

# Service Provider Market Pricing Study, 2<sup>nd</sup> Edition

**A Madison Advisors Report**  
**August 2008**

## **SECOND EDITION**

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## EXECUTIVE SUMMARY

In business, one of the keys to remaining competitive is understanding your competition. In addition, you need to know your competitive standing, as well as where the market is headed overall. To better understand the service provider market's direction, Madison Advisors conducted two Service Provider Market Pricing Studies for print and mail providers in North America that present our extensive research and analysis related to competitive pricing of the industry's leading organizations. This is the second of the two studies. The first was published in 2007.

Several significant factors are affecting the current direction of the market, including:

- **Industry Consolidation:** Consolidation is creating a small group of top-tier providers, but the number of providers in regional and local markets remains robust.
- **Outsourcing and Consulting Services:** With the exception of banking – the one vertical in which there is a clear trend for small- to mid-tier banks to outsource – most vertical markets swing between outsourcing print and building print production over the course of several years.
- **Customer Portals:** As many of the customer portals are new, service providers struggle with pricing for the services offered through portals. Madison Advisors expects pricing for these services to migrate to a per-item or per-access fee as portals become widely adopted by clients.
- **Digital Color Print Production:** The adoption of digital color by clients has finally reached the level suggested in 2003. Service providers base the price of digital color printing primarily on the device. Average per-page prices for toner-based devices are four times higher than prices for inkjet-based devices.
- **Certification:** Clients operating in regulated industries insist on partner certification to protect themselves from liability. Madison Advisors expects clients to become more involved in the certification process and challenge service bureaus to undergo more rigorous certifications.

Market pricing information begins on page 17 and provider overviews begin on page 34.

## REPORT OVERVIEW

This report presents the results of the Service Provider Market Pricing Study, and Madison Advisors' key findings based on this study. It includes the following sections:

- **Section I – Industry Overview:** provides Madison Advisors' definition of a print service bureau and our segmentation of the market based on monthly page production volume.
- **Section II – Market Trends:** provides Madison Advisors' analysis of the latest developments in the print and mail outsourcing market including discussions around continued industry consolidation, outsourcing and managed services, portals, digital color print production, and certification.
- **Section III – Market Pricing:** provides descriptions of the applications and pricing in this study, with detail on vertical/application market focus and core competency for each service provider in the study. Specifically, we present marketing pricing in five key areas:
  - Design Services
  - Digital Print
  - Insertion
  - Postal Services
  - Electronic Presentment Services
- **Section IV – Provider Overviews:** provides brief reviews of each service provider in the study including service offerings and capabilities. The following organizations are presented in the study:
 

□ Broadridge	□ Personix	□ RR Donnelley
□ CSG Systems	□ Pitney Bowes	□ Symcor
□ First Data	□ Management Services	□ TSYS
- **Appendix – About Madison Advisors:** provides background information on Madison Advisors.

## SECTION I – INDUSTRY OVERVIEW

In this section, Madison Advisors presents our definition of the service provider market as well as our segmentation of the market.

### MADISON ADVISORS' SERVICE PROVIDER DEFINITION

For this study, Madison Advisors surveyed major service providers in the high-volume, transactional print and mail market. At the most fundamental level, these service providers produce and distribute documents for corporate clients. Typically, service providers receive electronic files from clients, which they print and insert into envelopes. Most service providers also submit documents to the post office or a presort operation for co-mingling with other clients' mail to reduce postage costs.

The transactional market consists of large-volume batch documents, including statements and invoices, which are typically produced on a daily, weekly, or monthly production cycle. Transactional documents contain personal financial or medical data that requires secure handling and accurate delivery.

In addition to traditional print and mail services, many of the major service providers offer additional data and document processing services. Service providers may also offer document archiving and electronic presentment of the printed documents to complete the document lifecycle.

The following table provides production statistics for the participating service bureaus.

PRODUCTION STATISTICS	LOW (MILLIONS)	AVERAGE (MILLIONS)	HIGH (MILLIONS)
Images Printed Annually	350	1,476	4,500
Envelopes Mailed Annually	145	526	1,800
Images Electronically Presented Annually	50	292	430

**Table 1 – Service Provider Annual Production Statistics**

## MADISON ADVISORS' MARKET SEGMENTATION

For this study, Madison Advisors bases its market segmentation on print production capacity and distribution of production facilities. Print capacity determines a service provider's ability to support high volumes of transactional print production within a narrow timeframe. Federal and state regulations require many of the financial services applications, which are the largest source of transactional print volume, to be produced and mailed within five business days of month-end. Service providers schedule production equipment to meet the cyclical production peaks imposed by these regulations.

Distributed production operations enable service providers to route production across multiple sites. Service providers may reduce mail delivery times by producing jobs at the facility that is nearest to the mail-piece recipient. Service providers also use distributed sites for redundancy and disaster-recovery purposes.

Madison Advisors organizes the service provider market into three segments: national, regional, and local. There are only a few large national service providers with both a depth of production capacity and breadth of facility distribution. These organizations target large financial services companies and billers within the telecommunications, utilities, and healthcare markets. Regional service providers have a large equipment base for production, but usually focus on one or two vertical markets and offer specialized applications, such as plastic card production or lockbox operations. Local service providers generally have the capacity and expertise to support local, smaller billers across a range of vertical markets.

The table below identifies Madison Advisors' print production and distribution metrics for determining the service provider tiers. As indicated below, the top tier contains very few service providers and the lowest tier contains many providers.

SERVICE PROVIDER TIER	PRODUCTION SITE DISTRIBUTION	MONTHLY PAGE PRODUCTION VOLUME	NUMBER OF PROVIDERS
National	Production sites in two or more geographic regions	More than 100 million	10
Regional	Production sites in one geographic region	25-100 million	50
Local	Production sites in one geographic region	Fewer than 25 million	2,500

Table 2 – Service Provider Tiers

## SECTION II – MARKET TRENDS

While conducting this study, Madison Advisors uncovered several critical trends evolving in the print and mail industry. They include:

- Continued Industry Consolidation
- Outsourcing and Managed Services
- Customer Portals
- Digital Color Print Production
- Personalization Services

### CONTINUED INDUSTRY CONSOLIDATION

The number of transactional service providers continues to shrink as the number of electronic transactions and document presentment grows steadily. The shrinking market drives mergers and acquisitions within the service provider market, leaving organizations with fewer print provider choices.

Many service bureaus acquire other operations in order to extend the geographic scope or breadth of capability, enabling a single service provider to deliver a wider range of services to a larger audience. For example, CSG System's 2007 acquisition of ComTec provides CSG with additional statement processing and electronic presentment capabilities, and enables easier access to additional vertical industries, including home security.

Industry consolidation also crosses into non-print business markets as service bureaus develop and expand electronic offerings. Personix's parent company, Fiserv, acquired CheckFree in mid-2007 providing the organization with an expanded electronic presentment and payment capability.

New digital printing technologies have had a significant impact on the commercial printing market as well. Commercial printers in North America, including Quebecor World, which is one of the largest printers in North America, face financial difficulties as the cost of digital print closes in on the cost of offset print. In addition, buyers demand faster turnaround times and shorter print runs, which commercial printers achieve best through digital printing.

As a result, commercial printers expand into the digital print arena with investments in digital monochrome and color printing systems. For example, Vertis Communications utilizes digital color laser presses and document composition software to produce highly personalized color marketing materials. Commercial printers also encounter competition from in-house print production operations that take advantage of digital technologies.



The overall number of print service bureaus shrank slightly (1%) in 2007, based on data from the U.S. Department of Labor. Consolidation and business closings led to the overall decline. Service bureaus reported generally flat or single-digit growth in revenues for 2007.

## OUTSOURCING AND MANAGED SERVICES

Overall, transactional printing growth is flat. Specifically, monochrome print volumes declined slightly although color volumes increased within the past year. Outsourcing percentages vary based on vertical and organization size. The table below shows the percentage of organizations within each vertical market that outsource print production.

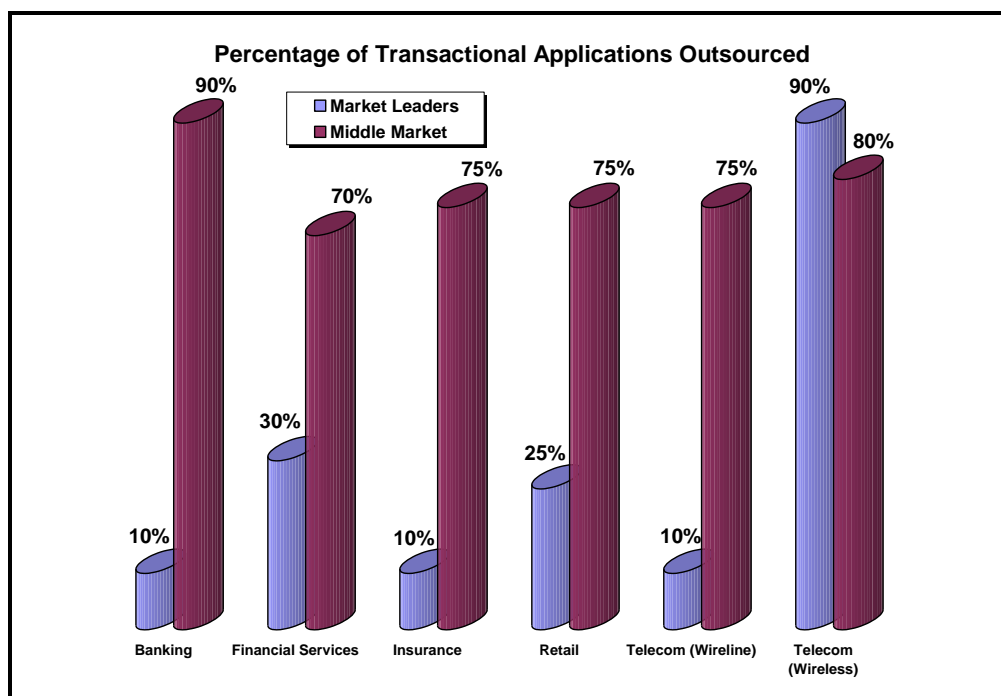


Figure 1 – Print Production Outsourcing by Vertical Market

In most vertical markets, the top- and mid-tier organizations swing between outsourcing print and building print production over the course of several years. Banking is the exception and is one vertical in which there is a clear trend toward outsourcing for small- and mid-tier institutions.

The Check Clearing for the 21st Century Act (Check 21) allows electronic images and check substitutes to be used in place of the original check, clearing the way for banks to outsource production instead of upgrading existing equipment bases. Madison Advisors projects that this trend will continue for 3 to 5 years as check volumes continue to decline. According to the Federal Reserve Bank's *2007 Federal Reserve Payments Study* (December 10, 2007), check volumes peaked in 2000 at 49.6 billion. Current check volumes are now less than 60% of the 2000 peak.

