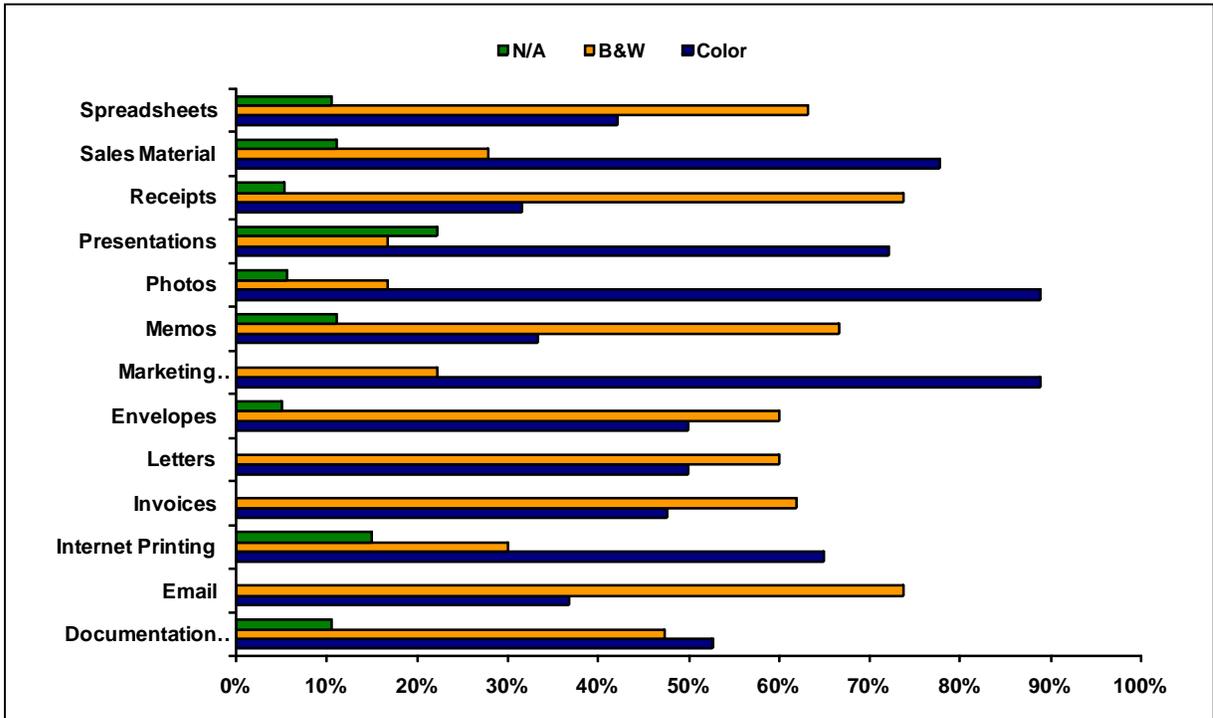


Figure 3: Page Coverage Assumptions – MFP Inkjet

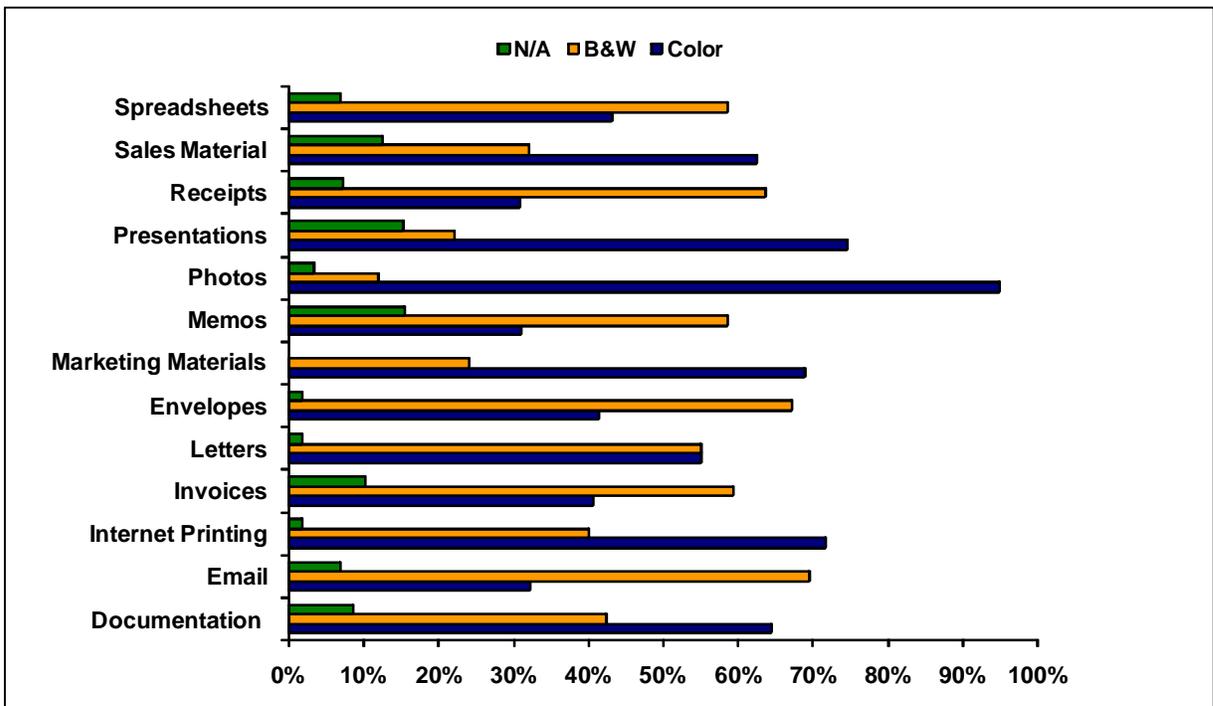


Table 4: Location Size, Percentage of Page Coverage & Length of Ownership for TCO

| Location Size | Average Page Volume (weekly) | Percentage of Pages Color & B&W* | Length Of Ownership |
|-------------------|------------------------------|--|---------------------------|
| < 5 employees | 149 pages | Color Coverage 55% B&W Coverage 45% | 1 year, 2 year and 3 year |
| 5 to 19 employees | 288 pages | Color Coverage 55% B&W Coverage 45% | 1 year, 2 year and 3 year |

