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Analysis

## Presstek DI® Printing Study: *Bridging the Gap Between Digital Toner and Conventional Offset*

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### Abstract

In the summer of 2008, Presstek commissioned InfoTrends to survey owners of DI digital offset printing presses. Respondents were asked a series of questions based on the equipment they operate, services they offer, and satisfaction levels they have obtained. The results of this survey are presented in this paper.

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## Introduction

In the summer of 2008, Presstek commissioned InfoTrends to survey owners of DI digital offset printing presses. Respondents were asked a series of questions based on the equipment they operate, services they offer, and satisfaction levels they have obtained. The results of this survey are shown in this paper.

The report occasionally refers to an earlier analysis written in 2005, based on a similar survey which, in many cases, asked identical questions. Though it is important to note that both technical and economic changes have taken place in the last three years, these comparisons offer a closer look at the changing direct-to-press market.

In the 2005 study, 100% of the respondents were users of OEM models of Presstek enabled DI presses; all of these presses were 34cm portrait presses. The 2008 study includes these OEM models and Presstek branded DI presses, which became available in 2006. Presstek branded DI presses are available in 34cm portrait and 52cm landscape models. At key times in this report, we will single out the results of Presstek branded DI presses. 59% of the users surveyed used a Presstek branded DI press.

The technology in Presstek's DI press incorporates the platemaking into the press. The DI images a digital file to chemistry-free printing plates that are automatically mounted directly on-press. All four plates are imaged simultaneously in precise register. This process eliminates the production steps associated with film-based platemaking or the need to separately image plates using an offline computer-to-plate (CTP) process. A DI press is designed to enable a printer to meet demands for fast-turnaround, high-quality color printing at lower costs, while improving productivity and quality. DI is an enabling process brought about by the interaction of three of Presstek's core competencies, namely laser imaging, thermal digital media, and a unique press design.

For the remainder of this document, we will refer to a direct-to-press device as a DI press.

Respondents were asked to identify the key trends that motivated the acquisition of their device. These motivations included:

- Expanding into new customer markets
- Improving productivity
- Complementing their existing offset and toner-based printing services
- Improving print quality
- Addressing customer needs for shorter run lengths
- Addressing customer desires for fast turnaround times
- Addressing customer requirements for lower per-page costs

Our survey found that there was a strong correlation between the acquisition of a DI press with growth and profitability. It also indicated that print volume is continuing to increase on these devices, which suggests that these print providers are building their businesses around their DI presses.

Key findings from this study were as follows:

- Makeready on a DI press takes less time than on a conventional offset press. On average, 34cm DI presses achieve makeready 23% faster than conventional offset. While time savings on 52cm presses achieve even faster makeready with savings of 38% that of conventional offset.
- The “sweet spot” for DI printing is in the range of 500 and 20,000 finished press sheets, making DI printing services as the ideal solution to profitably fill the gap between toner-based and conventional offset.
- Respondents indicated that DI printing services allowed them to increase their business, with 80% bringing in new customers or winning customers from competition based on the abilities DI services have added.
- DI printing revenue is expected to reach 44% of total printing revenue over the next two years.

## Methodology

This survey was conducted during the summer of 2008 among key decision-makers within companies that operate DI presses. Qualified respondents were asked to complete a brief online survey. The results of the survey were compiled and tabulated. This paper discusses these findings.

## Findings and Analysis

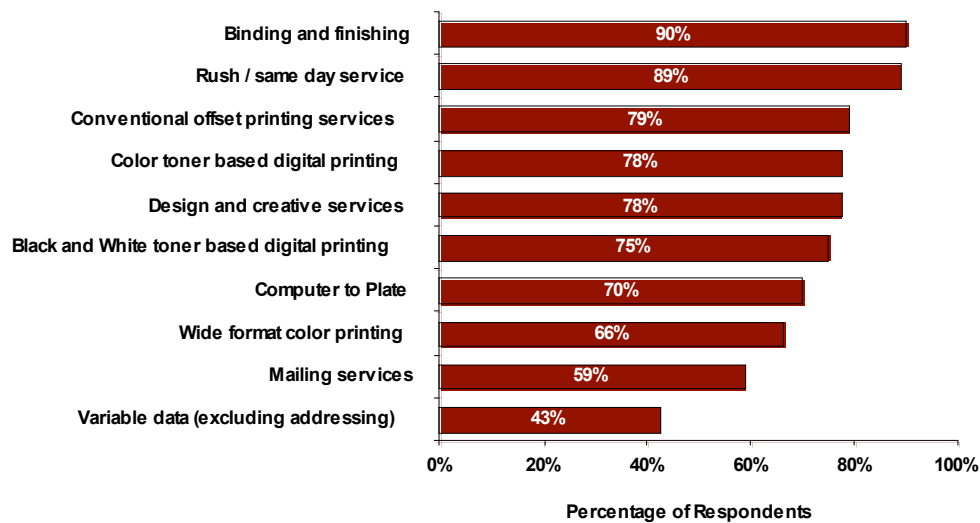
### Profile

There were 80 print providers with DI presses that responded to our survey. Profile summary:

- 89% of the companies reported revenues of less than \$3 million, and the mean annual revenue among all respondents was \$2 million.
- 69% of Presstek 52DI users had revenues of more than \$2 million, with 23% recording revenues of more than \$5 million.
- The average number of employees was 15, with 86% of respondents working for companies with less than 20 employees.
- Shops with a Presstek 52DI had an average of 29 employees.
- 67% of the respondents identified themselves as commercial printers, and another 8% indicated that they were digital print specialists.