Telecommunications is another vertical in transition. The consolidation of wireline, broadband, and cellular companies into a single entity presents major print production management challenges. Numerous mergers and acquisitions have brought together organizations with conflicting beliefs about the merits of in-house print production and distribution.

Historically, the wireline providers built out the infrastructure to support in-house print production, whereas wireless and broadband providers have traditionally outsourced print production. In several cases, the merged organizations have elected to outsource print production of the primary applications. Madison Advisors believes that most of the newly formed organizations will look for outsourced print providers that can deliver better value and support both printed and electronic communications.

In addition to outsourced print, Madison Advisors recognizes that many organizations outsource other functions related to transactional documents. Electronic notification and call center operations are two of the most common outsourced operations supported by service providers. Since the service providers control the delivery of transactional documents, they are well suited to follow up the documents with notifications or respond to phone inquiries. The additional services also create a tighter bond between providers and clients.

In keeping with the integration of print production and related services, key industry leaders continue to develop a portfolio of managed services that tie together traditional print and mail services with business process outsourcing and consulting services. Vendors work closely with customers to identify critical output-related business processes, such as customer service inquiries, that can be automated and outsourced.

Xerox Global Services (XGS) is one of the leaders in document process automation. XGS consultants utilize a Lean Six Sigma-based process to assist customers with automation. XGS examines the business process associated with document generation and builds solutions using software and hardware from both Xerox and its partners. XGS manages the entire outsourced business process and teams with specialized service bureaus to deliver an end-to-end solution.

In another example, Standard Register formed an alliance with HP to provide customers with a single source for enterprise document production. The alliance brings together HP's Managed Print Services and Standard Register's software and print production services. Standard Register's PrintConcierge printing specialists work with clients to centrally source, manage, and distribute print production.

In 2007, Williams Lea, a business process outsourcing (BPO) provider, expanded its services in North America in the area of document process outsourcing, which includes workflow, image capture, storage, and management of printed materials. The National Outsourcing Association (NOA) estimates global business process outsourcing market size has increased from \$119.7 billion in 2006 to \$127.5 billion in 2007, driven primarily by financial services organizations looking to optimize internal operations. Madison Advisors expects BPO opportunity to spur further partnerships between print and mail service providers and traditional corporate IT outsourcers.

## PORTALS

For the high-volume transactional market, web-based portals allow clients to monitor the current status of jobs, generate production reports for evaluation of service level agreements (SLAs), and control marketing content. Clients also use portals to notify the service provider of changes to jobs and provide an easy communications channel between clients and service providers.

For service providers, portals provide a more-reliable method of communication than voicemail or e-mail. The portal software routes customer communications to the appropriate individual and re-routes inquiries if the initial recipient is unavailable. Also, portals reduce customer service calls, and thereby reduce service costs because clients are able to check job statuses online. Finally, service providers host portals to maintain and enhance on-going relationships with clients.

Recent extensions to document composition systems for content and marketing message management enable service bureaus to offer hosted interfaces for managing various forms of content. Exstream Dialogue and Metavante CSF Designer provide web-based user interfaces that allow content owners, such as marketing departments, to create and embed messages into documents without disrupting the document's layout. In addition, marketing uses the interface to define business rules that determine the conditions under which the software adds the message to a document, thereby segmenting the customer base. By extending these interfaces through a customer portal, service bureaus offer their clients the ability to directly control marketing content without incurring programming charges.

While conducting this study, Madison Advisors found that most service bureaus offer basic production monitoring and reporting through a web portal at little or no charge to their clients. Some service bureaus also allow clients to submit change requests through the portal.

Many service bureaus continue to develop portal services and often offer these services for nominal fees. Advanced portal services include online message management and segmentation, graphics management, and customer correspondence.

In our discussions with participants of this study, Madison Advisors learned that many service bureaus consider the portal-based services a low-cost option to in-house programming. As a result, the service bureaus offer the functionality for a small fee to encourage clients to adopt the technology.

Several of the providers that participate in Madison Advisors' Best Practices Analysis offer message management to attract clients and do not yet charge for the service. One provider charges \$0.005 per message placed on each image. The others do not charge for messages, but charge graphic design fees for each graphic added to the system.

## **DIGITAL COLOR PRINT PRODUCTION**

Digital color print production continues to grow as service bureaus implement new inkjet systems and update existing toner-based systems. Several study participants indicated that digital color production was a high priority to accommodate clients as they develop trans-promo applications. As the speed of digital color production presses increase and the per-page costs decrease, both commercial printers and traditional service providers have successfully tested digital color presses and are now running production. To compliment the digital color production, some service bureaus offer color design and graphics services.

Although digital color printers represent less than 10 percent of the installed printer base, several national service bureaus added new color printers in the past year. National service bureaus primarily use Kodak Versamark inkjet-based systems to deliver high-volume, digital color print production. However, new inkjet systems from InfoPrint Solutions and Océ Printing Systems have made in-roads into this market. In addition, HP recently announced a new high-volume, inkjet-based system to compete for market share.

The table below identifies inkjet-based digital color solutions available on the market or recently announced for 2008/2009. The table provides each product's speed in letter-sized impressions per minute allowing for duplex printing.

VENDOR	PRODUCT	SPEED	RESOLUTION
HP	Inkjet Web Press	2,600	600x600
InfoPrint Solutions	InfoPrint 5000 CD1/CD2	916	720x360
Kodak	Versamark VX5000e	1,416	300x1200
Océ	JetStream 2200	2,148	600x600

**Table 3 – High-volume Color Inkjet Systems**

Commercial printers and some service providers favor toner-based systems from vendors such as HP-Indigo, Xeikon, Kodak NexPress, and Xerox due to better image quality and better color depth. However, these systems have a higher cost per page than the inkjet systems, making them cost-prohibitive for very high-volume applications. Several vendors such as Océ and Xerox announced new toner-based systems this year.

The table below identifies toner-based digital color solutions available on the market or recently announced for general availability in 2008/2009. The table provides each product's speed in letter-sized simplex impressions per minute.

VENDOR	PRODUCT	SPEED	RESOLUTION
HP-Indigo	7000 Digital Press	120	2,400x2,400
Kodak	Nexpress S3000	100	600x600
Océ	ColorStream 10000	86	600x600
Océ	VarioStream 9240	86	600x600
Xeikon	Xeikon 8000	122	1,200x1,200
Xerox	CF490	493	600x600
Xerox	iGen4	110	600x600

**Table 4 – High-volume Color Toner Systems**

Madison Advisors finds that the retail and financial services vertical markets lead the way in adoption of digital color. Retail organizations convert bills into trans-promo documents by leveraging the billing details to present specific offers and promote partners. Financial services organizations use digital color as part of a broad customer retention strategy by switching marketing documents from offset to digital print and adding color to transactional documents. Financial services firms as well as the billing or financial arm of the other verticals, such as manufacturing, add personalization and color to printed marketing communications.

Although volume and coverage factors still apply, service providers base the price of digital color printing primarily on the device. Average per-page prices for toner-based devices are three to six times higher than prices for inkjet-based devices. Some participants incorporate color coverage into the price quotes to account for additional consumables. Prices vary by 10 to 15 percent between low and medium coverage.

In general, clients prefer the lower-cost inkjet output for high-volume transactional and trans-promo documents, whereas clients prefer the higher-cost, toner-based output for variable-data printing of promotional/marketing literature.

## CERTIFICATION

Many high-volume transactional documents created by financial services and healthcare organizations are subject to government regulation. Regulations, such as HIPAA, require data confidentiality and impose penalties for distribution of a customer's personal data to another recipient. Service bureaus utilize physical security, data security, and production tracking software to restrict access and reduce errors.

Government regulations associated with data security and delivery deadlines apply to the client organization even if it outsources the entire production print operation. This means that organizations that outsource production print maintain the risks associated with double-stuffed envelopes, missed mailing deadlines, etc. Therefore, organizations evaluate prospective service bureau partners on their ability to deliver the correct documents in a timely fashion. These organizations require service providers to share risk related to poor document production or incident violations, to the extent that service providers now sign up for penalties if their processes cause or fail to detect violation situations.

The table below identifies various certifications and quality processes that service bureaus work to achieve.

CERTIFICATION	GOVERNING BODY	SCOPE
<b>CISP/PCI</b> (Cardholder Information Security Program / Payment Card Industry Data Security Standard)	VISA USA and MasterCard	Requirements for the protection of credit card information, including encryption, access control, physical security and operational audits
<b>ISO 9001</b>	ISO	Requirements for the Quality Management System Standard that include a set of procedures that cover the execution and monitoring of all key processes in the business
<b>MPTQM</b> (Mail Preparation Total Quality Management)	USPS	Requirements for mail preparation process; from the generation and bar-coding of a letter to the final sorting and containerizing that takes place just prior to presenting the mailing to the Postal Service
<b>SAS70</b> (Statement on Auditing Standard 70)	AICPA	Requirements for internal controls and safeguards over hosted data and processing information

Table 5 – Quality Certifications

Madison Advisors found that the participating service bureaus undergo numerous certification processes and expend significant resources to maintain compliance with certification regulations in order to show clients a commitment to quality.

Client organizations place certification requirements in requests for proposals. During Madison Advisors' research, several high-volume document producers – clients of the participating service bureaus – indicated that data security and package integrity were high priorities and that they reviewed production reports with their service bureau partner on a monthly basis.

Several of the participating service bureaus indicated support for improved quality as part of their near-term strategies. All of the participating service bureaus have undergone SAS70 certification and most have completed or plan to finish ISO certification. Two service bureaus expressed interest in submitting qualifications for the Malcolm Baldrige National Quality Award. The program examines seven criteria categories that represent a framework for quality excellence. Organizations require a world-class quality management program to win this award. Refer to the service provider profiles, beginning on page 34, for detail on certifications by provider.



## SECTION III – MARKET PRICING

In this section, Madison Advisors reviews the market and our findings on competitive pricing across five major categories of service offered by service providers, presented in order of the document lifecycle:

- Design Services
- Digital Print
- Insertion
- Postal Services
- Electronic Presentment Services

To do this, for each of the major categories above Madison Advisors defines the services within the category; presents competitive pricing in the form of low, average, and high pricing; and provides our analysis of the competitive pricing.

### DATA-COLLECTION PROCESS

For this study, Madison Advisors discussed each sample application and the scope of data collection with each participant to ensure that the applications were sized appropriately. Madison Advisors' survey included a corporate background questionnaire, production details on seven sample applications, and a data-collection workbook. After receiving the pricing information, Madison Advisors reviewed the data with each provider to identify and clarify any unclear responses.

