Post Composition Solutions Market Study

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The line between document composition and post composition software is starting to blur due to the fact that post composition software, once considered a tool to "fix" applications prior to print production, has now evolved into a multifaceted solution with feature-rich capabilities for enhancing and managing customer communications. With the evolution of high-speed inkjet color print solutions, post composition solutions allow fulfillment operations to take advantage of technology that efficiently manipulates and optimizes documents with the ability to merge print streams and dynamically affect content prior to output or archive.

In this research, Madison Advisors focused on the integral components that make up a post composition solution, capabilities of this software and where post composition fits in an overall customer communications management (CCM) strategy. Our research will explore the fundamental advantages that current post composition solutions offer organizations and in what way each of our study participants delivers solutions to meet those advantages and more.

The categories that make up an effective post composition solution and are explored in depth in this study include the following:

- Data/Print Stream Transforms
- Data Indexing
- Regulatory and Security Requirements
- Document and Application Re-engineering and Enhancement
- Data Optimization to Enhance Equipment Performance
- Maximize Mailing Efficiencies
- White Paper Factory and Automated Document Factory Support
- Omni-channel, CCM and the Customer Experience (CX)
- Dashboard, Tracking and Management Features

As part of the study, Madison Advisors conducted in-depth interviews with the six participants, covering each company's value proposition where post composition solutions are concerned, the differentiators of each participant's solution and how each provider continues to advance its technology to meet the continued changes in the marketplace.

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A post composition solution is generally defined as a tool that is utilized to modify and augment the production data streams within a CCM workflow without the need to reprogram source applications. Post composition solutions are designed to optimize equipment performance, boost print data, automate manual processes, maximize postal savings and deliver overall organizational cost savings. The ability to deliver faster process improvements enterprise-wide (and across all applications), while still affording control on the production floor, makes adding post composition a critical component in the quickly evolving CCM marketspace.

In the past, post composition solutions were programming intensive, requiring complex coding to make changes to an application. As a result, many enterprises initially turned away from adopting early post composition solutions due to the high level of technical skills and resources required. Organizations that did adopt the technology found limited success due to the software's inability to re-use applications. When processing different types of jobs, each application was dependent on the incoming data stream. Today, post composition solutions are much easier to integrate within the workflow and do not require a high level of programming experience to do so.

It is helpful to understand where post composition fits within the CCM strategy as we frame the conversation surrounding its capabilities. In Madison Advisors' Hosted Managed Services Market Study, we detailed the seven essential components of the CCM platform. Post composition is the fourth component of the HMS platform and resides in the output of the production environment, strategically positioned to quickly add value to multi-channel delivery, data optimization, messaging and management tools.
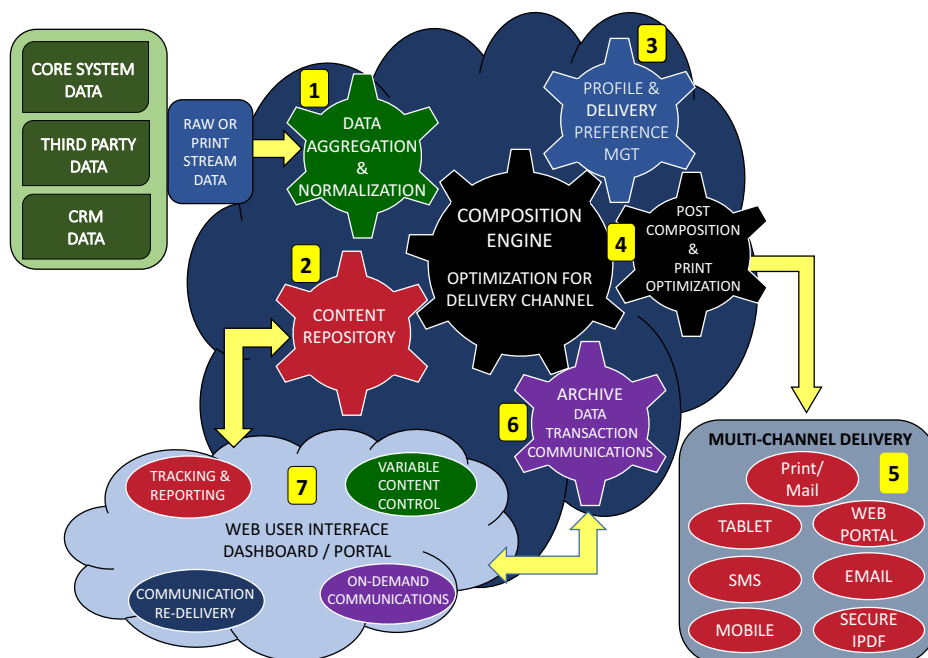