76% of the respondents operate in the United States, 13% from Canada, and 11% were from Europe. In addition to DI printing, the majority of the print providers offered a range of services from conventional offset and toner-based printing to creative services, prepress, computer-to-plate, binding and finishing, and wide format color printing. Many of these services were seen as complementary to the DI press.

**Figure 1: Services Offered**

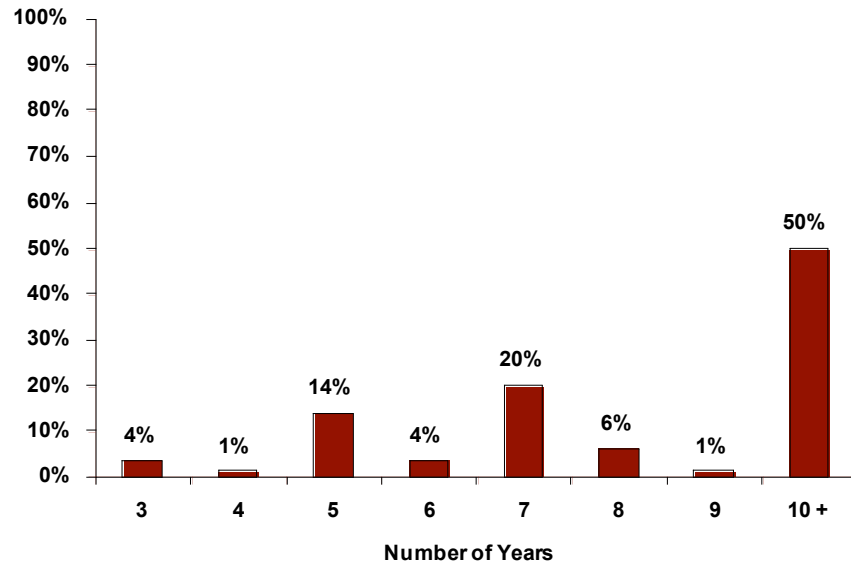


N = 80

### Operation of DI Presses

On average, the DI presses are used 5.1 days a week for a mean of 1.1 shifts per day. Respondents indicated that they plan to operate their DI press for a mean of 8.6 years. The distribution for Figure 2 shows that 77% of respondents indicated they plan to operate their DI press for 7 or more years, while 50% indicated that they plan to operate it for more than 10 years.

**Figure 2: Number of Planned Operating Years for DI Press**

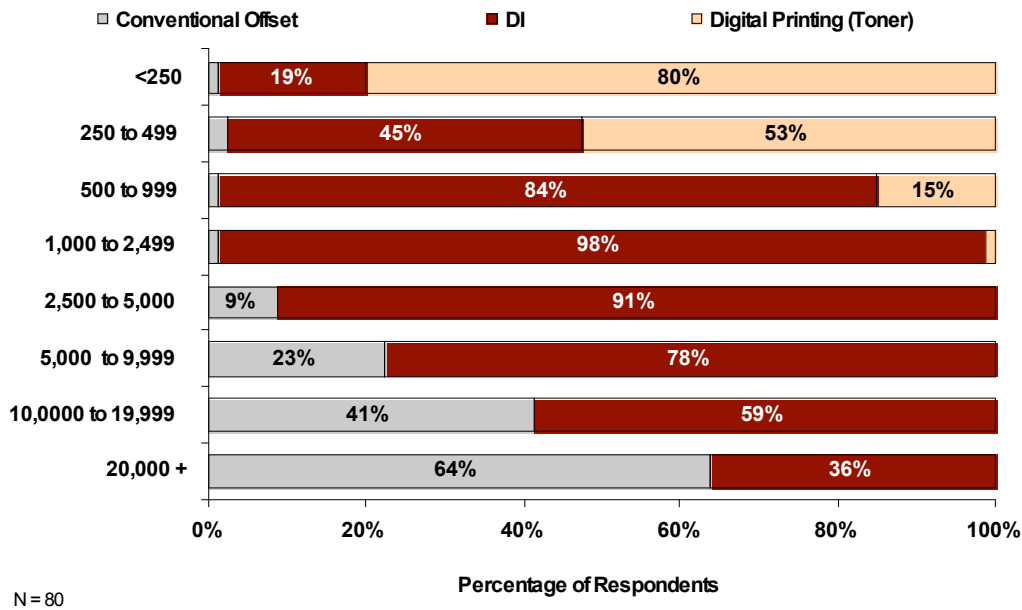


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## Run Length

The majority of these sites surveyed stated that they operate both a conventional offset press and a toner-based production color printer, in addition to their DI press. We asked these sites about trends in run lengths and which runs they thought were most suitable for each technology. Our definition of a run length for these questions was based on a finished press sheet (4/0).

**Figure 3: Technology Choice Based on Run Length**



Respondents were asked to indicate the technology that they considered most suitable for each range of run lengths:

- Toner-based devices were seen as the most suitable for run lengths of less than 250.
- Run lengths between 250 and 499 were fairly evenly mixed between toner and DI printing.
- DI presses are most suitable for run lengths between 500 and 20,000 press sheets.
- Conventional offset was seen as most suitable for run lengths of 20,000 or greater.