Methodology

Cost-Per-Page

Supplies yield assumptions were based on the industry standard measurements of 5% black coverage (a normal back text page) and a 20% color (CMYK) coverage (a normal color page). The cost-per-page calculations for the HP Officejet series and competitive color laser printers were determined utilizing supplies pricing and yields from data supplied by the NPD Group. 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 cost-per-page, 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 Pro series products are the individual color ink cartridges. In fact, the new HP models utilize separate print heads and ink tanks, and that the print heads actually last the lifetime of the product. This is an important benefit because it reduces the cost of the replacement ink cartridges, which leads to lower overall printing costs.

On the other hand, many of the color laser products in our comparison grid require other replaceable components, such as fuser units, OPC belts, and waste toner kits. These additional supplies 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 cost-per-page for competitive laser devices. A complete listing of all the supplies components included in our total cost of printing calculations for each model can be found in Table 5.

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 results in 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) are consumed. Yields for starter supplies varied for each model and were therefore 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.

Total cost of printing calculation assumptions were based on the following formula:

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

Table 5: Cost-Per-Page Comparison Grid by Model

| Cost Per Page by Model | | | | | | | |
|-------------------------|---------------|-------------------------------|----------|------------------|--------------|----------------|----------------|
| Model | Technology | Consumables | Price | Yield | Coverage | Black CPP | Color CPP |
| Dell | Black Laser | High Yield Toner- Black | \$59.99 | 2,000 | 5% | \$0.030 | \$0.030 |
| 1320 | Color Laser | High Yield Toner - Cyan | \$78.99 | 2,000 | 5% | | \$0.039 |
| High Yield | Color Laser | High Yield Toner - Yellow | \$78.99 | 2,000 | 5% | | \$0.039 |
| | Color Laser | High Yield Toner - Magenta | \$78.99 | 2,000 | 5% | | \$0.039 |
| | | | | | Total | \$0.030 | \$0.148 |
| Dell | Black Laser | Toner - Blk. High Capacity | \$69.99 | 2,500 | 5% | \$0.028 | \$0.028 |
| AIO2135cn | Color Laser | Toner - Cyan High Capacity | \$94.99 | 2,500 | 5% | | \$0.038 |
| High Capacity | Color Laser | Toner - Yellow High Capacity | \$94.99 | 2,500 | 5% | | \$0.038 |
| | Color Laser | Toner - Magenta High Capacity | \$94.99 | 2,500 | 5% | | \$0.038 |
| | | | | | Total | \$0.028 | \$0.142 |
| Samsung | Black Laser | CLT-K409S - Toner Black | \$44.82 | 1,500 | 5% | \$0.030 | \$0.030 |
| CLP-315/CLP-315W | Color Laser | CLT-C409S - Toner Cyan | \$41.24 | 1,000 | 5% | | \$0.041 |
| CLX3175 (AiO) | Color Laser | CLT-M409S - Toner Magenta | \$41.24 | 1,000 | 5% | | \$0.041 |
| | Color Laser | CLT-Y409S - Toner Yellow | \$41.24 | 1,000 | 5% | | \$0.041 |
| | Special Laser | CLT-R409 - Imaging Kit | \$148.91 | 24,000/ 6,000 | | \$0.006 | \$0.025 |
| | Special Laser | CLT-W409 - Waste Toner | \$17.62 | 10,000/ 2,500 | | \$0.002 | \$0.007 |
| | | | | | Total | \$0.038 | \$0.185 |
| HP | Black ink | C4906A - black | \$35.99 | 2,200 | 5% | \$0.016 | \$0.016 |
| Officejet Pro | Color ink | C4907A - Cyan | \$25.99 | 1,400 | 5% | | \$0.019 |
| 8000 series | Color ink | C4908A - magenta | \$25.99 | 1,400 | 5% | | \$0.019 |
| 8500 AiO series | Color ink | C4909A - yellow | \$25.99 | 1,400 | 5% | | \$0.019 |
| | | | | | Total | \$0.016 | \$0.072 |

Cost of Printing Analysis

Single Function Printers

InfoTrends compared HP's Officejet Pro 8000 single-function printer against single function color laser printers with similar print speeds and specifications and found a significant difference in both color printing costs and total cost of printing. The competitive models chosen for this comparison were the Samsung CLP-315 and the Dell 1320C.

Small Business (5-19 Employees), 1–3 Year Ownership

InfoTrends wanted to represent as close as possible a typical small business printing environment. Therefore, we analyzed the single-function printer data based on a yearly page volume of 14,976 pages, which matches our assumptions for print volumes of small businesses with 5-19 employees. For the small business environment, InfoTrends chose to compare HP's Officejet Pro 8000 with the competitive color laser models. InfoTrends calculated the total cost of printing and cost savings for the HP OfficeJet Pro 8000 printer over a one year period and found when compared with color laser printers with similar specifications, the HP OfficeJet Pro 8000 offered a considerable cost savings over the length of ownership.

Table 6 shows total printing costs based on a 1-, 2-, and 3-year usage period. As indicated, HP's Officejet Pro 8000 provides the most economical option based on our print volume assumptions. In fact, the data indicates that in some cases the percentage of savings achieved with HP's Officejet Pro 8000 increases as print volumes rise. The most expensive model to own based on our assumptions is the Samsung CLP 315. Over a one-year period, small businesses could save 50% in total printing costs, or a total of \$795 with the Officejet Pro 8000 compared to the Samsung CLP 315.