Figure 1- Madison Advisors' Hosted Managed Services Platform Components

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The document composition process is what one typically thinks of when discussing CCM and organizations have invested a significant portion of their budgets in CCM platforms. During the composition step, data and variable content are combined with templates according to pre-determined business rules to create customer communications. Communications are optimized for the delivery channel(s) based upon the recipient's pre-selected delivery preferences. In addition, an archived copy of all communications is generated and sent to the archive of record.

Following the composition of the document, there is a post composition step that can be deployed where additional optimization is done for a variety of outputs. Post composition tools—known as middleware—change the production workflow by making it possible to change documents and/or alter the data stream in the space between their origination and production. Historically, onboarding cost constraints drove post composition solutions to be architected as a one off to fix just-in-time problems. Production teams didn't visualize a "utility" or enterprise approach that could accommodate more than one application or PDL type at a time.

As post composition solutions have evolved, so have their functionality and ease of use. The introduction of graphical user interfaces (GUI) has made it easy to perform the most complex types of document changes with only minimal use of scripting. Using a GUI, you view the document, select the specific areas of a document you want to work with and then apply modifications that are independent of the original data stream. Because these tools are object oriented, you can easily access and define the elements you need, such as page number, address block, barcode and account number, and then create a variety of new conditions. By keeping this part of the process separate from the primary document composition step, post composition solutions create more flexibility in the print model in that separate processes can be built for each print partner to facilitate an easier transition between them and significantly reduce regression testing.

Most composition programmers rarely use post composition and vice versa. As organizations adopt forward-thinking principles of creating content without formatting rules, then composition can focus on the communication devoid of rendering rules, and post composition can be engaged to format and optimize batches just in time to accommodate infrastructure requirements and user preferences. In the new omni-channel world and with the increase in digital engagement and devices, this path forward is being considered more prominently. It is an evolution that will help eliminate the long-term support issues associated with maintaining multiple versions of composition tools. Content can be created and stored as objects and assembled and rendered just in time by the latest tool, removing the issue of having applications dependent on a given technology or product.

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DATA/PRINT STREAM TRANSFORMS

Despite the cross over between composition and post composition solutions, most large companies do not commingle these solutions. If organizations choose to create content without formatting rules, then composition is typically focused on the communication itself, without the restrictions of rendering rules. Post composition tools are subsequently engaged to format and optimize batches in a just-in-time mode to accommodate both infrastructure requirements and user delivery preferences.

A number of industry-standard data streams are present in organizations today—including AFP, Xerox LCDS and Metacode, PCL, PS, PDF and others—that represent a wide range of platforms organizations must manage. Each has distinct characteristics and benefits for different types of applications. This presents a significant challenge for implementing document enhancements since, historically, customers have been limited to making changes to singular applications as the tools available were not data stream independent.

Today's post composition solutions provide a bridge across all applications with their ability to convert all the input data streams into a consistent page format (like PDF) regardless of input file type. This way, companies can engage a single application with all the various data streams they manage. This data stream independence becomes most valuable when the changes needed involve many different applications across the enterprise.

In our research, we found that participants have differing philosophies on how data streams should be normalized. For example, Pitney Bowes' strategy for transforming data streams involves adding its PlanetPress® Objectif Lune product to handle the data transformation of legacy platforms. All other participants in this study support PDL conversion to PDF and HTML5, but aggregate various file types by converting any supported PDL to a unique page format while preserving file integrity and production processing speeds.