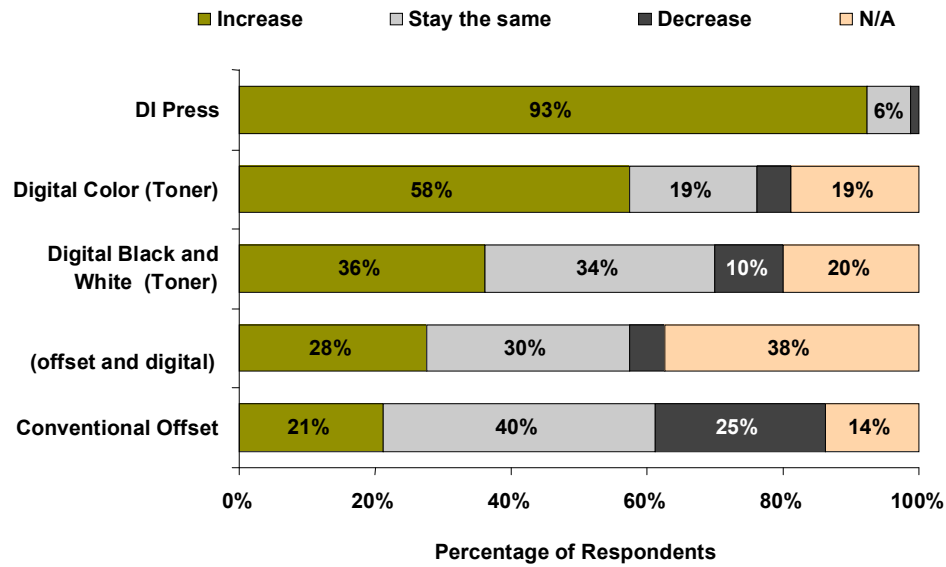
Based on run length trends and what respondents viewed as the most suitable technologies, the sweet spot for DI printing is between 500 and 20,000.

Market studies indicate that the numbers of jobs with run lengths of 20,000 impressions and below are increasing, while the frequency of longer run length jobs are decreasing. DI presses fit well in environments that are experiencing this trend. These environments, which include commercial print shops, digital print, and quick print/franchise shops, utilize DI presses to handle increases in run lengths. Research shows that DI press capabilities allow these environments to print jobs cost effectively from 250 impressions up to and exceeding 20,000 sheets on a wide range of stocks.

### Print Volume Growth Trends

Respondents were asked to indicate whether they saw a change in their print volumes for toner-based digital color printing, monochrome digital printing, conventional offset, or DI printing. When analyzing Figure 4, it is important to note that all respondents operate a DI press, but only 65% operate a conventional offset press and 83% operate toner-based digital color printers. The results indicate that DI printing and toner-based printing are increasing, while conventional offset volumes are declining. DI sites are utilizing their DI press as a tool to maintain and grow their print business, enabling these print service providers to adapt to the changing print market, offering shorter run lengths and faster turnaround times.

**Figure 4: Print Volume Growth Trends by Technology**

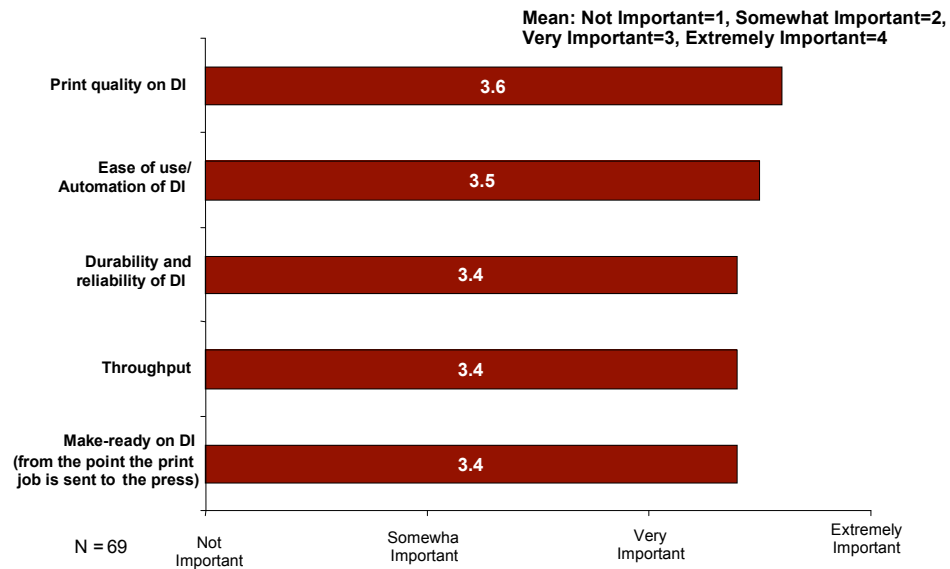


N = 80

### Differentiating Characteristics of DI Presses

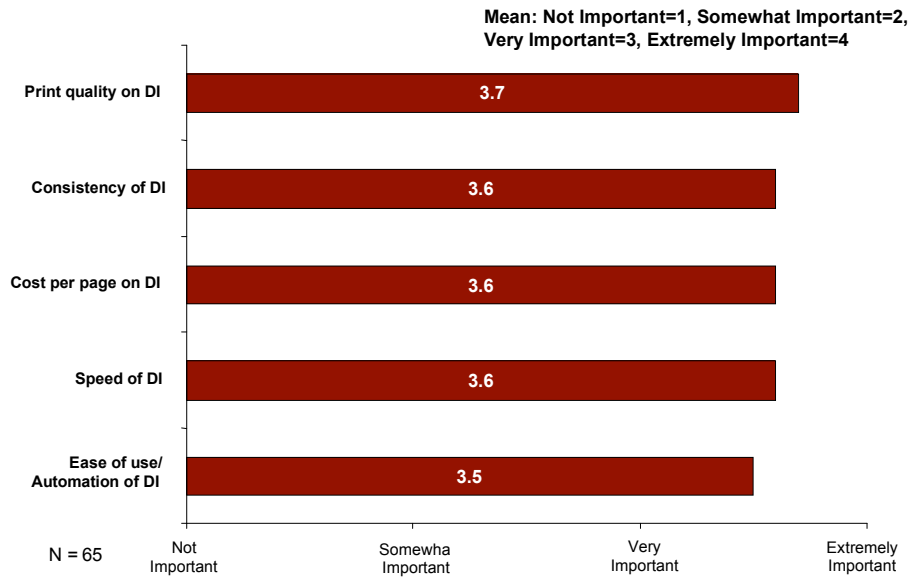
- Respondents were provided with the following list of qualities and asked how they differentiate the characteristics of their DI press from digital toner-based color printers and/or conventional offset presses.
  - Print Quality
  - Consistency
  - Cost per page
  - Speed
  - Ease-of-use
  - Durability and reliability
  - Substrate range
  - Throughput
  - Makeready time
  - Sheet Size
  - Environmental friendliness