## DESIGN SERVICES

Design services encompass the various services required to prepare client applications for production. Most service providers assign a project management team to work with the client to migrate applications into the provider's operational environment. Most providers offer project management free of charge. Creative design and programming support the migration but are billed hourly. Finally, most providers conduct application testing as part of the migration project.

Service bureaus support document composition primarily through programming and rely on clients or third-party design firms to design or redesign complex documents, such as statements. While most service bureaus accept both client data and pre-composed, print-ready files, Madison Advisors found that service bureaus tended to lean heavily one way or another. Nearly every participant accepted 75 percent or more of its work as either raw client data or pre-composed files, with only a few handling an even split.

The table below provides descriptions for the services discussed in this section.

SERVICE	DESCRIPTION
<b>Project Management</b>	Managing document development and implementation projects
<b>Document Design</b>	Designing graphic arts-related documents and digital images
<b>Programming</b>	Developing data-driven documents using business rules, scripting, and data processing
<b>Testing Services</b>	Generating test files and producing test output as part of the startup or application development process

**Table 6 – Definitions for Design Services**

Whereas every service provider identifies specific hourly rates for creative design services and programming, only a few providers charge for project management. The figure on the following page presents the low, average, and high pricing for the key areas of design services, as defined above. For services for which only one data point was available, the pricing is provided as the average.

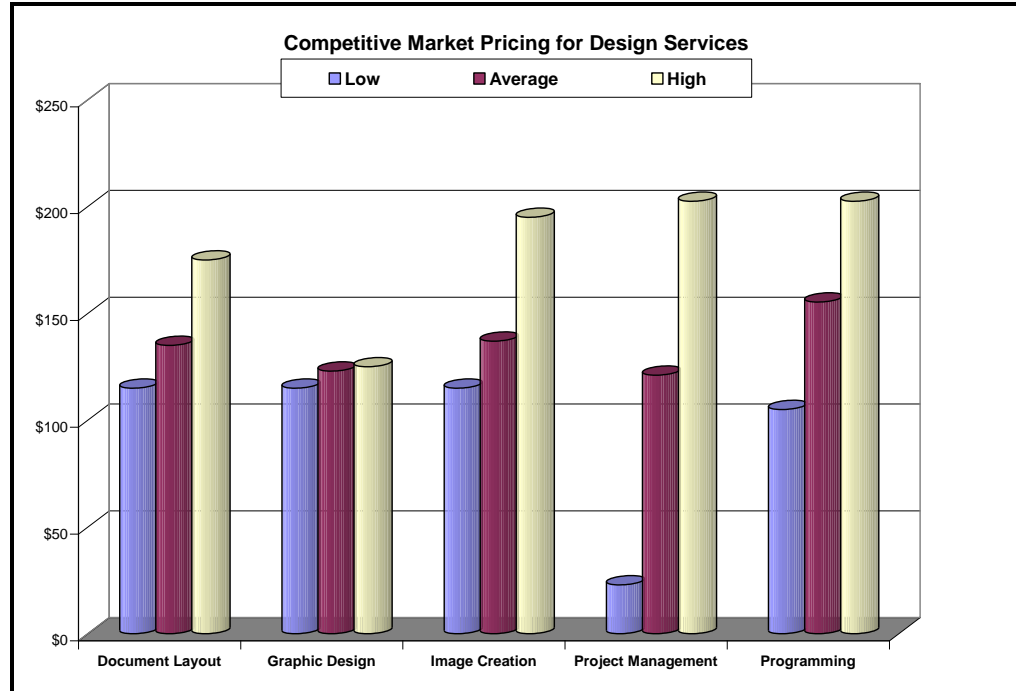


Figure 2 – Competitive Market Pricing for Design Services

When responding to RFPs, each service provider describes a full range of project management services, including support from a designated project manager, an evaluation of each application, and non-programming conversion services. Most include project management services free with the contract, but a few providers include a fixed number of hours in the contract and charge hourly after the fixed number is exceeded. Large corporate clients, especially those transferring the print production from an internal print shop, expect assistance with migrating and testing the applications in the new outsourced environment.

Some service providers include testing services and generate proofs for existing applications as part of the contract. Charges for testing new applications are applied to programming costs or bureaus include testing services as part of the contract. Only a few service providers support online test proofs, even though many corporate clients would like to use online processes to streamline the workflow and reduce the proofing cycle time. One provider delivers the online proof through the customer service application at a cost of \$0.02 per image, while other providers indicate plans to offer online proofs in the future.

Compared to 2007 pricing, the range of prices for Design Services expanded, but the average prices stayed nearly the same. For example, the 2007 average for project management was \$127.50 and the 2008 average is \$121, while programming rose slightly, from \$144 in 2007 to \$155 in 2008.

## DIGITAL PRINT

For the purposes of this study, digital print includes the production of different transactional documents from client-supplied data files. Madison Advisors gathered services pricing for five applications across four vertical markets: financial services, utilities, telecommunications, and insurance.

The table below provides details on each of the sample applications used during the data-collection process. Madison Advisors collected data from each service provider using the same sample application descriptions.

APPLICATION	DESCRIPTION
<b>Financial Services Statements</b>	<ul style="list-style-type: none"> <li>▪ Image: Duplex, landscape, 8 1/2 x 11, monochrome</li> <li>▪ Package: 4 images (2 sheets), tri-fold</li> <li>▪ Volume: 600,000 statements per year (2.4 million images per year)</li> <li>▪ SLA: 3 days</li> </ul>
<b>Residential Utility Bills</b>	<ul style="list-style-type: none"> <li>▪ Image: Duplex, portrait, 8 1/2 x 11, monochrome</li> <li>▪ Package: 2 images (1 sheet), tri-fold</li> <li>▪ Volume: 15,000 - 20,000 bills per day (5 million images per year)</li> <li>▪ SLA: 1 day</li> </ul>
<b>Small Page Size</b>	<ul style="list-style-type: none"> <li>▪ Image: Duplex, portrait, 6 5/8 x 9 1/2, monochrome</li> <li>▪ Package: 2 images (1 sheet), tri-fold</li> <li>▪ Volume: 15,000 - 20,000 bills per day (5 million images per year)</li> <li>▪ SLA: 1 day</li> </ul>
<b>Insurance Policies</b>	<ul style="list-style-type: none"> <li>▪ Image: Duplex, portrait, 8 1/2 x 11, monochrome</li> <li>▪ Package: 20-40 images (10-20 sheets; average 16 sheets), half-fold and/or flat</li> <li>▪ Volume: 5,000 - 10,000 policies per day (60 million images per year)</li> <li>▪ SLA: 1 day</li> </ul>
<b>Letters</b>	<ul style="list-style-type: none"> <li>▪ Image: Simplex, portrait, 8 1/2 x 11, monochrome</li> <li>▪ Package: 1 image (1 sheet), tri-fold</li> <li>▪ Volume: 30,000 - 40,000 letters per day (12 million images per year)</li> <li>▪ SLA: 1 day</li> </ul>

Table 7 – Sample Transactional Applications: Digital Print

Digital print comprises the most dynamic pricing of any of the services detailed in this report. Madison Advisors' research indicates that while the pricing models for other services continue to mature, most service providers use one of two digital print pricing models. Some national service providers use separate pricing for the first page and additional pages, while smaller providers use a per-page pricing model. Several participants bundle print and automated insertion into a single per-piece price to clients. For this study, participants provided per-page pricing.

The figures below and on the following pages present the low, average, and high pricing for the key areas of digital print. The pricing reflects the attributes of the different applications defined on the previous page, so some services do not apply to all applications. For example, policies do not typically contain digital color, so none of the service providers we surveyed provided that data point.