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Data indexing is the ability to uniquely tag each document so that it can be tracked through the various steps in the production process. Organizations track individual documents to ensure compliance with legal and regulatory requirements. Print and mail operations need the tracking capability to locate where each document is in the production process. Mining data elements within the document itself, along with associated data elements contained in a variety of external databases, makes it possible to add value to customer communications while ensuring production integrity and regulatory compliance.

Data indexing within post composition is the basis for all automated or templated enhancements, including logo replacements, barcode replacement, text changes, imposition control and job splitting, and it gives customers the ability to enable postal presort/optimization/address cleansing activities and to enable piece level tracking. Another important benefit of the data indexing component of post composition includes the ability to recall information out of the archive for reprint or customer service activities, including self-service portal interactions and other e-presentment processes. Data indexing is also ideal for driving real-time decisioning on customer channel preference and messaging content.

The value of data indexing is also important when delivering documents in accessible formats for individuals who are blind, partially sighted or have cognitive impairments is a requirement. The U.S. Rehabilitation Act, Section 508, requires businesses to adjust the way they deliver their services so that people with disabilities can access and use them. Other examples of international legislation include the UK Equality Act, the Accessibility for Ontarians with Disabilities Act (AODA) in Canada and EN-301-549 in the European Union. Tighter legislation that puts more onus on organizations to make documents more widely accessible is underway in many other countries as well.

Post composition solutions are well-positioned to assist organizations in meeting compliance requirements for accessible document creation. The ability to utilize indexing templates makes it possible to tag transactional documents with accessible elements at the post composition stage of the production process. With more demanding security and regulatory requirements forcing companies to reassess their ability to comply, implementing a post composition solution allows for the utilization of powerful indexing templates that target and tag data for ingestion into user-accessible technologies. The flexibility of supporting documents that are currently archived, or handling this process before documents are stored, makes it possible for organizations to create accessible documents as needed—a major advantage when trying to comply with ever-evolving regulatory requirements on accessibility. It also provides some protection against future regulatory changes.

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While most participants provide some form of accessibility features, both Crawford Technologies and Solimar Systems offer solutions that deliver fully accessible documents to comply with Section 508 of the U.S. Rehabilitation Act of 1973, as well as other mandates.

REGULATORY AND SECURITY REQUIREMENTS

Understanding the security measures inherent in the software is important for organizations considering a post composition solution. There is no argument today on how critical it is for corporations to keep their information secure and confidential; and customers expect this as a baseline for conducting business. However, challenges can occur when, despite the fact that customers have high expectations for security features, they become easily frustrated when presented complicated login and security protocols. Therefore, it is critical that companies balance the customer experience with the need for tight security.

Important security features embedded in a post composition solution include the ability to convert information or data into a code to prevent unauthorized access. All vendors interviewed offer some type of PDF encryption to keep documents secure in the workflow, as well as role-based security features that restrict viewing and access. Going one step further, redaction capabilities where specified confidential information is randomized and scrambled to replace the confidential data is also an important feature.

DOCUMENT AND APPLICATION RE-ENGINEERING AND ENHANCEMENT

At its core, post composition allows companies to improve the utilization of their legacy applications without the extensive coding required to make changes upstream. Most current post composition solutions are built around an intuitive user interface which allows these improvements to be implemented on the production floor without the need to engage IT resources. These improvements are often realized as both internal and external benefits because they reduce internal costs and free up IT resources, but also because they are able to provide significant improvements to critical customer communications.

Customers are more demanding than ever when it comes to the sophistication of the communications provided to them by their vendor of choice. Customer retention and satisfaction is directly linked to critical indicators that post composition tools can impact, such as the development of a hybrid document that combines a traditional transactional document with variable messages or offers that target customers' unique purchasing patterns. Post composition tools include this transpromotional functionality so implementation can be fairly straightforward. This makes it possible for communications to be produced faster and more cost effectively since their creation can be done without complex programming.