**Figure 5: Mean Importance of Characteristics of a DI Press Compared Conventional Offset Press**



Although respondents found all of these characteristics important, when asked to compare the top five differentiating characteristics of a DI press to a conventional offset press, print quality ranked on top. It is no surprise that DI users look for improvements in ease-of-use and automation, a characteristic that they have ranked a near second, as DI press technology aims to offer higher levels of automation. A three-way tie of durability and reliability, throughput, and makeready times follows close behind.

**Figure 6: Mean Importance of Characteristics of a DI Press Compared Digital Color Toner**



When the same question was asked in relation to digital color toner devices, respondents again ranked print quality at the top of the list. DI users looked for improved consistency, cost per page, and device speed as other important characteristics, all of which we found the DI press able to leverage. DI owners are again looking to have more automation and ease-of-use, as they were in the comparison with the conventional offset press.

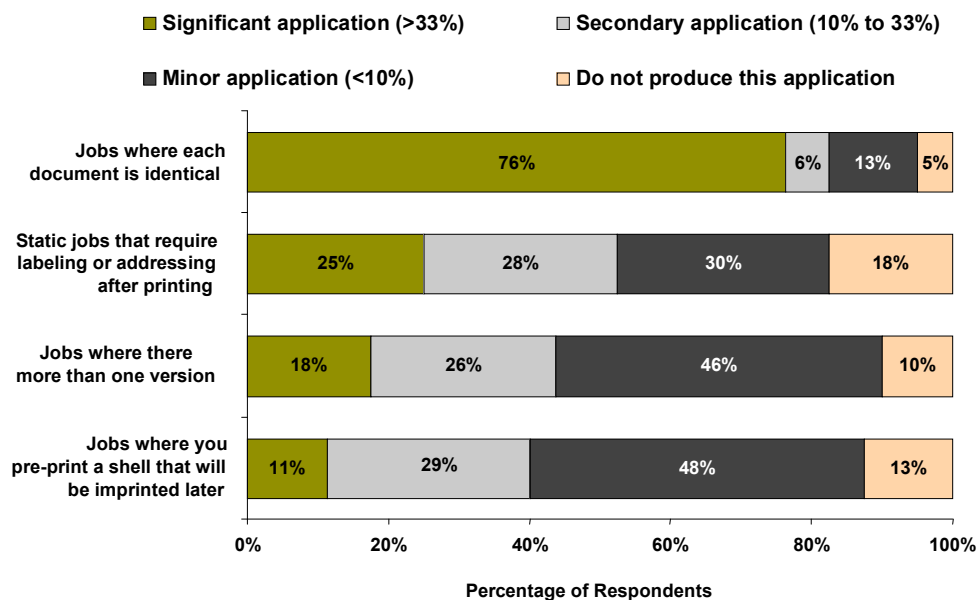
Though it is no surprise, these rankings serve as a reassurance that DI presses are achieving their objectives by offering more automation than conventional offset presses while maintaining the quality and consistency we have come to expect from offset printing. They also offer superior quality, lower operating costs, and faster operating speeds than digital color toner devices.

### Mix of Applications

It is interesting to note that 44% of the responding companies do produce variable data jobs. For DI printing work, we asked our respondents to specify the percentage of jobs by several categories of increasing variability. We questioned whether a job was a significant application (1/3 or more of total print volume), a secondary application (10% to 33% of total volume), or a minor application (under 10% of total volume). About 77% of respondents indicated that jobs where each document is identical represented a significant application for them. Another 18% of respondents indicated that versioning was a significant application with an additional 26% stating that it was a secondary application. Close to 25% of respondents indicated that static jobs requiring labeling or addressing after printing were significant applications, while 28% considered them to be secondary applications. Finally, 11% of respondents said that jobs where a shell was pre-printed with plans to imprint them later were a significant application, while 29% indicated that they were a secondary application. About 48% indicated that this was a minor application. About 48% indicated that this was a minor application.

In response to another question, respondents indicated that the largest areas of growth by category were versioned jobs, followed by jobs where each piece is identical, as well as jobs that require addressing and/or labeling. This anticipated growth of versioned jobs again points to the growth in short run color that is well-suited for DI presses.