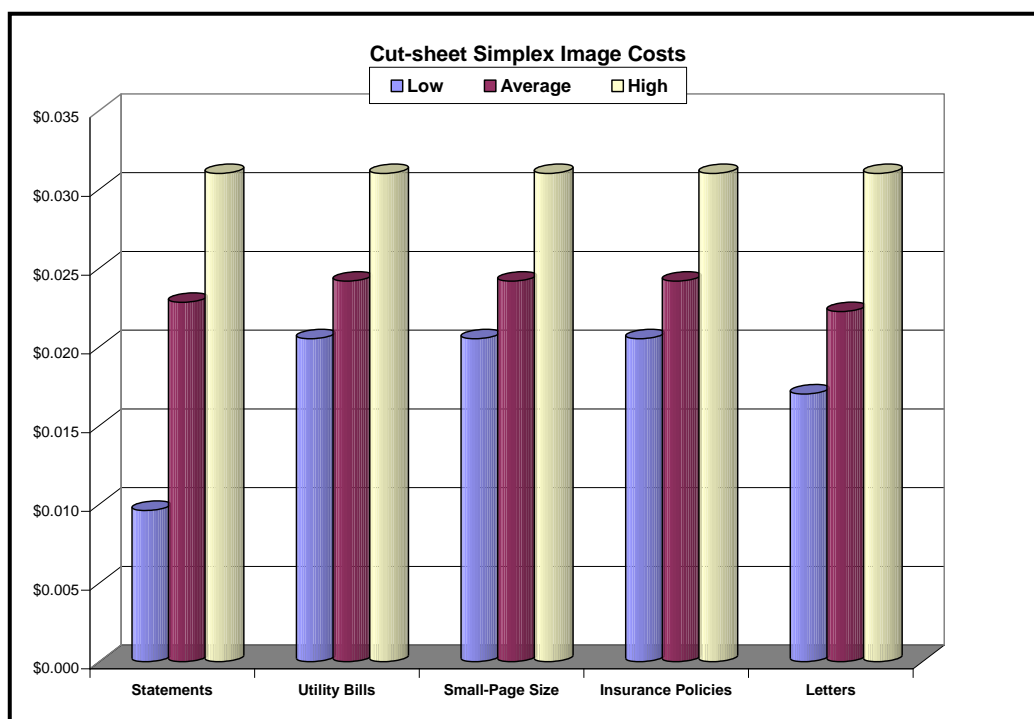


Figure 3 – Cut-sheet Simplex Image Costs

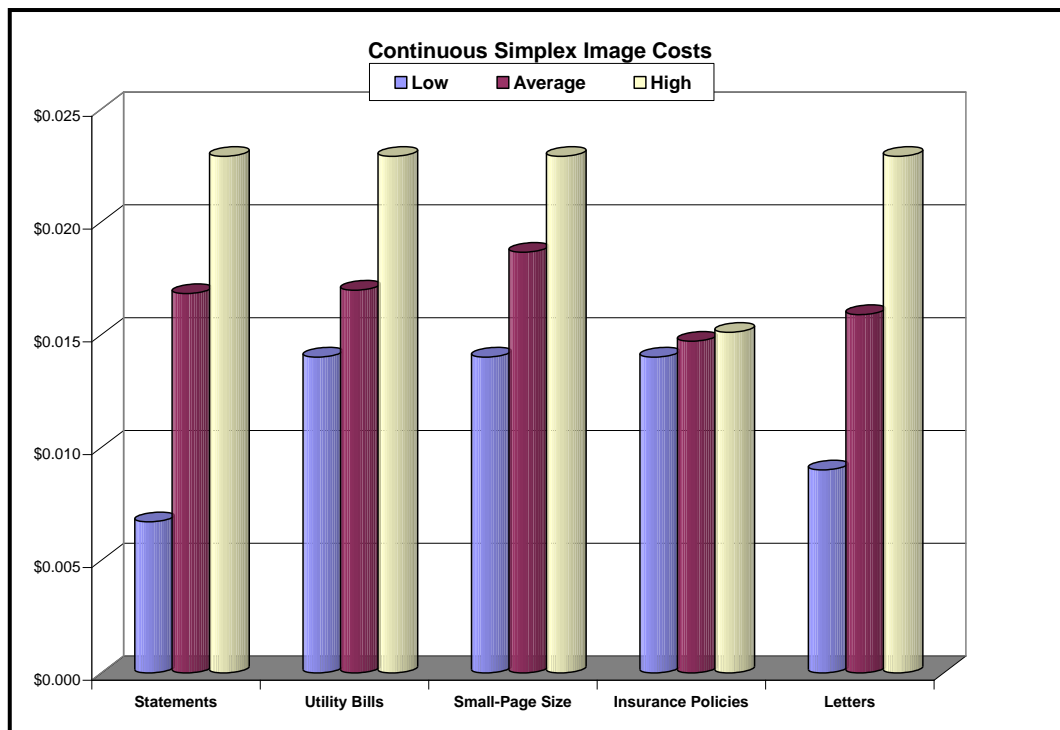


Figure 4 – Continuous Simplex Image Costs

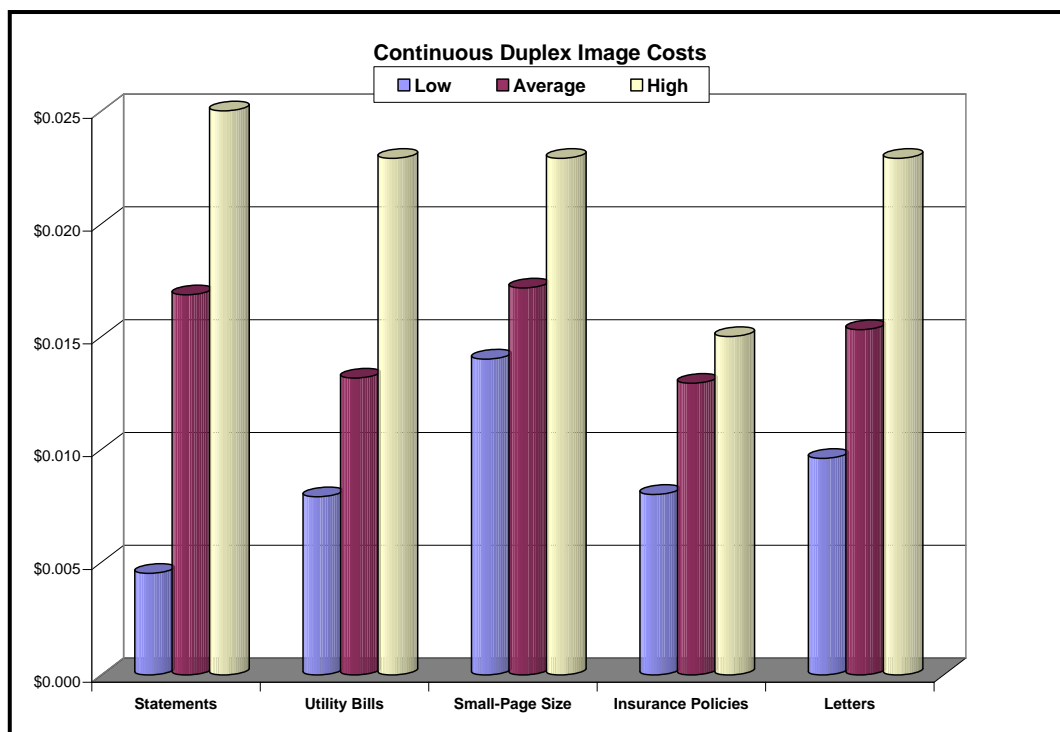


Figure 5 – Continuous Duplex Image Costs

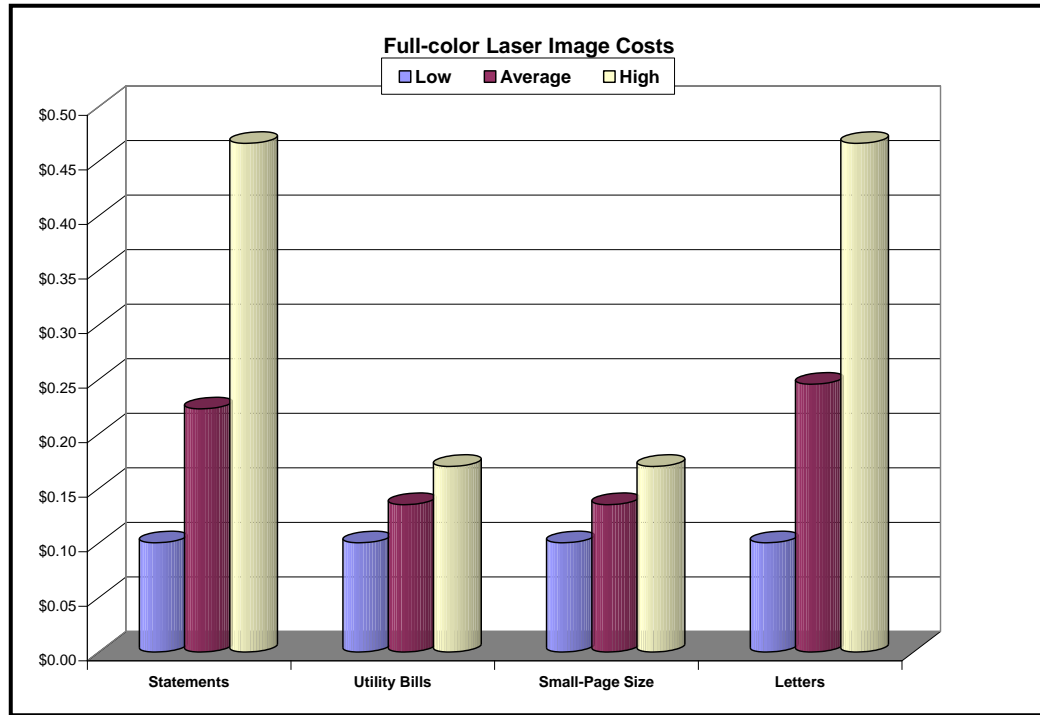


Figure 6 – Full-color Laser Image Costs

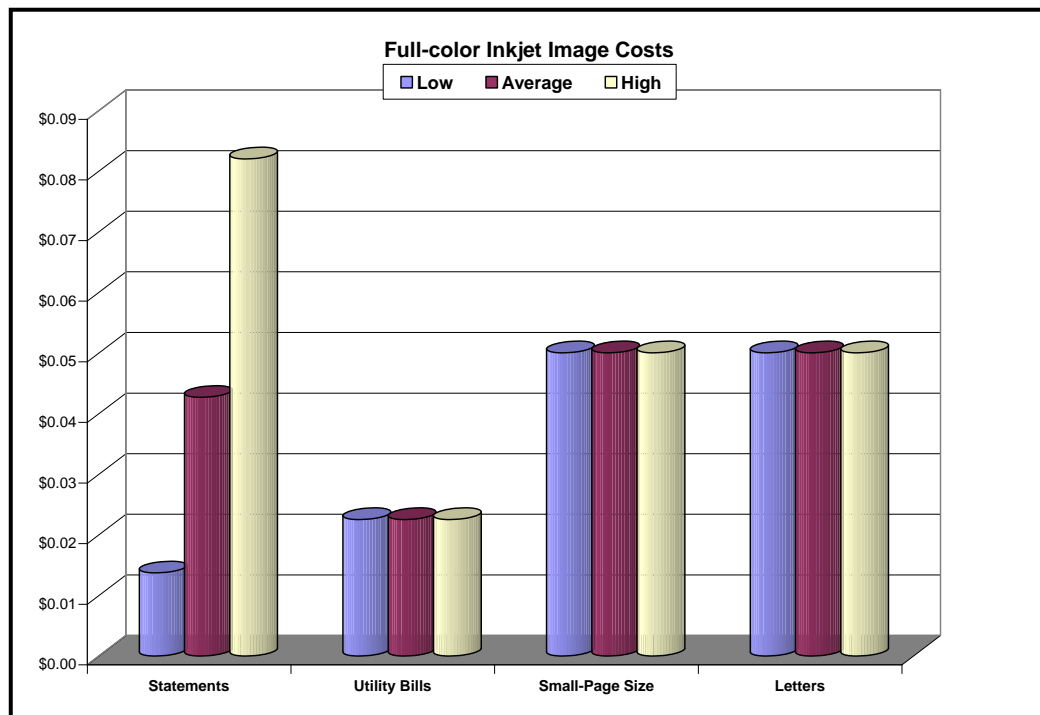


Figure 7 – Full-color Inkjet Image Costs

No one service provider offers the lowest prices for every category. Providers offer a significant range of prices depending on both volume and vertical markets with emphases on specific verticals. For example, First Data offers monochrome and color production of financial statements but does not compete for insurance policies.

The variance in prices across verticals for continuous duplex images reflects excess print capacity and competitive pressures. All of the providers offer continuous duplex printing across one or more vertical markets, yet the financial services application (statements) presents the greatest standard deviation for continuous duplex image prices. Compared to the 2007 average of \$0.0194 per image, the 2008 average dropped to \$0.0169. Madison Advisors sees the most service provider competition in this vertical and expects digital print prices to be driven down over the next couple years.

Additional services, such as color printing and personalization services, along with supplemental benefits, such as a robust client interface, will command higher prices for the next 2 to 3 years. Madison Advisors' data shows an increase in average color laser and color inkjet pricing between 2007 and 2008.