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With the cost of full color digital printing equipment now more affordable, color is now a must-have for modern transpromotional documents. However, moving from monochrome to color with legacy print streams can be costly and time consuming. As a result, companies are often slow to make the most of their new hardware investments. Post composition tools have the ability to repurpose legacy applications with color to take advantage of the latest printing technology.

Many companies miss important cost-cutting opportunities because printing and mailing environments often function in an isolated fashion. The prevailing focus is typically limited to getting documents out of the print queue or moved off of the loading dock. This "over-the-wall" approach does not encourage operational efficiency and collaboration. While print and mail production and delivery will always cost more than electronic alternatives, post composition tools can help control costs in important ways.

Here are five:

Concatenate small jobs – Small jobs cause printers to start and stop, which dramatically reduces the throughput on mail inserters and complicates the mail piece tracking process. Post composition tools make it possible to group multiple jobs into a single stream for greater processing efficiency. Banner pages of existing jobs can be kept or eliminated or a new banner page for the entire set can be created. Integrity marks and intelligent insertion files can be generated and added to the entire set.

Split large jobs – Splitting large jobs allows operations to better balance the workload between printers and inserters to maximize their overall production throughput. Post composition tools can split jobs using a variety of criteria: You can segment print jobs by the number of pages, the number of documents or any combination of parameters with confidence and flexibility. The system will make sure the inserter marks and integrity barcodes are properly generated for each output run regardless of the sort scheme.

Simplex to duplex – Many companies still print high-volume applications in simplex. Having the ability to move from simplex to duplex printing will lower page counts, cut paper and envelope costs, shorten printing and insertion run times and achieve dramatic postage savings. Using post composition tools to convert simplex documents to duplex without the need for original application reprogramming can represent significant cost savings within an organization. In addition, clients can add digital inserts/onserts and messaging, pages can be renumbered, and all the insertion control marks can be updated automatically.

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Automated reprints – Reprints are a costly and time-consuming task for most print and mail operations. The process often requires multiple levels of support to reprocess the original documents. By enabling the automation of the entire reprint process, post composition solutions provide tremendous operational savings with minimal human intervention. Machine-readable data files can be used to drive finishing and reprint workflows for documents that were damaged in fulfillment. Monochrome applications using pre-printed shells can be sent to full color devices to produce those documents with the variable information using digital color overlays.

Update and add finishing and tray call controls – Post composition solutions make it possible to insert finishing commands such as tray selection, plex, stapling and binding information based on page numbers or indexed page content, eliminating complicated programming upstream at the application.

DATA OPTIMIZATION TO ENHANCE EQUIPMENT PERFORMANCE

Post composition solutions vary on their ability to optimize data, which directly affects production equipment performance. With the installation of color inkjet printers on the rise, organizations have found that particular attention needs to be paid to conditions that may hinder the performance of this technology and, subsequently, render a significant investment less than optimal.

There are advantages that post composition solutions bring in relation to concatenation of smaller jobs. Since inkjet printing systems tend to perform optimally when handed larger print jobs, concatenation not only improves productivity, but it also protects a company's investment. Beyond concatenation, the ability to combine resources, optimize color, remove unwanted objects, optimize images and capabilities around consolidating subsetted fonts and correcting structural issues that cause slow processing by digital front ends are all desirable.

Some vendors look to flatten the PDF file and then normalize the PDF to eliminate any duplicate/unnecessary resources, which also makes the PDF file smaller and more efficient. This is similar to Solimar's ReadyPDF® Prepress Server™ and Racami's Alchem-e™ solution where PDFs are reconstructed to combine reference XObjects, address subsetted fonts, flatten transparencies and remove other inefficiencies that cause printers to slow down. PDFs can also be down sampled to lower resolutions for electronic delivery and web viewing. Solimar Systems delivers significant time and cost proficiencies by utilizing its PDF cleansing and workflow optimization software platform, ReadyPDF Prepress Server. ReadyPDF is designed to overcome the challenges customers encounter with many Raster Image Processor (RIP) systems. It fully optimizes PDF files for print and digital delivery or archive and simplifies integration into existing workflows, providing advantages for the end user.