**Figure 7: Mix of Jobs by Category**

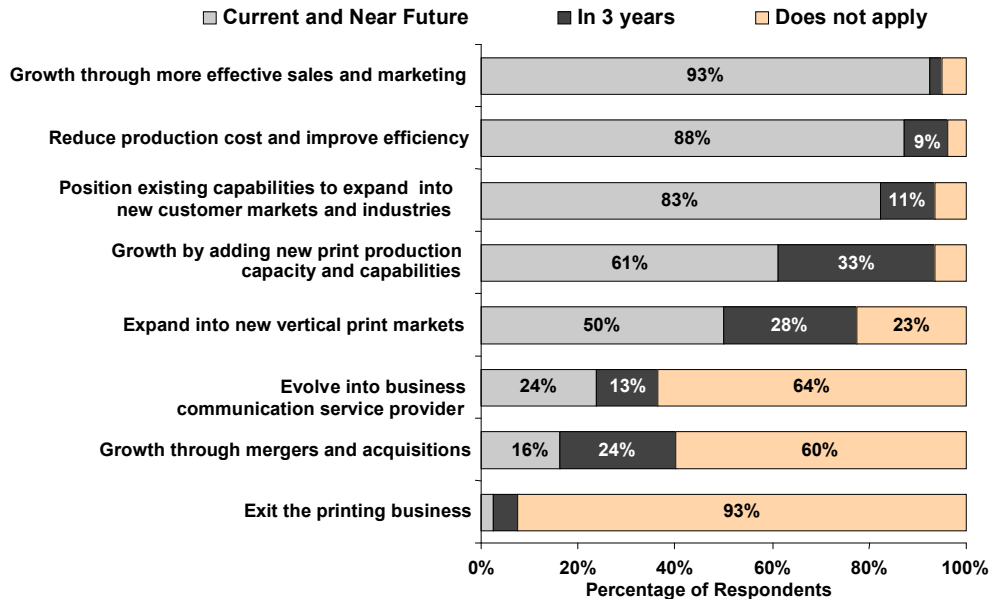


N = 80

### Motivation

We were also curious what business strategies drove each company to acquire a DI press. We often ask print providers about their current and future strategic directions. Almost 93% of respondents indicated that their current strategy includes growing through more effective sales and marketing. Another 88% of respondents indicated that their current strategy is to reduce production costs and improve efficiency, and 83% indicated that they are positioning their existing capabilities to expand into new customer markets and industries. Another 61% indicated that they are growing by adding new print production capacity and capabilities. Another 61% indicated that they are growing by adding new print production capacity and capabilities. Another 61% indicated that they are growing by adding new print production capacity and capabilities.

**Figure 8: Current and Future Strategic Plans**



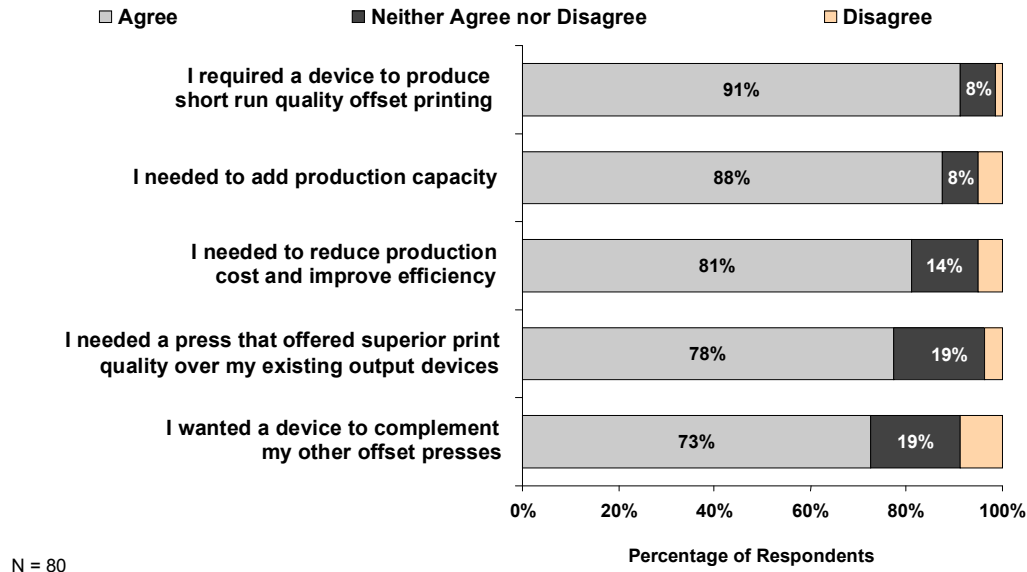
N = 80

Survey participants were also asked to indicate their motivations for acquiring their DI presses. The top reasons for acquiring a DI were:

- 91% said the need for a device that would produce high quality, short run offset.
- 88% stated a need for additional production capacity.
- 81% of our respondents agreed that they needed to reduce production costs and improve efficiency (49% strongly agreed with the statement).
- 73% specified that they wanted a device that would complement their offset printing equipment (44% strongly agreed with this statement).
- 60% of respondents indicated wanting a device to complement their toner-based digital printing.

These key data points again indicate that a DI press is often seen as a complementary solution, rather than a total replacement to toner and/or conventional offset printing methods.