Chart 1 below provides a competitive overview of total printing costs for small businesses (5-19 employees) over a one-, two, and three-year period. In this case, the HP Officejet Pro 8000 inkjet printer again provides the lowest total printing costs compared with the competitive color laser printers.

Chart 1: 1-3 Year Total Printing Costs for Small Business (5-19 Employees)
Single Function Printers

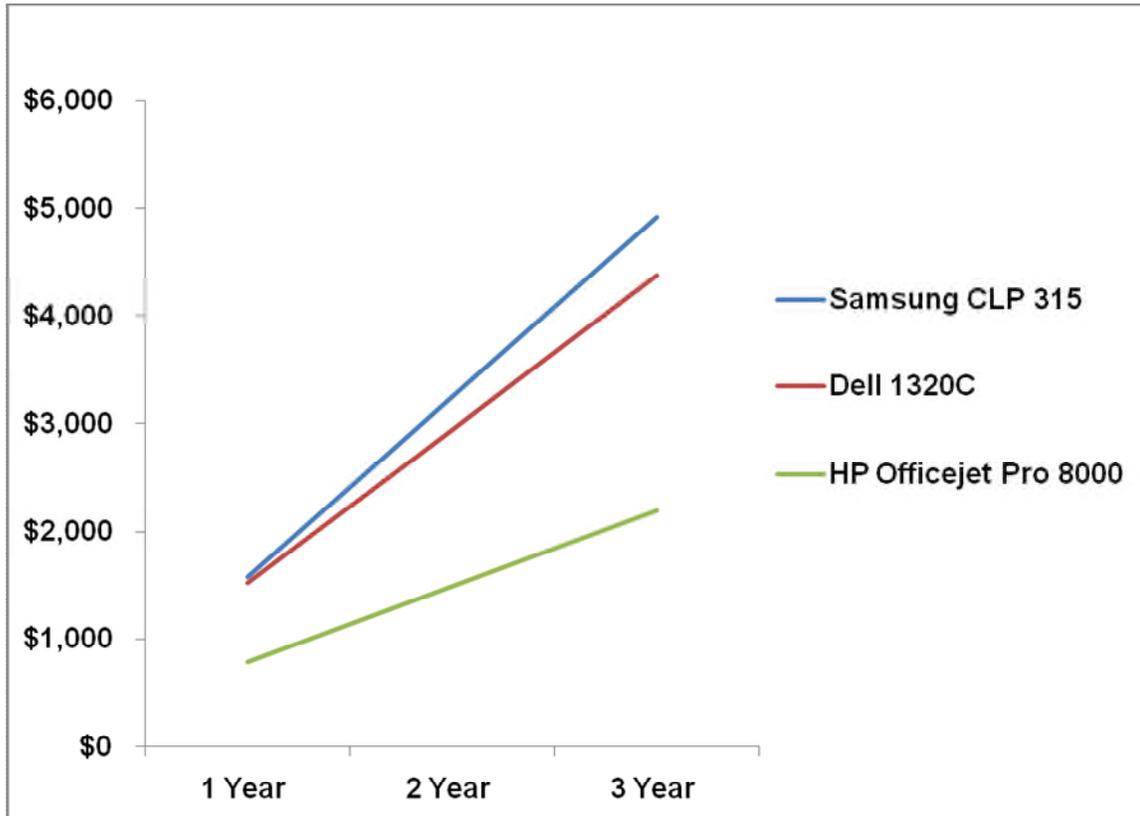


Table 6: 1-3 Year Total Printing Costs for Small Business (5-19 Employees)
Single Function Printers

| | 1 Year | 2 Year | 3 Year |
|-----------------------|---------|---------|---------|
| Samsung CLP 315 | \$1,581 | \$3,250 | \$4,920 |
| Dell 1320C | \$1,526 | \$2,951 | \$4,376 |
| HP Officejet Pro 8000 | \$786 | \$1,490 | \$2,194 |

Multifunctional Devices

InfoTrends also compared HP's new inkjet All-in-One, the Officejet Pro 8500 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.

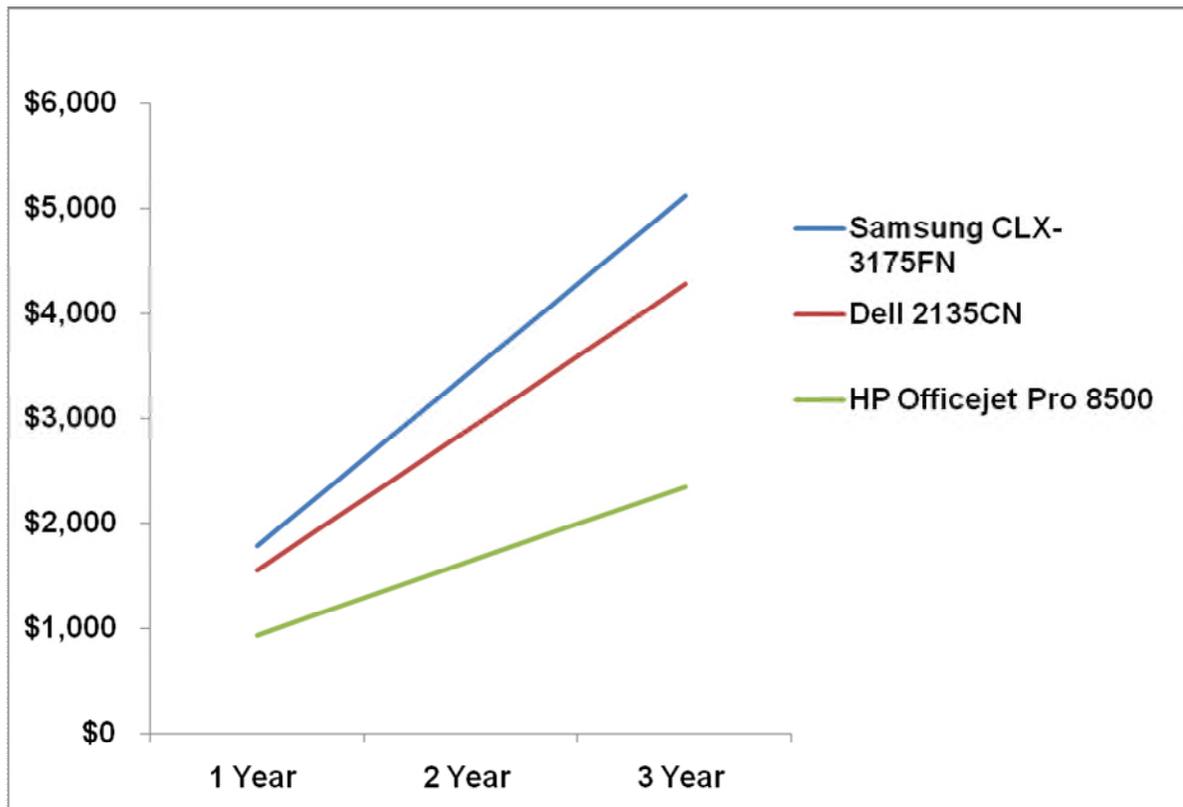
Small Business (5-19 Employees), 1–3 Year Ownership