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Other examples of adding value for improved productivity can be found in BlueCrest's Output Manager solution, which has an integration into Enfocus's PitStop Server that provides the ability to pre-flight the PDF for high-speed printing. Additionally, Crawford Technologies utilizes extensive configuration and implementation capabilities to provide the flexibility needed to optimize PDFs for both performance and size to meet specific device and operational requirements. This ensures operations can produce high-quality results at speed to maximize asset utilization and operational efficiency.

MAXIMIZE MAILING EFFICIENCIES

Implementing Intelligent Mail® Barcode (IMb) across multiple applications can seem complex. The effort touches all applications across the enterprise, regardless of whether they come from a legacy application or another document composition environment and each individual application requires modification. As a result, without a post composition tool, the task of implementing IMb requires extensive reprogramming and may likely involve many applications and thousands of lines of code.

Post composition solutions can apply Intelligent Mail Barcodes right on the production floor. IMb offers the opportunity to enhance and optimize your document production environment, making it possible to "normalize" your output in ways that can save money and build systemic efficiency. Another benefit is tracking; organizations can implement an integrity barcode—1D, 2D/Datamatrix or even use the IMb—to establish a unique document tracking number and allow your operations to monitor the location and status of each document being processed. Generally, post composition integrates or interfaces with address preparation software (CASS, PAVE, NCOA) to cleanse mailing addresses and reduce the impact of undeliverable mail.

Implementing post composition tools, companies that optimize their existing print streams to automate mail processing improvement via "householding" are able to deliver different documents intended for the same household in a common envelope. Householding allows you to dramatically reduce mailing costs because you are mailing a fewer number of mail pieces to the same address, thereby saving on postage.

Electronic commingling is another opportunity that results in additional savings and efficiencies and allows organizations to leverage investments in printing technology. Job merging, often used in combination with a postal presort package, greatly enhances efficiency by commingling once-disparate production jobs together to make the best use of production equipment. Rather than singular printing and mailing runs, jobs from different applications and customer segments are merged and sorted to facilitate more efficient production. This makes it possible for high-speed, digital color printers to maximize their flexibility and speed and leverage

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automated inserters and sorters for maximum processing efficiency and to reach higher zip code concentrations. Addresses are cleansed and updated to ensure the most accurate processing.

Finally, post composition is ideally suited to extract content for sorting and cleansing software. This function is designed to organize documents into postal order and remove undeliverable mail pieces to leverage additional postal savings and improve the percentage of delivered mail pieces.

WHITE PAPER FACTORY AND AUTOMATED DOCUMENT FACTORY SUPPORT

WHITE PAPER FACTORY

Post composition solutions can transform legacy shells and imprints to full color digital forms without the need to overhaul existing workflows, document composition programs or design templates. A long-term communication strategy may require the need for migration from legacy architectures and composition toolsets to the latest CCM technologies to take full advantage of the white paper manufacturing and multi-channel output. Here is where post composition technology can improve overall productivity and significantly reduce costs without engaging expensive IT resources.

AUTOMATED DOCUMENT FACTORY (ADF)

Post composition supports corporate objectives to manage the creation and delivery of high-volume documents through the concept of the Automated Document Factory (ADF). An ADF is generally defined as a strategy for processing high-volume documents using factory production techniques. Characteristics of a classic ADF include minimal manual intervention and the aim to bring about lower costs, higher quality, greater control, advanced levels of automation and increased visibility into processes and greater analysis. Important factors that make up this concept are complete mail piece tracking, integrated data quality and integrity checks and real-time performance auditing and reporting. The ADF includes unique features for the complete centralized lifecycle management of all document resources from billing data, formatting, printing, post processing, email, fax and web delivery to archiving.

One of the key indicators in choosing a post composition solution is the presence of a white paper factory or automated document factory. For most organizations, factory-like efficiency and piece level tracking is difficult to implement successfully. Post composition tools available today allow organizations of all sizes the ability to implement features such as piece level tracking, householding, job sorting and merging and a variety of print/ mail production enhancements that would otherwise require hours of recoding and specialized programming expertise.