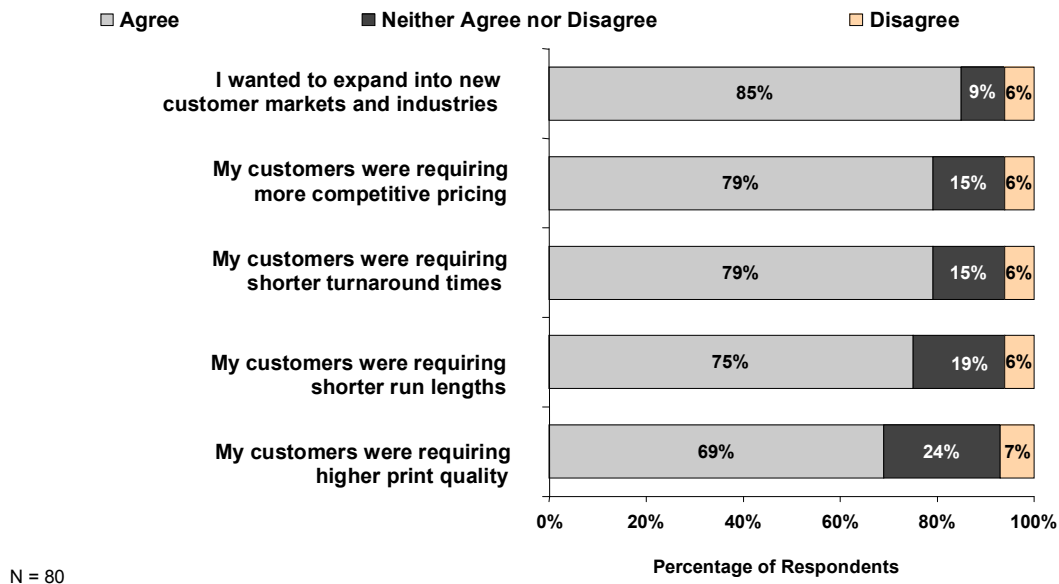
**Figure 9: Motivations for Acquiring DI Press**



Further probing illustrates that certain business drivers were key in respondents' decisions to acquire a DI press.

- 85% of respondents agreed that they wanted to expand into new customer markets and industries (54% strongly agreed with this statement).
- 79% indicated that their customers were requiring more competitive print prices (55% said that they strongly agree).
- In addition, shorter turnaround times, shorter run lengths, and higher print quality were all key drivers.

**Figure 10: Key Business Drivers for Acquiring DI Press**

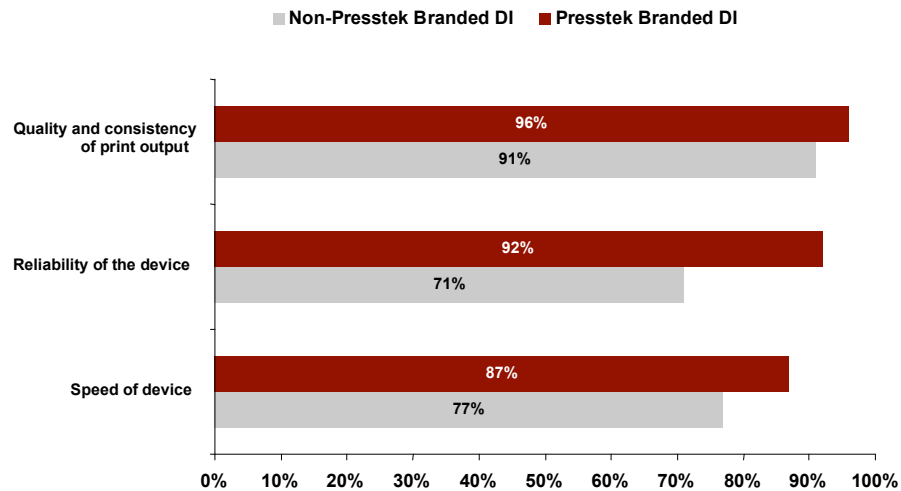


**Satisfaction**

88% of respondents indicated an overall satisfaction with their DI presses. In regards to profitability, 88% of respondents indicated that they have received good value from their DI press investment.

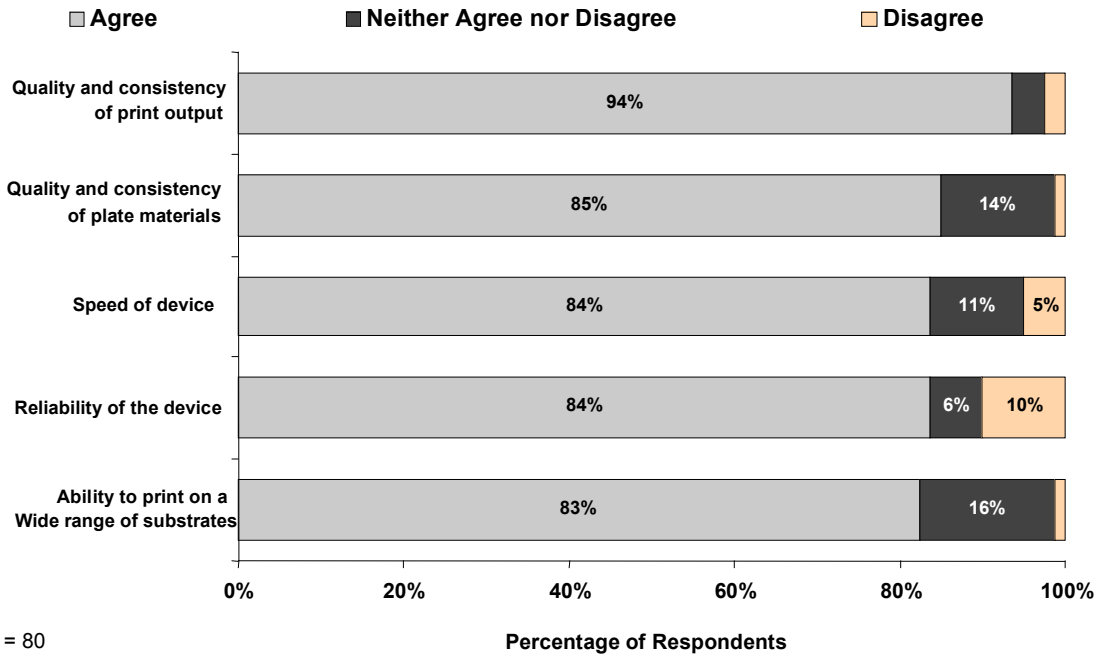
When comparing DI to digital toner, typical differentiators include speed, reliability, quality, and consistency. The following chart examines these differentiators, comparing the satisfaction rating of Presstek branded DI presses to those branded by other vendors. Overall, DI press owners appear highly satisfied. Respondents owning a Presstek branded device recorded superior satisfaction rates in each of these categories.