Only some service providers offer services to the other vertical markets due to a lack of vertical expertise or small client base. The utilities and insurance markets exert greater price pressure than the financial services vertical due to more restrictive cost structures. Average print prices for utility bills and small page-sized policies remained flat between 2007 and 2008. Madison Advisors believes that the digital print prices will remain steady in utilities and insurance but new opportunities will emerge as these markets adopt digital color printing and electronic delivery services.

Few of the national service providers offer highlight color printing so it is not reflected in this study. Madison Advisors encounters highlight color solutions in use by smaller providers and by providers with an equipment base that is more than 8 years old. Due to the emergence of low-cost, high-speed, full-color digital printers, Madison Advisors expects the number of highlight color pages to drop as providers replace older equipment with new digital color printers.



## INSERTION

For the purposes of this study, insertion includes the insertion of different transactional documents, enclosures, and business reply envelopes into mailing envelopes. Madison Advisors gathered services pricing for five applications across four vertical markets: financial services, utilities, telecommunications, and insurance. However, we only received representative data for four of the five applications.

The table below provides details on each of the sample applications used during the data-collection process. Madison Advisors collected data from each service provider using the same sample application descriptions.

APPLICATION	DESCRIPTION
<b>Financial Services Statements</b>	<ul style="list-style-type: none"> <li>▪ Image: Duplex, landscape, 8 1/2 x 11, monochrome</li> <li>▪ Package: 4 images (2 sheets), tri-fold</li> <li>▪ Volume: 600,000 statements per year (2.4 million images per year)</li> <li>▪ SLA: 3 days</li> </ul>
<b>Residential Utility Bills</b>	<ul style="list-style-type: none"> <li>▪ Image: Duplex, portrait, 8 1/2 x 11, monochrome</li> <li>▪ Package: 2 images (1 sheet), tri-fold</li> <li>▪ Volume: 15,000 - 20,000 bills per day (5 million images per year)</li> <li>▪ SLA: 1 day</li> </ul>
<b>Small-Page Size</b>	<ul style="list-style-type: none"> <li>▪ Image: Duplex, portrait, 6 5/8 x 9 1/2, monochrome</li> <li>▪ Package: 2 images (1 sheet), tri-fold</li> <li>▪ Volume: 15,000 - 20,000 bills per day (5 million images per year)</li> <li>▪ SLA: 1 day</li> </ul>
<b>Letters</b>	<ul style="list-style-type: none"> <li>▪ Image: Simplex, portrait, 8 1/2 x 11, monochrome</li> <li>▪ Package: 1 image (1 sheet), tri-fold</li> <li>▪ Volume: 30,000 - 40,000 letters per day (12 million images per year)</li> <li>▪ SLA: 1 day</li> </ul>

**Table 8 – Sample Transactional Applications: Insertion**

The figures on the following pages present the low, average, and high pricing for the key areas of automated insertion. The pricing reflects the attributes of the different applications defined above, so some services do not apply to all applications. For example, service providers insert each application in portrait or landscape but not both orientations.

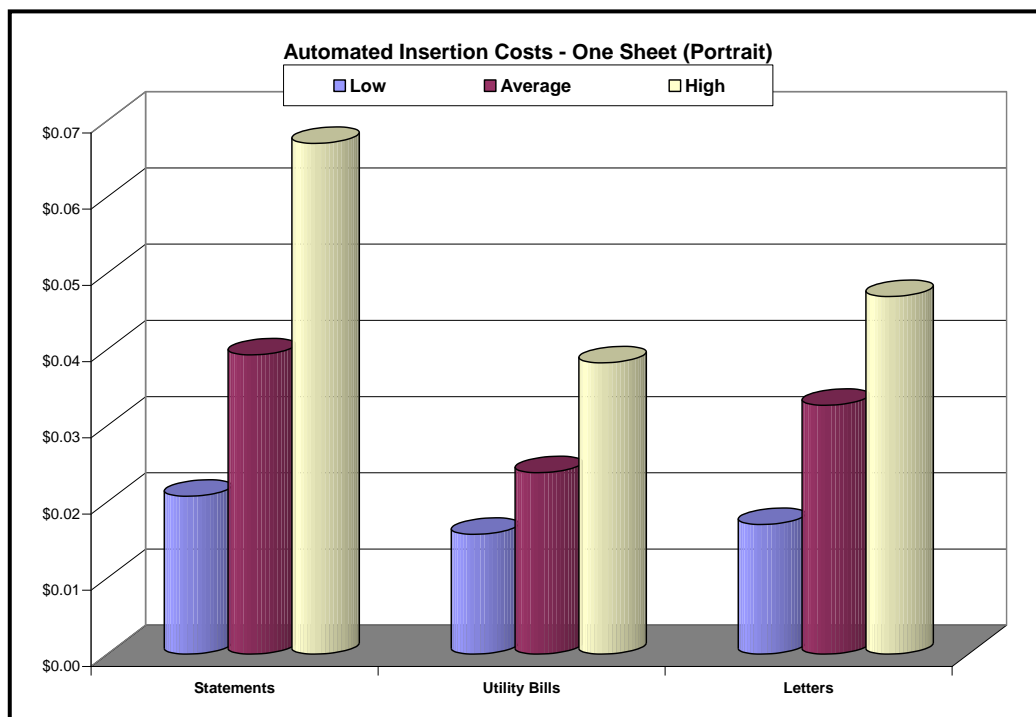


Figure 8 – Automated Insertion Costs – One Sheet (Portrait)

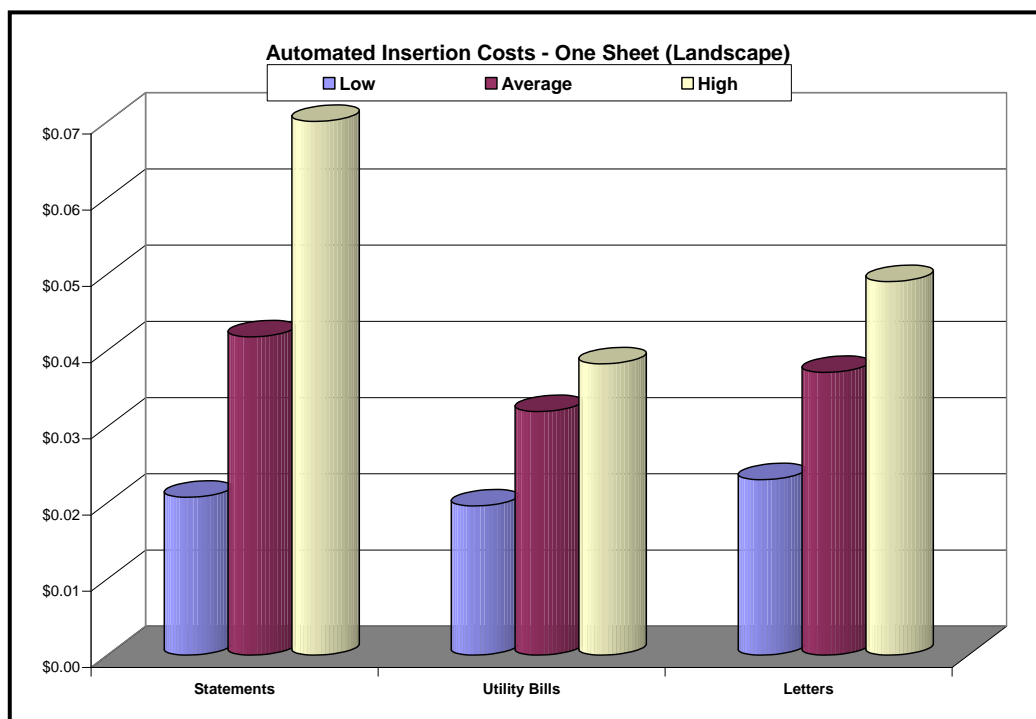


Figure 9 – Automated Insertion Costs – One Sheet (Landscape)

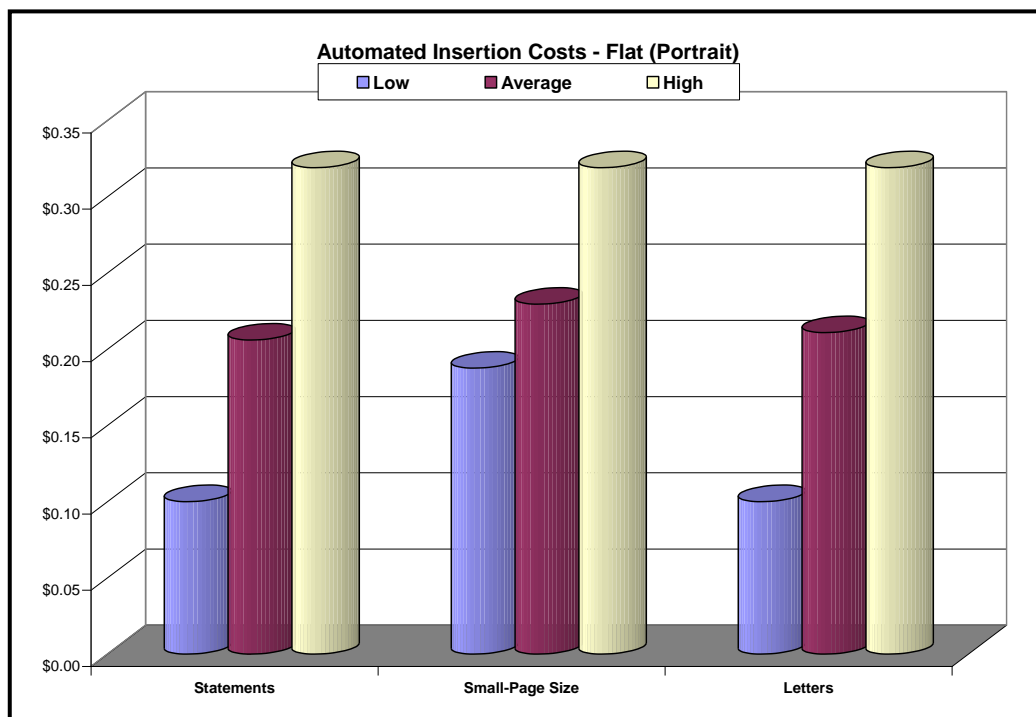


Figure 10 – Automated Insertion Costs – Flat (Portrait)