As with our single-function printer analysis, InfoTrends wanted to calculate 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 14,976 pages, which matches our assumptions for print volumes of small businesses with 5-19 employees. At these volumes, HP's Officejet Pro 8500 All-in-One demonstrates substantial cost savings compared with competitive laser-based models.

Based on our assumptions, the Officejet Pro 8500 is again the most economical device, with a total cost of ownership of \$936.25 over a 1-year period. In contrast, Samsung's CLX-3175FN is the most expensive with a total operating cost of \$1,779.63. 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 inkjet-based All-in-Ones are less expensive to operate based on the on-going supplies costs.

Chart 3 below provides a competitive overview of total cost of printing for small business customers (5-19 employees) over a one-, two, and three-year period. As the chart shows, HP is the only vendor to hold total printing costs under \$2,500 for a three-year period. In fact, the Officejet Pro 8500 has a total printing cost of just \$2,344 for three years. This represents a cost savings of 54%, or \$2,775 over the three-year period, compared with the Samsung CLX-3175FN, which has a total cost of ownership of \$5,119.

**Chart 3: 1-3 Year Total Printing Cost Overview for Small Businesses (5-19 Employees)
Multifunctional Products**



**Table 7: 1-3 Year Total Printing Cost Overview for Small Business (5-19 Employees)
Multifunctional Products**

| | 1 Year | 2 Year | 3 Year |
|-----------------------|---------|---------|---------|
| Samsung CLX-3175FN | \$1,780 | \$3,449 | \$5,119 |
| Dell 2135CN | \$1,558 | \$2,916 | \$4,275 |
| HP Officejet Pro 8500 | \$936 | \$1,640 | \$2,344 |

Conclusion

As previously mentioned, the purpose of this report was to further evaluate HP’s total printing cost claims with regard to its new inkjet devices. Based on our assumptions and methodology, InfoTrends has concluded that HP’s inkjet products can not only deliver color printing at 50% the cost of competitive laser products, but in some cases the cost savings can be substantially greater than that. Of course, there are many variables that impact total operating costs, and there is certainly a strong case to be made for laser technology at higher page volumes.

Nevertheless, InfoTrends’ assumptions are based on primary research conducted with smaller companies, and we believe that our page volume assumptions represent typical usage in micro- and small-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. Yet, the duty cycle ratings of HP's new inkjet products are substantially greater than the monthly print volumes suggested in this study.

Productivity is also a concern, but HP has consistently improved the performance of its inkjet products, and the Officejet Pro 8000/8500 series offer print speeds that are comparable to the laser-based devices included in this study.

As a result, InfoTrends believes that HP's new Officejet Pro 8000/8500 series represent a strong alternative to laser for smaller businesses—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 office market.

This material is prepared specifically for clients of InfoTrends, Inc. The opinions expressed represent our interpretation and analysis of information generally available to the public or released by responsible individuals in the subject companies. We believe that the sources of information on which our material is based are reliable and we have applied our best professional judgment to the data obtained.



HP CPP and Total Cost of Printing Competitive Overview

*Prepared by InfoTrends,
Digital Peripherals Solutions Services
January 2009*

HP Competitive Overview – Objectives

- **Provide a CPP (Cost Per Page) matrix on new HP Color Officejet Pro 8000/8500 series versus comparable competitive printers based on various page coverage.**
- **Total Cost of Printing comparison matrix on key competitive printer models versus new HP Officejet Pro 8000/8500 Series based on various monthly page volumes and Small Business & Micro Business segments (defined by InfoTrends)**
- **Provide competitive product matrix (speeds & feeds) on comparable inkjet and laser-based color printer models.**

InfoTrends Assumptions

- **Total Printing Costs will include several monthly page volumes determined by InfoTrends' Market Research data**

| Location Size (Number of Employees) | Average Page Volume (weekly) | Percentage of Page Coverage Color & B&W* | Length of Ownership |
|-------------------------------------|------------------------------|--|-------------------------|
| 5 to 19 (small business) | 288 pages | Color pages 55% B&W pages 45% | 1 year, 2 year & 3 year |

InfoTrends Assumptions

- InfoTrends utilized a **Primary Market Research Study** entitled - ***Office Color: Accelerating Demand & Maximizing Profits***
- **Survey results represented a total of 1,062 office equipment users and decision makers, spread across U.S. and Western Europe; 413 respondents from North America (primarily the U.S.)* and 649 respondents from Europe.**
- **Respondents were split fairly evenly between small, medium-sized, and large companies, and all major vertical industries were represented.**