**Figure 11: Presstek Branded DI vs. OEM Branded DI**



Respondents ranked the top five features offered by DI printing. Quality and consistency of print output was the most important feature, with a 94% satisfaction rating. Nearly as important as the print quality, 85% of users believed that the consistency of the plate materials was a top feature. Overall, respondents are satisfied with the speed of these devices, followed by reliability (84%), and range of substrates available (83%).

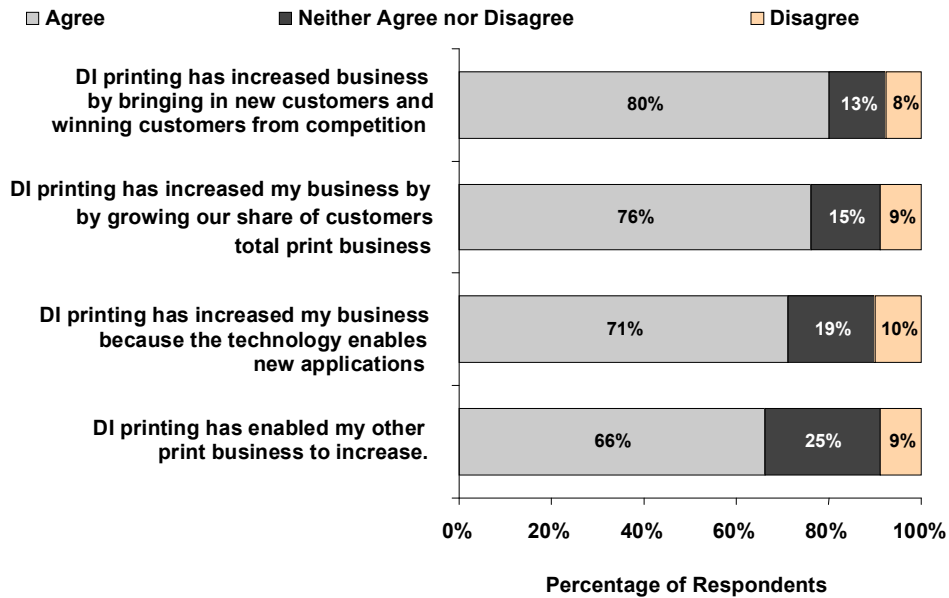
Figure 12: Top Five Features of Current DI Press



**Impact of DI Printing**

- 80% of respondents agreed that DI printing has enabled them to increase their business by bringing in new customers or winning customers from their competition.
- 76% agreed that their DI press has enabled them to increase their business by growing their share of customers’ total business.
- 71% indicated that they can now produce applications that they were not able to produce before.
- Finally, 66% indicated that offering DI printing services have enabled their other printing businesses (i.e., design and bindery) to increase.

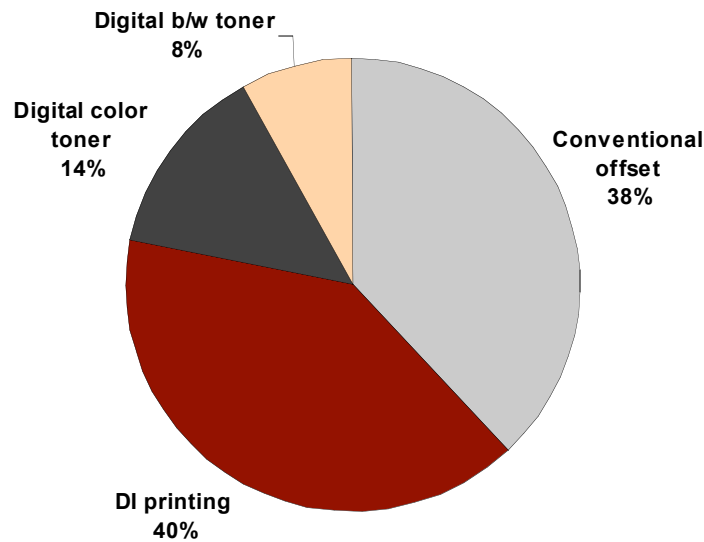
**Figure 13: Impact of DI Press on Business**



### Revenue and Profit Margins

When asked to segment revenue by device, DI printing proved the highest revenue (40%). Conventional offset followed a close second at 38%, with digital color (14%) and digital black & white following (8%).

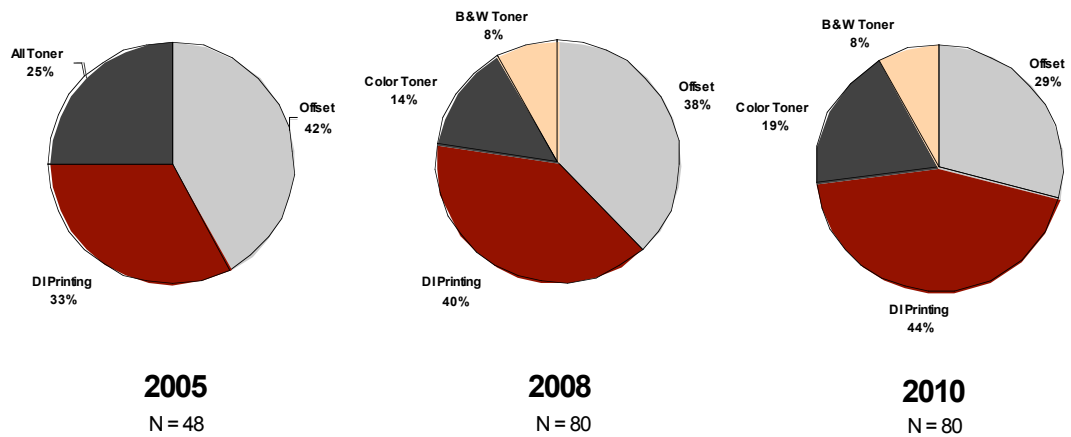
**Figure 14: Percentage of Print Revenue by Technology**