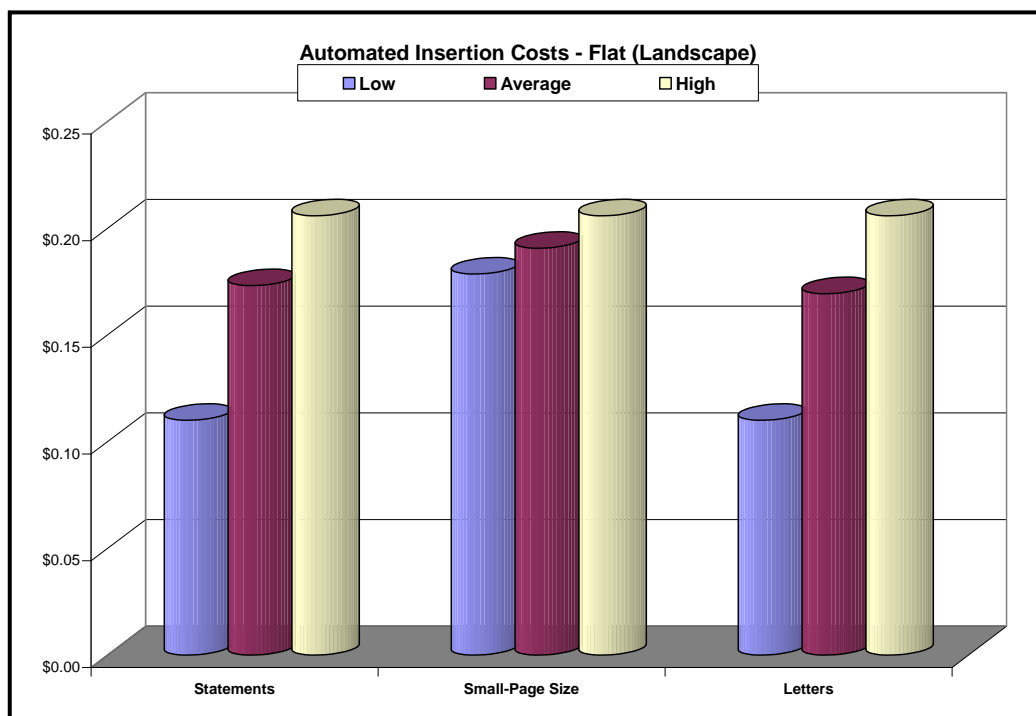


Figure 11 – Automated Insertion Costs – Flat (Landscape)

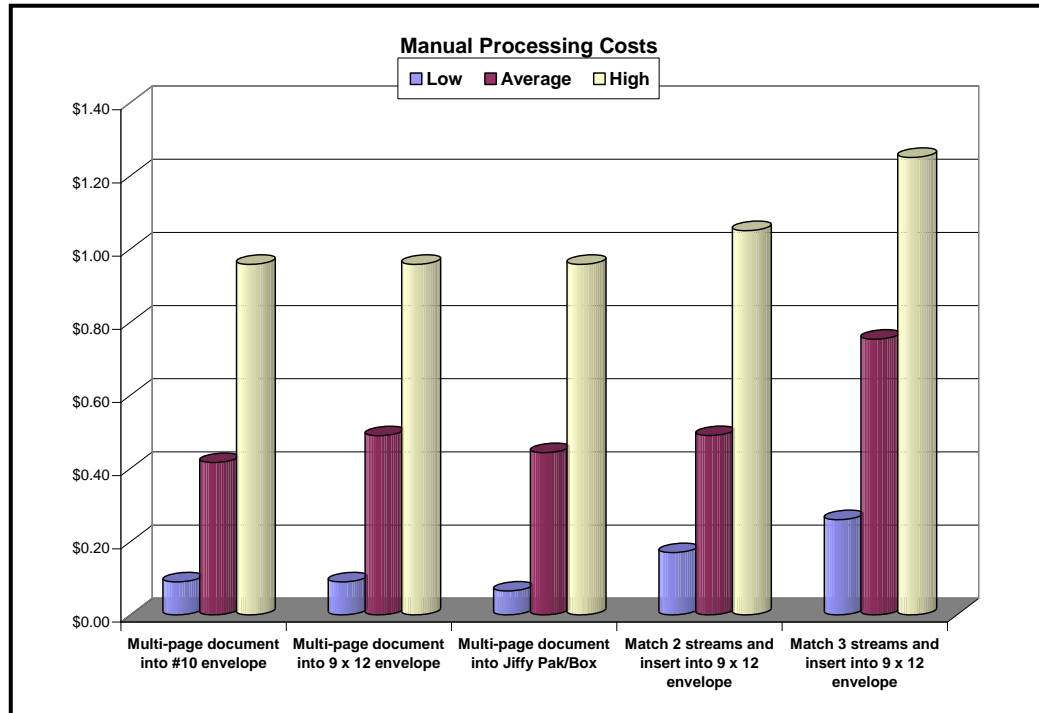


Figure 12 – Manual Processing Costs

No one service provider offers the lowest prices for every category. Providers offer a significant range of prices depending on both volume and vertical markets with emphases on specific verticals. For example, First Data offers monochrome and color production of financial statements but does not compete for insurance policies.

As indicated in Figure 8, on page 26, the insertion pricing varies significantly between applications. The pricing varies more between applications than between portrait and landscape insertion. With one exception, all of the service providers offer the same insertion pricing model: one price for the first page and a lower price for each additional page. This applies to portrait and landscape insertion. However, the providers charge per envelope for flat insertion. One provider charges per envelope for portrait (\$0.08), landscape (\$0.08), and flat insertion (\$0.20).

The insertion pricing for flats also varies widely with higher prices for portrait insertion than for landscape insertion of flats. Several service providers noted that they provide clients with more granular flats pricing based on equipment capability. The pricing shown reflects mechanical insertion. However, many service providers also offer manual flats insertion for documents greater than 100 pages and box insertion for very large documents. Figure 12, above, displays the costs for various manual processing operations including low-volume or special-condition insertion. Even the most highly automated service bureaus provide some manual processing for very high-page-count items or very small jobs, such as reprint runs.

## POSTAL SERVICES

Postal services include various activities related to address quality and pre-sorting for postal discounts. Postal services also include the addition of postal tracking bar codes for piece-level tracking through the USPS mail stream. The table below provides descriptions for the services discussed in this section.

SERVICE	DESCRIPTION
<b>Mail Preparation</b>	Conducting electronic presort processing on customer data file
<b>ZIP Code Assignment</b>	Performing CASS processing with and without delivery point validation (DPV) on customer data file
<b>Move Update</b>	Conducting NCOALink processing on customer data file or any other services included as part of the Move Update charge
<b>Delivery Tracking</b>	Generating PLANET code bar codes
<b>Presort Fee</b>	Sorting envelopes by ZIP code prior to submitting the job to the USPS

Table 9 – Definitions for Postal Services

The figure below presents the low, average, and high pricing for the key areas of postal services, as defined above.

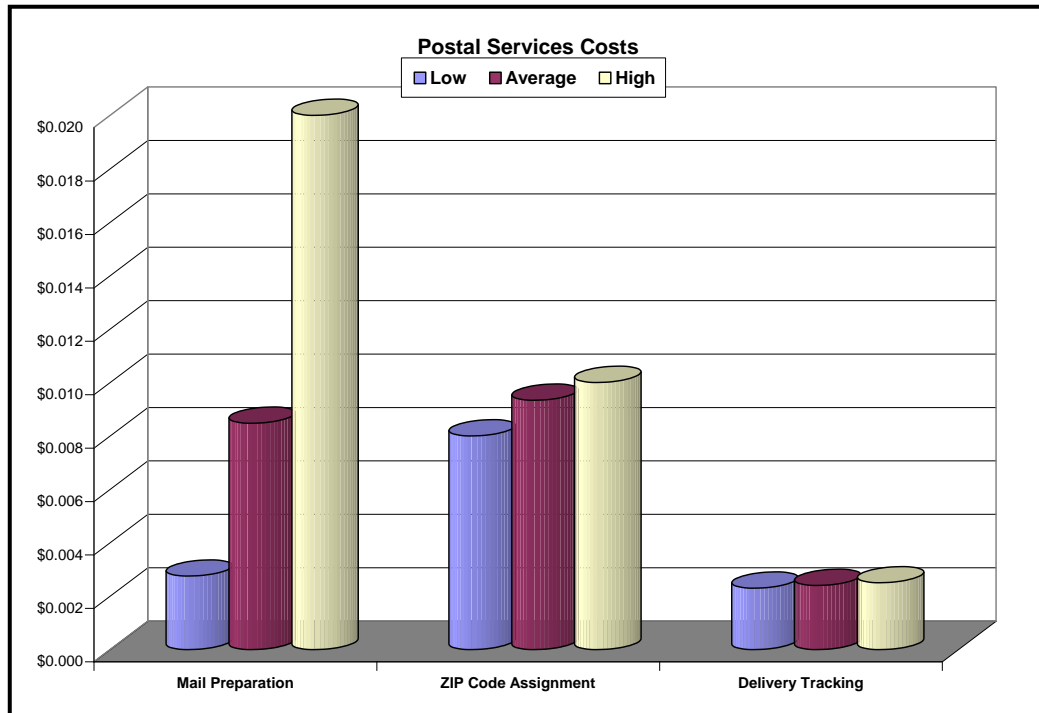


Figure 13 – Competitive Market Pricing for Postal Services

There is no common model for postal services. The mail preparation fee varies quite a bit between providers, since providers define the included services differently. However, one provider indicated that the fee is volume-sensitive and ranges from \$0.003 to \$0.007 per envelope. The provider also indicated that the fee covers manifest mailing, but if the mail pieces are sent to a consolidator, the mail preparation fee does not apply.

Two providers indicated that presort fees vary by application type and vertical market, while other providers listed only a single fee per envelope. Figure 14, below, presents the low, medium, and high pricing for presorting by item.