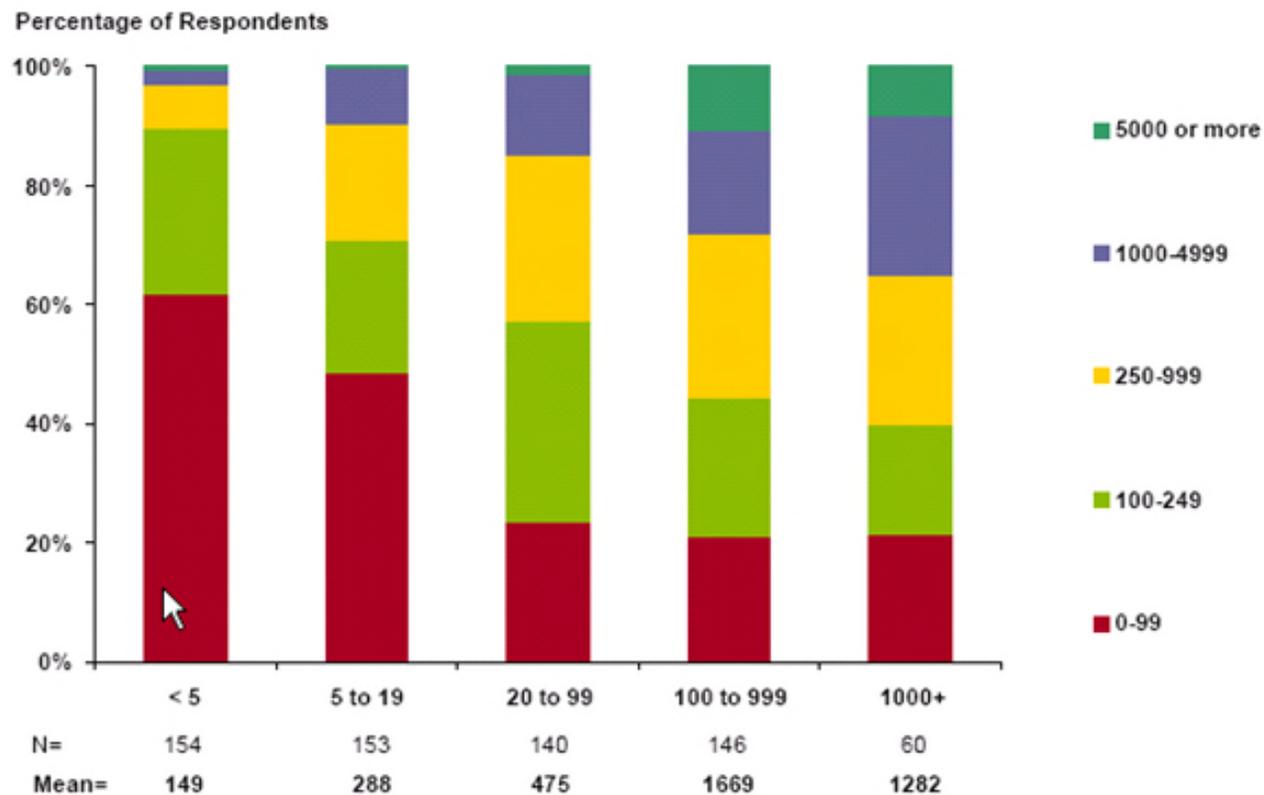
** Only the U.S. results were used for page volume assumptions*

InfoTrends Assumptions

- Market Research Data - Page Volumes for Small Business/Micro Business - Survey Results

Figure 42: Prints per Week on Inkjet Printer – Location Size

8. What is your best estimate of the average number of pages printed per week on your inkjet printer or multi-function device?



