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Abstract

## Opportunities for Ink-Based Marking Technologies in the Office Imaging Market

### Report Fast Facts

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To place your order today, contact Michelle Boczanowski at 781.616.2100 or via e-mail [michelle\\_boczanowski@infotrends.com](mailto:michelle_boczanowski@infotrends.com)

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### Abstract

Several ink-based marking technologies have recently surfaced, and these technologies are causing quite a stir in the market. In fact, InfoTrends is predicting a much broader deployment of ink-based imaging products in the office environment, driven by increased customer acceptance for color and the need to reduce the costs of color printing. The potential for inkjet technology is based on some basic principles: ink costs less than toner; ink print heads have relatively few parts; and the quality that can be delivered is high. This white paper provides an overview and history of marking technologies and explains the potential benefits that ink-based systems could deliver to the office printing market.

**Headquarters:**  
97 Libbey Industrial Parkway  
Suite 300  
Weymouth, MA 02189  
United States  
+1 781 616 2100  
[info@infotrends.com](mailto:info@infotrends.com)

**Europe:**  
3<sup>rd</sup> Floor, Sceptre House  
7-9 Castle Street  
Luton, Bedfordshire  
United Kingdom, LU1 3AJ  
+44 1582 400120  
[euro.info@infotrends.com](mailto:euro.info@infotrends.com)

**Asia:**  
Hiroo Office Building  
1-3-18 Hiroo, Shibuya-ku  
Tokyo 150-0012  
Japan  
+81 3 5475 2663  
[info@infotrends.co.jp](mailto:info@infotrends.co.jp)

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## Introduction

Today is a very exciting time in the printing market. After years of only incremental changes to imaging technology, new and important developments promise to usher in a new phase in printing—particularly color printing in the office environment.

Several ink-based marking technologies have recently surfaced, and these technologies are causing quite a stir in the market. The reason for this is simple. Ink-based imaging offers a number of attributes that address an underlying need in office printing: affordable color. In fact, for quite some time InfoTrends has forecasted a much broader deployment of inkjet-based technology to address these unmet needs.

The potential for inkjet technology is based on some basic principles: ink costs less than toner; ink print heads have relatively few parts; and the quality that can be delivered is high. This white paper provides an overview and history of marking technologies and explains the potential benefits that ink-based systems could deliver to the market.

### **Key Highlights**

- Detailed description and comparison of inkjet imaging technologies including serial inkjet versus page-wide arrays, thermal inkjet, piezo inkjet, and solid inkjet marking technologies.
- Explanation of various emerging ink-based technologies, including HP Edgeline, Memjet, and Brother's line head technology.
- Overview of Xerox's continued innovation with solid ink technology.
- Criteria that end-users should consider when reviewing alternatives to laser marking technology.

### **What is Marking Technology?**

So, what is marking technology? Basically, every printer, copier, or multifunctional peripheral (MFP) uses a fundamental writing system, which serves as the process for putting marks on paper. Most writing systems fall into two specific categories: impact technology and non-impact technology.

Impact technology served as the primary writing system for many of the earliest computer printers: the old daisy wheel devices and serial dot matrix printers. These printers produced pages by using a forcible impact to transfer the ink to the media. Some of you may have fond memories of these early days, when pages were hammered out on printers that looked and sounded more like typewriters than digital printers.

That all changed, however, when Xerox developed the xerographic imaging process, which eventually led to the introduction of the first laser printer. With the laser printer, pages are produced using a non-impact writing system. Other non-impact marking technologies were soon developed, including inkjet, dye sublimation, and others. Non-impact printers offer many advantages over impact technology, including faster performance, better print quality, and a much quieter operation. For these reasons, non-impact printers dominate the market today, and most of these printers are based on a derivative of either inkjet or xerographic printing.

## ***Ink-Based Technology for the Office***

### ***Benefits and Advantages***

So, what are the inherent benefits of ink-based marking technology? To begin with, the writing system is relatively simple with only a few major components. Of course, ink is required as well as some sort of ejector or print head. In addition, the ink must be dried once it has been applied to the page. Most liquid inkjet systems use forced air dryers for this process, while Xerox's solid ink technology uses a cold fusing process to bond the ink to the media.

In addition, office customers are looking to integrate more color into their documents. They understand the value of color—particularly for those documents that touch their own customers. At the same time, however, most of today's office customers feel that color printing is too expensive. Considering current customer needs and the benefits of inkjet technology, it makes sense to consider an ink-based page printer for the office. An ink-based page printer could address many of the barriers that are prohibiting growth in office color pages today.

### ***Emerging Ink-Based Technologies***

InfoTrends believes that there are several significant technologies on the horizon that will change the office-printing landscape. HP's new Edgeline technology is based on a page-wide inkjet printing array that has been used in a high-end, departmental machine. Another company, called Memjet, has demonstrated a page-wide inkjet print head that can produce very fast print speeds with hardware costs that rival traditional consumer inkjet printers. Meanwhile, Xerox continues to advance its solid ink technology, and the firm has leveraged solid ink in products that offer very compelling price/performance values for office customers.

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