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BlueCrest software played an essential part in the early implementation of ADF. It uniquely offers expertise across print and mail production to ensure optimization of the process and the desired outcomes including greater efficiency, accuracy and integrity. Sefas has also consistently been considered an industry leader in both ADF and white paper factory rankings.

The core objective of omni-channel customer communication management is to consistently generate and deliver content on all channels while maintaining and sharing awareness of the customer journey.

OMNI-CHANNEL, CCM AND THE CUSTOMER EXPERIENCE (CX)

The way organizations communicate with customers affects retention, customer lifetime value and the overall cost of servicing that customer. While customers today are more demanding in their expectation to access real-time information or get the support they need quickly and easily, they have differing expectations on how they choose to receive this information. While some customers may prefer to receive their critical account information electronically, there are still many that prefer communications in paper format.

The ability to rapidly enable a digital experience represents a unique challenge for many organizations today. Often, these applications have been developed in disparate composition systems, so the ability to extract summary data for delivery through mobile, text and email delivery (and do so in a format that is consistent to the end user) can be time consuming and expensive if you have to go back to the original application(s). Since customers tend to continue to use their preferred method of retrieving information while they explore the new digital delivery options, the ability to provide the same content uniformly on all channels has become critical to a company's brand. Organizations are looking to post composition solutions to support their ability to maintain consistency and coordinate migration efforts.

Post composition makes it possible to implement enterprise-wide transformation by leveraging existing solutions. This not only allows organizations to leverage prior investments in technology, it also frees up expensive programmer/analyst time since much is accomplished on the production floor.

As digital communication alternatives take hold, organizations are constantly evaluating ways to drive print suppression because it represents an opportunity to reduce costs. Additionally, COVID-19 has greatly accelerated the shift to contextual digital engagement. Internal and external customers are now negotiating the communications landscape with limited physical contact, which has disrupted the way they are conducting business.

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Madison Advisors believes organizations were already moving to utilizing a more distributed, remote workforce. COVID-19 has simply accelerated this. A more distributed workforce creates more access points for customer communication creation and delivery, and it has created an increased need for post composition software solutions to centralize and normalize communication production and provide an avenue for quickly handling print-ready jobs from other sources in production print and mail environments.

DASHBOARD, TRACKING AND MANAGEMENT FEATURES

During this study, Madison Advisors received mixed responses with respect to dashboard capabilities specific to post composition software offerings. Most participants acquire dashboard and tracking functionality as a component of composition software solutions, which provides a perfect example of how composition and post composition overlap in certain areas. We did observe tracking and management features offered as a direct component of post composition, but it was mainly reserved for mobile dashboarding and management.

Dashboard capabilities include full visibility into the entire production workflow through a thin client, browser-based user interface or, in some circumstances, a mobile visible dashboard. Business users can view the status of all jobs from the point of file receipt through delivery.

In addition to job-level tracking, piece level monitoring is also offered to allow documents to be pulled and rerouted, destroyed or redelivered. Standard reports and the ability to customize reports are provided through a reporting module. Business intelligence tools may be integrated to allow clients access to underlying data for data analytics purposes.

Important functions that include job batching and scheduling control, system-wide alerts, tracking, reporting and activity across multiple sites are desirable features within a post composition solution. Production managers are constantly monitoring the work process to ensure SLAs are met and issues on the production floor are assessed and resolved quickly. To accomplish this effectively, management needs to be able to see the entire workflow end to end in an easy-to-understand format implemented across platforms that afford highly visible and easy-to-understand metrics displayed in real time.

Having mobile capabilities that support the visibility of secure and configurable dashboards should become even more important during this period of remote working due to the COVID-19 pandemic. API integration and JDF/JMF compatibility are keys to a successful mobile dashboard implementation. This is a relatively new feature that is supported by a limited number of solution providers and may be a key consideration for anyone interested in implementing post composition in the immediate future. Solimar Systems' mobile visibility

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dashboards check all the boxes discussed above and include system-wide alerts, language localization, job batching and scheduling controls.