InfoTrends Assumptions

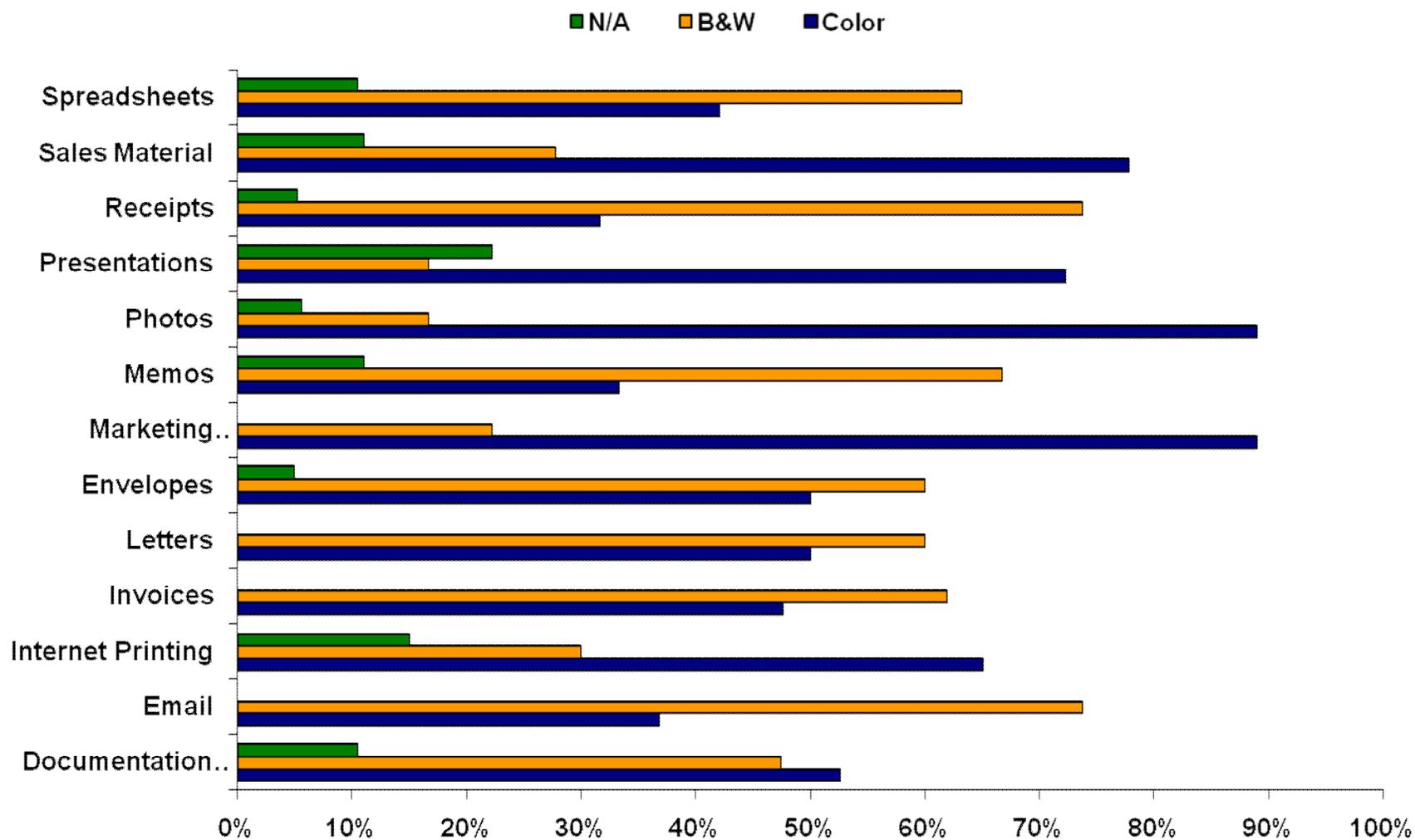
- **Page Coverage Assumptions**

- ▶ InfoTrends has provided total printing cost calculations based on 5% coverage per color, which is the industry standard for calculating page yields
- ▶ Color and Black and White page ratio assumptions based on InfoTrends study – *Buying Habits in the Retail Channel – 2007 Survey*
 - Color and B&W page coverage based on survey results for SF color inkjet and MF color inkjet printer survey results

Buying Habits in the Retail Channel Survey – Objectives & Methodology

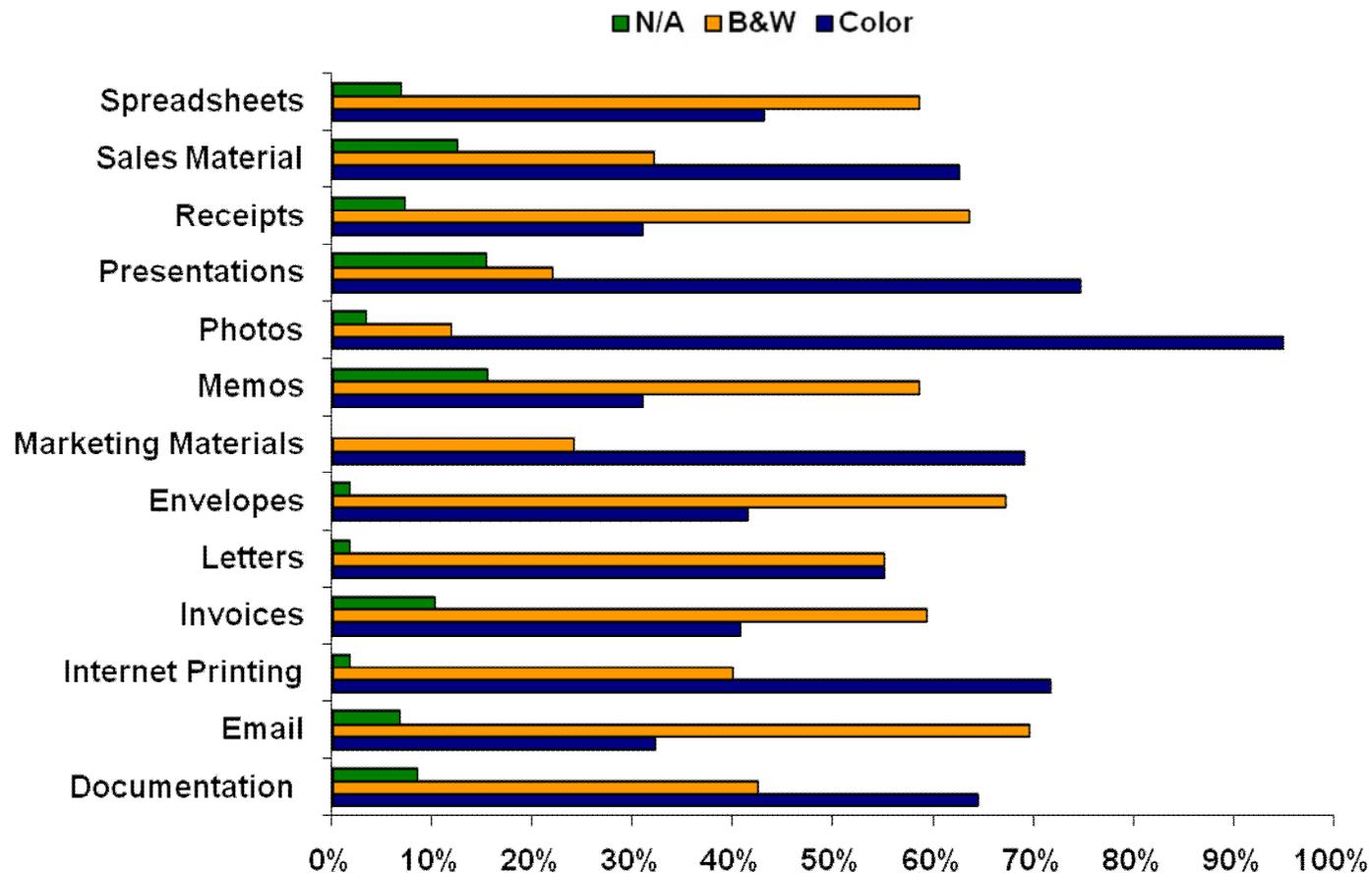
- **Understand the changing buying habits and future purchase plans within the Retail Channel for office equipment products**
- **Web-based surveys deployed across the United States**
- **Conducted in October & November 2007**
 - 298 total responses
- **Respondents represent a variety of vertical markets, income levels and ages.**