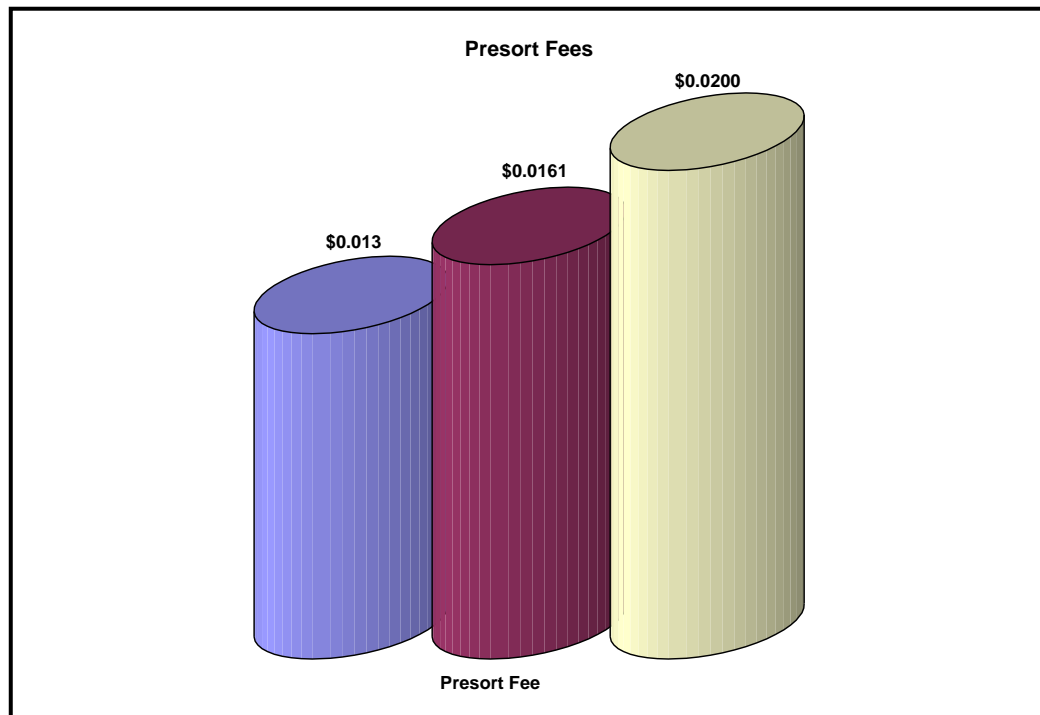


Figure 14 – Competitive Market Pricing for Presort Fees

## ELECTRONIC PRESENTMENT SERVICES

Electronic presentment includes activities related to generating, archiving, and enabling client or customer access to electronic images of printed documents. Service bureaus typically bundle electronic presentment services with print services and may incorporate reporting or client portal tools.

The table below provides descriptions for the services discussed in this section.

SERVICE	DESCRIPTION
<b>Implementation</b>	Implementing base electronic presentment solution with five document types
<b>Hosting</b>	Hosting an electronic document archive solution
<b>Storage Duration</b>	Default number of months that documents are kept online
<b>Programming</b>	Developing data-driven documents using business rules, scripting, and data processing
<b>Loading – High Volume</b>	Generating and enabling access to electronic images at average volumes above 50,000 per month
<b>Loading – Low Volume</b>	Generating and enabling access to electronic images at average volumes below 50,000 per month
<b>Retrieval</b>	Accessing a document from the archive on demand
<b>E-mail Notification</b>	Sending e-mail notification to a customer that a document is available for retrieval

Table 10 – Definitions for Electronic Presentment Services

The table on the following page presents the low, average, and high pricing for the key areas of electronic presentment services, as defined above.

SERVICE	VALUE	2008 PRICING	2007 PRICING
<b>Implementation</b>	Low	\$5,000.00	\$10,000.00
	Average	\$21,000.00	\$23,416.67
	High	\$50,000.00	\$35,250.00
<b>Hosting</b>	Low	\$3,500.00	\$3,500.00
	Average	\$5,583.33	\$7,000.00
	High	\$7,500.00	\$10,000.00
<b>Storage Duration</b>	Low	6 months	12 months
	Average	25 months	48 months
	High	84 months	84 months
<b>Programming</b>	Low	\$105.00	\$125.00
	Average	\$186.00	\$166.00
	High	\$225.00	\$200.00
<b>Loading – High Volume</b>	Low	\$0.0020	\$0.0072
	Average	\$0.0049	\$0.0197
	High	\$0.0076	\$0.0315
<b>Loading – Low Volume</b>	Low	\$0.0055	\$0.0072
	Average	\$0.0084	\$0.0347
	High	\$0.0120	\$0.0500
<b>Retrieval</b>	Low	\$0.0030	N/A
	Average	\$0.0077	N/A
	High	\$0.0150	N/A
<b>E-mail Notification</b>	Low	\$0.0200	N/A
	Average	\$0.0583	N/A
	High	\$0.0900	N/A

**Table 11 – Competitive Market Pricing for Electronic Presentment Services**

Most service providers use an implementation and monthly fee model. The implementation covers the initial system setup and the development of one or more documents. In some cases, this fee is calculated using a set number of programming/development hours. One provider does not charge an implementation fee, but the solution must be part of a print/mail proposal.

Madison Advisors found that pricing for the initial setup fee varied widely depending on the size of the client and the volume of print associated with the proposal. Although most providers do price electronic presentment services as a separate offering, these services come bundled with a print/mail proposal. These solutions may also include discounted programming services and set up of additional documents at a lower rate.



Loading fees include both the creation of the electronic format, usually AFP or PDF, and placement of the electronic file on the system. Most providers do not break out the charges into separate components, but rather quote one charge for both. Loading fees typically go down as monthly volume increases. However, with one provider, the first 10,000 images are free. The standard storage time ranges from 1 to 7 years. Service providers targeting the financial services market offer a 7-year retention policy.

Only one provider specifies a separate fee for running indices or transforms on a document print stream. Other providers include some transformation and document indexing as part of the initial implementation. None place any limits on the document indexing during the implementation. Service providers fulfill requests to define additional indices on existing documents as programming services.

Clients and customers access online documents stored by service providers. Service providers host the storage of electronic documents and provide clients with web-based interfaces or code-based application interfaces (APIs) that clients use to integrate the document archive into existing applications. The application controls access to documents and provides search tools for finding specific documents based on index values.

Fewer than half of the participants charge for item retrieval. Most service providers charge for loading documents into an electronic system and allow free access once a document has been loaded. A few service bureaus offer e-mail notification to alert customers when new documents, such as monthly statements, have been loaded into the archive.

As presented in the table on the preceding page, prices for all of the services dropped compared to 2007 prices. Madison Advisors believes that these prices will stabilize within the next 2 years as more service bureaus implement solutions currently under development.

## SECTION IV – PROVIDER OVERVIEWS

In this section, Madison Advisors provides brief reviews of each service provider in the study, including service offerings and capabilities. Presented alphabetically, these vendors include:

- Broadridge
- CSG Systems
- First Data
- Personix
- Pitney Bowes Management Services
- RR Donnelley
- Symcor
- TSYS

## BROADRIDGE

Broadridge, with \$7.8 billion in revenues and approximately 550,000 clients, is one of the largest independent computing services firms in the world. Previously a division of ADP, Broadridge operates three print production facilities in the United States – Coppell, TX; Columbus, OH; and Edgewood, NY. Broadridge’s sites are electronically linked and provide disaster recovery for each other through identical systems and procedures, enabling rapid production load balancing.

<b>Print Production Services</b>	Broadridge provides a full range transactional print and mail services supported by dedicated programming services and customized electronic presentment solutions. Broadridge provides electronic presentment services including electronic presentment and e-delivery. Broadridge utilizes a fully automated workflow process to monitor and distribute production across multiple sites.
<b>Postal Services</b>	Broadridge has a strong relationship with the USPS and offers manifest mailing. In addition, Broadridge has implemented Postal One systems at two of its three U.S. sites.
<b>Electronic Presentment Services</b>	Broadridge provides electronic presentment services including electronic presentment and e-delivery. Broadridge sells the services as a bundled package with reporting and data mining. The system tracks document delivery and reports if a customer fails to receive its documents.
<b>Vertical Focus</b>	<ul style="list-style-type: none"> <li>▪ Financial Services (Brokerage, Mutual Fund, Banks)</li> <li>▪ Insurance</li> </ul>
<b>Certifications</b>	<ul style="list-style-type: none"> <li>▪ ISO9001</li> <li>▪ Mail Preparation Total Quality Management (MPTQM)</li> <li>▪ SAS70</li> </ul>
<b>Additional Services</b>	<ul style="list-style-type: none"> <li>▪ Fulfillment of pre- and post-sale collateral</li> <li>▪ Proxy processing</li> <li>▪ CD-ROM production</li> </ul>

Table 12 – Broadridge Services Offerings

## CSG SYSTEMS

With worldwide headquarters in Englewood, CO, CSG Systems serves more than 265 customers in more than 40 countries. CSG Systems supports billing and customer-care solutions for the cable television, direct broadcast satellite, advanced IP services, mobile, and fixed wireline markets. CSG Systems provides outsourced customer service, data processing, billing, and print and mail services for the telecommunications industry.

<b>Print Production Services</b>	CSG offers a complete customer relationship management system for telecommunications providers backed by a transactional print and mail operation. CSG produces monochrome and color documents using a workflow process to monitor production across multiple sites. CSG's billing system includes a web-based interface for managing personalized messaging.
<b>Postal Services</b>	CSG provides basic postal services including ZIP Code assignment and Move/Update services, and uses an automated system to generate tray tags for each mail tray.
<b>Electronic Presentment Services</b>	CSG provides a presentment solution based on commercial software which allows CSRs to retrieve, view, and print customer documents. The solution is sold as a stand-alone product or packaged with other CSG applications.
<b>Vertical Focus</b>	<ul style="list-style-type: none"> <li>▪ Telecommunications</li> <li>▪ Utilities</li> </ul>
<b>Certifications</b>	None
<b>Additional Services</b>	<ul style="list-style-type: none"> <li>▪ CSG Advanced Customer Service Representative® (ACSR®) – Provides user-friendly access to customer information stored in the billing and customer-care engine</li> <li>▪ CSG Vantage® – Monitors customers' behaviors and conducts marketing and operational analysis</li> <li>▪ CSG Care Express® – Allows customers to view, manage, and pay bills via the Internet</li> </ul>

Table 13 – CSG Systems Service Offerings

## FIRST DATA CORPORATION

First Data Corporation (FDC), with more than \$8 billion in revenues, provides electronic commerce and payment solutions to businesses worldwide, including plastic card-issuing and merchant transaction processing services for clients spanning the financial, government, retail, mortgage, and insurance industries. FDC maintains two complete print and mail production facilities in Omaha, NE, and a letter-printing operation in Chesapeake, VA. FDC shares work across all three facilities using “any-to-any connectivity” that permits files to be transmitted between locations and processed at any facility to meet service level agreements (SLAs).