N = 80

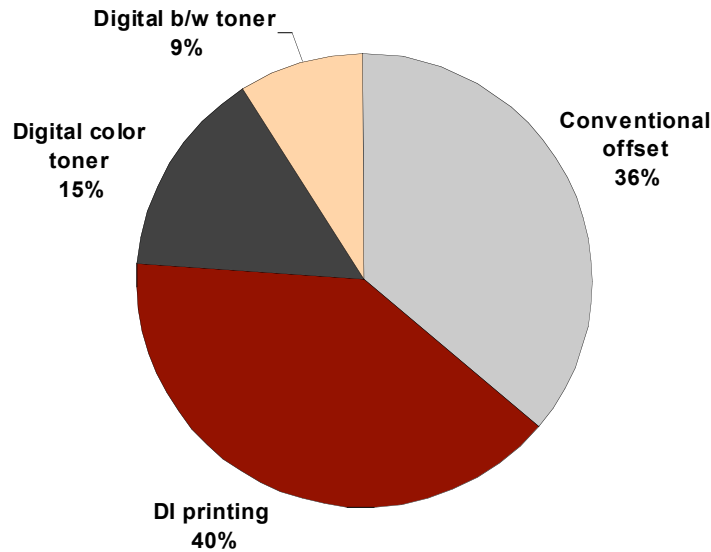
The DI printing revenue percentage is expected to increase by 10% to reach 44% in the next two years, offering a strong indication that these service providers are looking to their DI presses for future business growth. When this question was asked in 2005, DI printing made up only 33%, showing a 31% growth in five years.

**Figure 15: Percentage of Print Revenue by Technology- Past – Present – Future**



Respondents were then asked to segment profit by device. Similar to revenue, DI printing proved the highest revenue, 40%. Conventional offset dropped 2% down to 36% of total profit. While toner based devices gain 2%, with digital color at 15% and digital black & white at 9%.

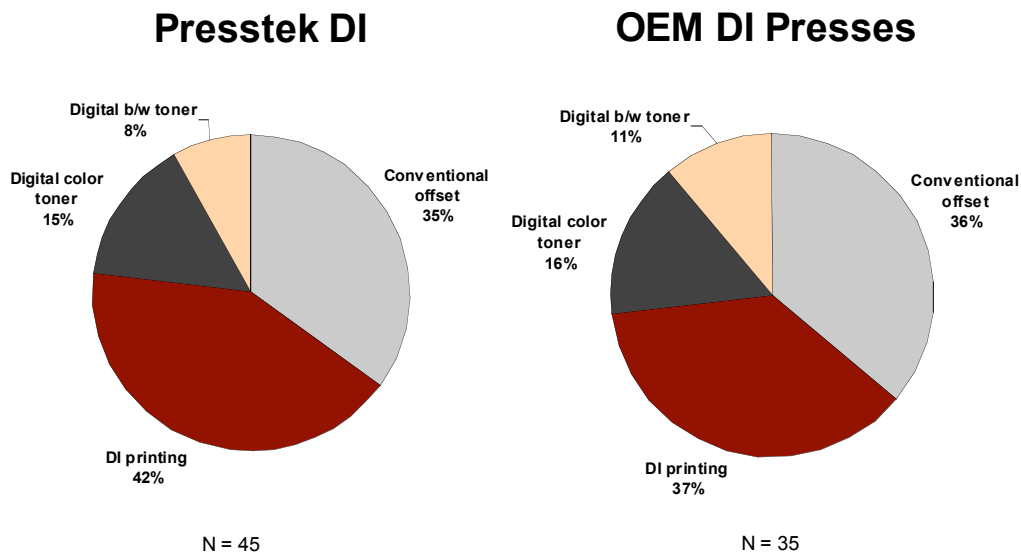
**Figure 16: Percentage of Print Profit by Technology**



N = 80

To further understand the profit margins of Presstek branded DI presses, as compared to OEM branded DI's, InfoTrends split these responses. Respondents indicated the Presstek branded DI presses achieve 42% of the profit made by printing technologies within their business, indicating that Presstek branded DI presses are more profitable than any other print technology owned, including DI presses branded by other vendors.

**Figure 17: Percentage of Print Profit by Technology**



## Conclusion

DI press owners are increasingly finding new print opportunities. DI presses are expanding print provider's abilities, allowing them to produce new applications, expand into new vertical markets, and win business away from competition. Overall, users are very satisfied with the quality, speed, and ease-of-use offered by these devices. Their DI print revenue is growing and profit margins are increasing. It is clear that print providers are building their businesses around their DI presses.

Most of our survey participants were in the printing industry before they acquired a DI press. Most of the respondents consider their conventional offset and toner-based printing capabilities to be complementary to DI presses. These are key points, indicating that print providers are seeking a range of flexible solutions that meet the increasingly complex requirements of their customers. These print providers indicated that Presstek DI presses are well-positioned between toner and conventional technologies, satisfying customer requirements in the 500 to 20,000 run length range with increased print quality, faster turnaround time, a wider range of substrates, and a lower price per page.

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