Main Application for Printing – SF Inkjet Printer



N= 80

Main Application for Printing – MF Color Inkjet Printer



N= 80

Product Comparison Matrix – SF Printers

| | HP | Samsung | Dell |
|--|---|---|---|
| |  |  |  |
| Specifications | HP Officejet Pro 8000 | CLP-315 | 1320C |
| Price – US \$* | \$149 | \$194 | \$249 |
| technology | 4 individual ink | 4-pass laser | in line laser |
| Color PPM | 11 | 4 | 12 |
| Mono PPM | 15 | 16 | 16 |
| Input capacity | 250 sheets | 150 sheets | 250 sheets |
| Duty Cycle | 15,000 | 20,000 | 35,000 |
| Ink/Toner capacity | 1400 CMY 2200 K | 1000 CMY / 1500 K | 2000 C,M,Y,K |
| | in the box: 900 CMY/1000 K | in the box: 700 CMY / 1000K | in the box: 1,000 C,M,Y,K |
| Cost per page US\$ K/CMYK* | \$.016/\$.072 | \$.038/\$.185 | \$.030/\$0.148 |
| Replacement parts (beyond print cartridges) | None | Drum 24K mono, 6K color; waste 10K mono, 2.5K color | None |

* Printer Acquisition cost and supplies pricing based on ASP's from NPD Group - Retail Scorecard and E-Commerce Scorecard

Product Comparison Matrix – MFP Models

| | HP | Samsung | Dell |
|--|---|---|---|
| |  |  |  |
| Specifications | HP Officejet Pro 8500 | CLX-3175FN | 2135dn |
| Price – US \$* | \$299 | \$393 | \$384 |
| technology | 4 individual ink | 4-pass laser | in-line laser |
| Color PPM | 11 | 4 | 12 |
| Mono PPM | 15 | 17 | 16 |
| Input capacity | 250 sheets | 150 sheets | 250 sheets |
| ADF capacity | 50 | 15 | 35 |
| Duty Cycle | 15000 | 20,000 | 40,000 |
| Ink/Toner capacity | 1400 CMY 2200 K | 1000 CMY / 1500 K | 2500 CMYK |
| | in the box: 900 CMY/1000 K | in the box: 700 CMY / 1000K | in the box: 1000 CMY, 2500 K |
| Cost per page US¢ K/CMYK* | \$.016/\$.072 | \$.038/\$.018.5 | \$.028/\$0.142 |
| Replacement parts (beyond print cartridges.) | None | Drum 24K mono, 6K color; waste 10K mono, 2.5K color | |

*Printer Acquisition cost and supplies pricing based on ASP's from NPD Group - Retail Scorecard and E-Commerce Scorecard

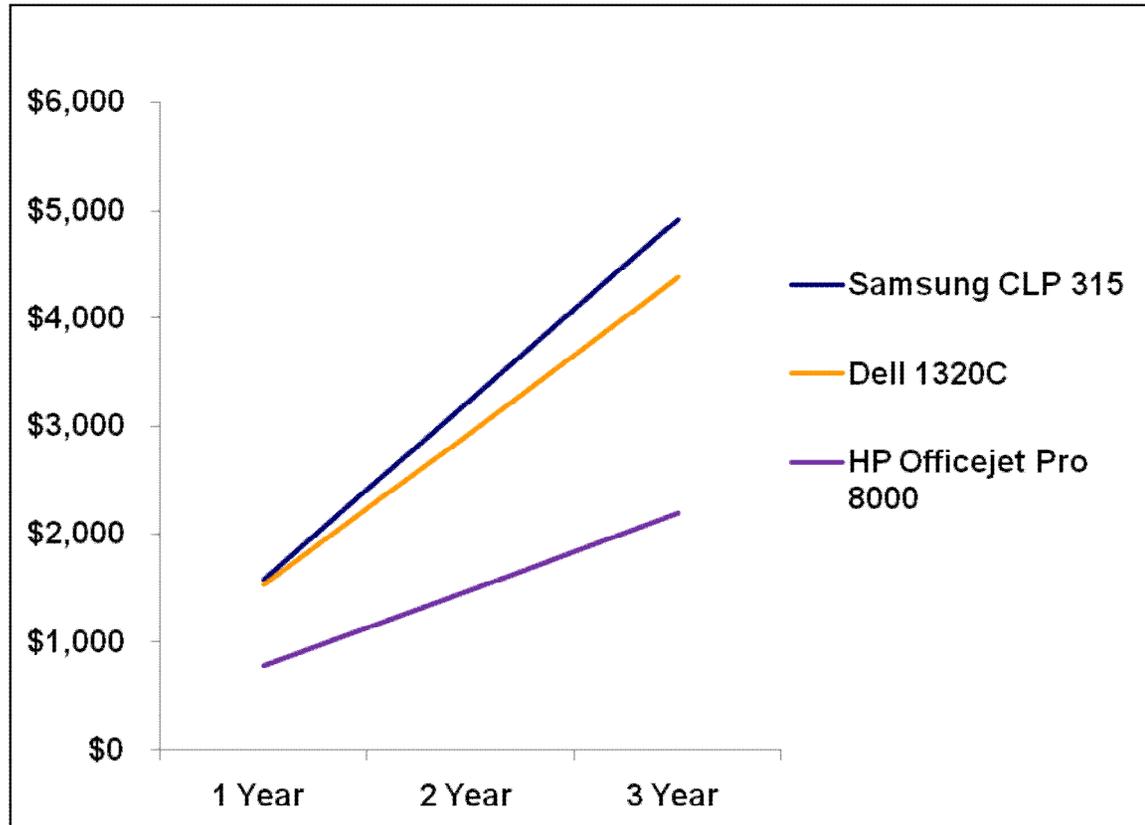
InfoTrends Methodology

- **Total Cost of Printing Includes**

- ▶ Hardware acquisition price
- ▶ Replacement supplies
 - ▶ Inkjet based devices: replacement ink cartridges
 - ▶ Toner-based devices: replacement toner and other consumables (i.e. imaging kits, belts, waste toner kits, etc.)
- ▶ InfoTrends calculated the running costs after in-box supplies were consumed based on page volume assumptions and usage periods
- ▶ Total cost of printing calculated using the following formula