<b>Print Production Services</b>	FDC provides a full range monochrome and digital color print and mail services managed through factory control software systems. FDC specializes in plastic card production which is integrated with other First Data commercial services. FDC’s statement composition application, Correspondence Director, provides messaging control and design flexibility while FDC’s DecisionQuest, a one-to-one marketing and decision/business rules engine, allows clients to create rules and decisions for their customer databases. The FDC customer portal, ProductionVision, enables clients to monitor customer processing via the web, and supports current and historical production reporting as well as an image viewer for materials, such as inserts and envelopes.
<b>Postal Services</b>	FDC provides postal services including ZIP Code assignment and Move/Update services. FDC handles all mail in a secure environment for delivery to the United States Postal Service (USPS). FDC’s in-house presort services achieve low First Class postage rates.
<b>Electronic Presentment Services</b>	FDC offers a complete line of electronic payment and transaction processing solutions including online presentment and payment processing through a partnership with CheckFree. FDC’s eMessenger provides access to documents via web, e-mail, and text messaging. This service is packaged with other services as part of First Data’s Strategic Communications Solution.
<b>Vertical Focus</b>	<ul style="list-style-type: none"> <li>▪ Financial Services (Brokerage, Mutual Fund, Banks)</li> <li>▪ Insurance</li> <li>▪ Government</li> <li>▪ Retail</li> </ul>
<b>Certifications</b>	<ul style="list-style-type: none"> <li>▪ CISP/PCI certification</li> <li>▪ Mail Preparation Total Quality Management (MPTQM)</li> <li>▪ SAS70</li> </ul>
<b>Additional Services</b>	<ul style="list-style-type: none"> <li>▪ Transaction processing</li> <li>▪ Electronic filings</li> <li>▪ ATM/POS terminal management</li> <li>▪ Fraud /Risk management solutions</li> <li>▪ Check clearing</li> </ul>

Table 14 – First Data Corporation Service Offerings

## PERSONIX

Personix, a subsidiary of Fiserv Inc., is a leading provider of critical business communications from plastic card manufacturing to laser printing and electronic delivery systems. Personix operates six facilities located in Boston, MA; Hartford, CT; Houston, TX; Indianapolis, IN; Nashville, TN; and St. Paul, MN, which produce printed materials for a range of vertical markets. Two of Personix's facilities are secure personalized card production centers. In addition, Personix provides electronic archive and delivery through EPSIIA and BillMatrix.

<b>Print Production Services</b>	Personix provides a full range monochrome and toner-based color print production managed through a BÖWE Bell+Howell JETS control systems and a workflow software solution. Personix also produces plastic cards within secure production facilities. Personix clients access production reports and online services through the Personix Web Client Control Center (WC3) portal. The portal provides job tracking, inventory control, and production performance metrics.
<b>Postal Services</b>	Personix provides basic postal services including ZIP Code assignment and Move/Update services, and conducts pre-sort operations within its facilities to commingle client jobs for additional postage savings.
<b>Electronic Presentment Services</b>	Personix ClickMail provides document presentment or electronic document delivery via e-mail. The solution includes several payment options. Personix offers ClickMail as a stand-alone product or part of a larger service offering.
<b>Vertical Focus</b>	<ul style="list-style-type: none"> <li>▪ Financial Services (Brokerage, Mutual Fund, Banks)</li> <li>▪ Healthcare</li> <li>▪ Retail</li> <li>▪ Telecommunications</li> </ul>
<b>Certifications</b>	<ul style="list-style-type: none"> <li>▪ VISA Card Processing</li> <li>▪ SAS70</li> </ul>
<b>Additional Services</b>	<ul style="list-style-type: none"> <li>▪ Document imaging</li> <li>▪ Remittance processing</li> </ul>

Table 15 – Personix Service Offerings

## PITNEY BOWES MANAGEMENT SERVICES

Pitney Bowes Management Services (PBMS) is the facilities management and outsourcing arm of Pitney Bowes. PMBS provides facilities management and outsourced services to corporations that include print, insertion, and mail operations, incoming mailroom management, forms management, and other document management services. PBMS operates facilities in Shelton, MA; Hartford, CT; and Detroit, MI.

<b>Print Production Services</b>	PBMS provides monochrome production but lacks support for digital color production. PBMS uses Pitney Bowes mechanical inserters for all insertion operations. The operations support multiple print management and workflow systems as part of a robust disaster-recovery computer environment.
<b>Postal Services</b>	PBMS provides basic postal services including ZIP Code assignment and Move/Update services. Another Pitney Bowes company, PSI, is the largest pre-sort mail house in the U.S. with more than 30 locations.
<b>Electronic Presentment Services</b>	PBMS supports electronic presentment using Pitney Bowes D3 Advantage software.
<b>Vertical Focus</b>	<ul style="list-style-type: none"> <li>▪ Financial Services (Brokerage, Mutual Fund, Banks)</li> <li>▪ Insurance</li> <li>▪ Healthcare</li> <li>▪ Telecommunications</li> </ul>
<b>Certification</b>	SAS70
<b>Additional Services</b>	<ul style="list-style-type: none"> <li>▪ Business Recovery Services – disaster recovery for 37 clients</li> <li>▪ Document scanning</li> <li>▪ Print and copy outsourcing (ADF)</li> <li>▪ Online billing and payment</li> </ul>

Table 16 – Pitney Bowes Management Services Service Offerings

## RR DONNELLEY

RR Donnelley (RRD) is the largest commercial printer in North America. Its solutions include commercial printing, forms and labels, direct mail, financial printing, print fulfillment, business communication outsourcing, logistics, online services, digital photography, and content and database management. The Integrated Print Communications group consists of short-run and variable print operations in the following lines of business: book, financial print, direct mail, business communications services, and short-run commercial print (a.k.a. print on demand). The group operates eight U.S. production facilities in Boston, MA; Logan, UT; Nashville, TN; St. Charles, IL; Thurmont, MD; Windsor, CT; Winston-Salem, NC; and Grand Island, NY, and also offers services in Europe and Asia.

<b>Print Production Services</b>	RRD provides monochrome and toner-based color print production managed through a factory-control system. RRD offers personalized messaging through document composition software interfaces, and stores both messages and graphics in the software's repository. RRD provides a web-based portal for proofing, document management, dynamic publishing, and special handling, including pulls. The portal also provides access to pre-formatted reports which RRD generates and uploads for client access.
<b>Postal Services</b>	RRD provides basic postal services including ZIP Code assignment and Move/Update services. RRD utilizes CASS- and PAVE-certified software for address hygiene and sorting, respectively.
<b>Electronic Presentment Services</b>	RRD offers online presentment and payment processing solutions through multiple partnerships. Customers access the presentment as well as the reporting via RRD's client portal application.
<b>Vertical Focus</b>	<ul style="list-style-type: none"> <li>▪ Financial Services (Brokerage, Mutual Fund, Banks)</li> <li>▪ Insurance</li> <li>▪ Telecommunications</li> </ul>
<b>Certification</b>	SAS70
<b>Additional Services</b>	<ul style="list-style-type: none"> <li>▪ Traditional publishing</li> <li>▪ Compliance services for production of 1099, 1098, W-2, and 5498 forms</li> <li>▪ Card production services for production of prepaid cards</li> </ul>

Table 17 – RR Donnelley Service Offerings



## SYMCOR

Symcor is a North American provider of business process outsourcing services for the financial services industry. In 1996, RBC Financial Group, BMO Financial Group, and TD Bank Financial Group founded Symcor to combine the check, remittance, and statement production operations of Canada's three largest banks into a single commercial organization. To date, Symcor has expanded its operations and customer base to support additional vertical markets.

<b>Print Production Services</b>	Symcor provides cut-sheet and continuous monochrome print production as well as cut-sheet digital color production. Symcor meets a wide range of inserting requirements with both folded and flats inserters capable of portrait and landscape orientations. Symcor's web-based portal supports online graphics submission and personalized message management.
<b>Postal Services</b>	Symcor provides basic postal services including ZIP Code assignment, Fast Forward, and Move/Update services. The organization uses its own sorting equipment for most pre-sort processes.
<b>Electronic Presentment Services</b>	Symcor provides a complete electronic presentment and payment solution for multiple clients and hosts a document archive that is accessible through the customer portal for document search and retrieval.
<b>Vertical Focus</b>	<ul style="list-style-type: none"> <li>▪ Financial Services (Brokerage, Wealth Management, Banks)</li> <li>▪ Insurance</li> <li>▪ Telecommunications</li> <li>▪ Retail</li> </ul>
<b>Certification</b>	SAS70
<b>Additional Services</b>	In addition to print and mail operations, Symcor offers cash management/lockbox operations as well as item processing and research.

Table 18 – Symcor Service Offerings

## TSYS

Headquartered in Columbus, GA, TSYS (Total System Services, Inc.) provides outsourced payment services to financial institutions and companies offering a broad range of issuer- and acquirer-processing technologies that support consumer-finance, credit, debit, debt management, healthcare, loyalty, and prepaid services. As part of an overall services offering, TSYS provides print and mail production services to complement its comprehensive processing capabilities. TSYS provides statement and card production, electronic document storage, and customized correspondence.

<b>Print Production Services</b>	TSYS provides cut-sheet and continuous monochrome print production as well as full color inkjet and digital color print production. TSYS provides both folded and flats insertion services. TSYS offers personalized messaging creation and management as part of a comprehensive document composition offering.
<b>Postal Services</b>	TSYS provides postal services including ZIP Code assignment, Fast Forward, and Move/Update services. The organization operates and maintains sorters internally. In addition, TSYS utilizes Merlin Verification system, and has USPS personnel onsite and uses Postal One's Transportation System for the booking of flights and ground delivery of mail before releasing it to the USPS.
<b>Electronic Presentment Services</b>	TSYS Digital Document System (DDS) enables print streams of statements, letters, and reports to be automatically processed, indexed, and stored for secure online retrieval through standard Web browsers. The print stream inputs may arrive from TSYS internal systems or externally from a client or a third-party vendor.
<b>Vertical Focus</b>	<ul style="list-style-type: none"> <li>▪ Financial Services (Brokerage, Mutual Fund, Banks)</li> <li>▪ Insurance</li> <li>▪ Retail</li> <li>▪ Telecommunications</li> <li>▪ Healthcare</li> </ul>
<b>Certification</b>	MasterCard and VISA certification
<b>Additional Services</b>	TSYS provides electronic payment services to financial institutions and companies with a broad range of innovative issuing and acquiring payment technologies, including consumer-finance, credit, debit, healthcare, loyalty, prepaid, chip, and mobile payments. As part of these capabilities, TSYS offers a comprehensive range of related services such as contact center services.

Table 19 – TSYS Service Offerings

## APPENDIX – ABOUT MADISON ADVISORS

Madison Advisors exists to advance the print and electronic communications objectives of Fortune 1000 companies. Madison Advisors specializes in offering context-specific guidance for a range of content delivery strategies, particularly those addressing enterprise output technologies and customer communications.

Madison Advisors offers services and expertise primarily through near-term, high-impact consulting services. With no-nonsense, quick engagements (measurable in days or weeks, not months), Madison Advisors directly helps our clients achieve very hard and specific return on investment (ROI) related to their print and electronic communications initiatives.

Madison Advisors' analysts are dedicated to technology and market research that is delivered through near-term project engagements as well as articles, publications, and presentations. We specialize in customer communication technologies including enterprise output management, content management, customer relationship management, e-billing, and infrastructure technology.

For more information about Madison Advisors visit our web site – [www.Madison-Advisors.com](http://www.Madison-Advisors.com).