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

Total Cost of Printing - SF Printers: Small Business 5-19 Employees (1-3 Year Comparison)

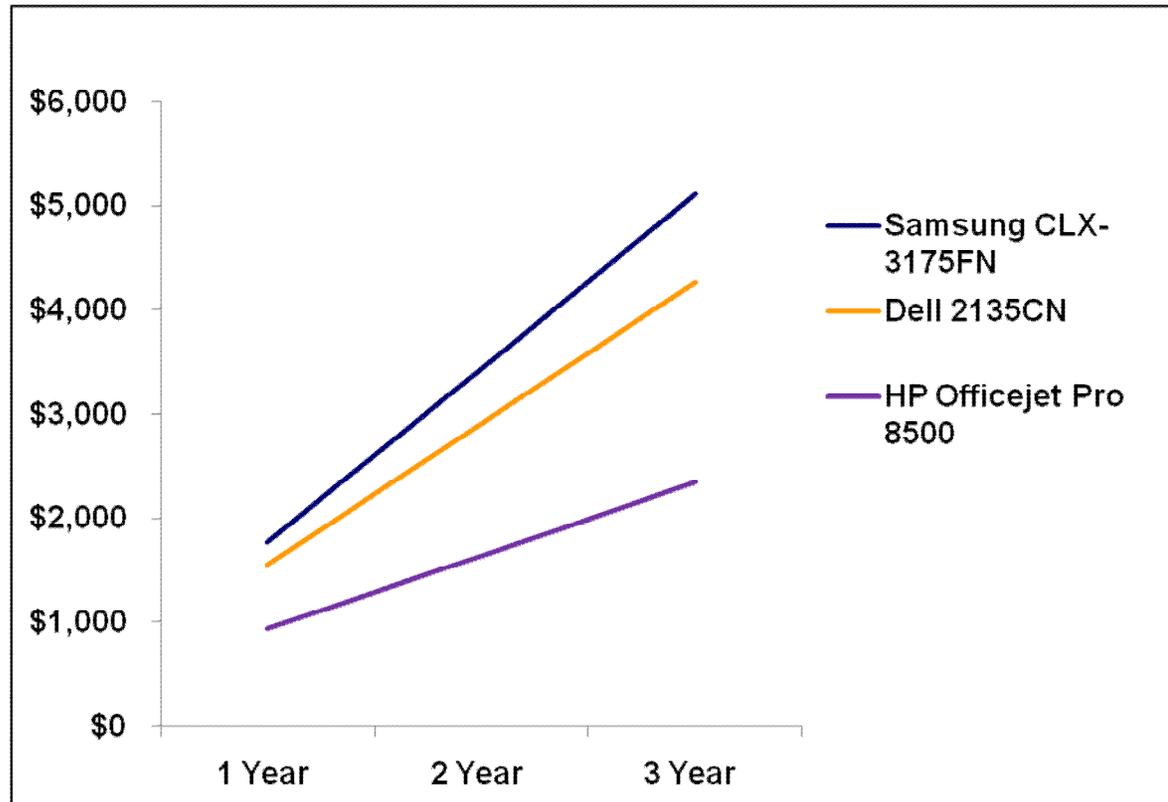


Small Business Comparisons

- Compared to the Samsung CLP 315, HP's Officejet Pro 8000 provides a total cost savings of 50% or \$795 in the first year alone
- Over 3 years, HP's Officejet Pro 8000 could save customers 55% in total printing costs, or \$2,726 compared with the Samsung CLP 315

| | 1 Year | 2 Year | 3 Year |
|-----------------------|---------|---------|---------|
| Samsung CLP 315 | \$1,581 | \$3,250 | \$4,920 |
| Dell 1320C | \$1,526 | \$2,951 | \$4,376 |
| HP Officejet Pro 8000 | \$786 | \$1,490 | \$2,194 |

Total Cost of Printing - MFPs: Small Business 5-19 Employees (1-3 Year Comparison)



Small Business Comparisons

- Compared to the Samsung CLX-3175FN, HP's Officejet Pro 8500 provides a total cost savings of 47% or \$844 in the first year alone
- Over 3 years, HP's Officejet Pro 8500 could save customers 54% in total printing costs, or \$2,775 compared with the Samsung CLX-3175FN

| | 1 Year | 2 Year | 3 Year |
|-----------------------|---------|---------|---------|
| Samsung CLX-3175FN | \$1,780 | \$3,449 | \$5,119 |
| Dell 2135CN | \$1,558 | \$2,916 | \$4,275 |
| HP Officejet Pro 8500 | \$936 | \$1,640 | \$2,344 |

Conclusions

- **Purpose of study: evaluate HP's claims of total printing costs for Officejet Pro 8000/8500 series relative to comparable laser products**
- **InfoTrends' findings confirm that customers can save as much as 50% on total printing costs—in some cases even more**
- **Page volume assumptions based on actual usage trends defined by InfoTrends market research for micro- and small-business customers**
- **InfoTrends believes that HP's Officejet Pro series products represent a strong alternative to laser for small businesses**
 - ▶ Affordability: lower acquisition prices and lower running costs
 - ▶ Fewer consumable supplies
 - ▶ Excellent print quality