POST COMPOSITION SOLUTIONS ANALYSIS

Madison Advisors has identified post composition as a cost-effective solution to assist organizations in normalizing disparate composition programs and legacy data streams to allow for reliable delivery and enhancement of client communications across omni-channel distribution channels. Even if some of the functionality of a post composition solution overlaps that of the core document composition solution(s), the cost value benefit of considering post composition to address rapidly changing customer expectations more easily is worthy of serious consideration. Ultimately, a corporation's success is tied directly to satisfying its customers' requirements and—as customer requirements and expectations increase—it is imperative that organizations understand changing expectations and keep pace with the rate of change to ensure client retention, which is directly related to an organization's profitability. Post composition solutions afford organizations an opportunity to automate a high percentage of production processes, manage diverse workflows and maintain document integrity from manufacturing through omni-channel delivery.

When looking for a solutions partner, solid technology certainly matters, but the combination of technology, services and people that support the implementation make for the best implementation experience. Finally, support after implementation is critical to the ongoing success of any post composition solution. Training and flexible on-line and on-site courses are all indications that your solutions provider is committed to your long-term success.

When we began our assessment of post composition solutions providers, we identified the critical elements of what we believed to be part of an effective solution.

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Critical Components	BlueCrest	Crawford Technologies	Pitney Bowes	Racami	Sefas	Solimar Systems
Data/Print Streams Transforms	●	●	◕	◕	●	●
Data Indexing	◑	●	◕	◕	●	●
Regulatory and Security Requirements	●	●	●	●	◕	●
Document and Application Re-engineering and Enhancement	●	●	●	◕	●	●
Data Optimization to Enhance Equipment Performance	●	●	◕	◕	●	●
Maximize Mailing Efficiencies	●	●	●	●	●	●
White Paper Factory and Automated Document Factory Support	●	●	◕	●	●	●
Omni-channel, CCM and the Customer Experience (CX)	◑	●	◕	●	●	◕
Dashboard, Tracking and Management Features	●	●	●	●	●	●

Legend: Significant ● ◕ ◑ ◔ ○ None

Table 1- Madison Advisors' Assessment of Participants' Critical Components of Post Composition Solutions

A summary of the study participants' market differentiators and company overviews follows. These should be considered as you look to match partner capabilities to your own individual customer communication objectives.

BLUECREST

BlueCrest currently has clients primarily in the healthcare, insurance, financial services, government and service provider markets. A breakdown of the client base is as follows: 50% service providers, 20% government, 15% healthcare and 10% insurance. BlueCrest has more than 500 installations of its output management/post composition solutions and 80% of BlueCrest's clients are based in North America. BlueCrest is very strong in the print and mail service provider market and has solutions installed in most of the top 200 worldwide. The split of installations by segment is very close to 50/50. Worldwide, 80% of its clients fall in the Tier 2 or 100M to 300M images per year segment of the marketplace.

The majority of BlueCrest solutions are focused on physical print and mail, however many of them play a supporting role in digital communications. Particularly now, when work from home adoption has exploded, integration and coordination between digital and physical communications is even more important. The OfficeMail component of the BlueCrest solution routes desktop mailings through either a production and print and mail process or through a variety of digital delivery options.

The end-to-end integration of BlueCrest's solutions across all process steps in the print and mail workflow is the company's key differentiator. This includes a variety of software and hardware components to collect and prepare documents, to print, insert and sort them and software to monitor and manage the entire process as a holistic operation, eliminating the "islands of automation" approach that is typically used. With understanding and control of the entire process, actions can be performed early in the process for greater optimizations downstream. The integrity of every document is coordinated from inception through production and out to delivery and can be tracked and validated at every step along the way.

The ultimate flexibility and configurability of the BlueCrest solutions allow them to be adapted and integrated to any workflow. Modular designs allow for bits and pieces to be mixed and matched along with other processing components to build a great number of unique process flows. This makes it possible for a solution to adapt to print and mail applications across all industries ranging from marketing mail through highly regulated and secure applications like vote by mail ballot creation and processing and everything in between.

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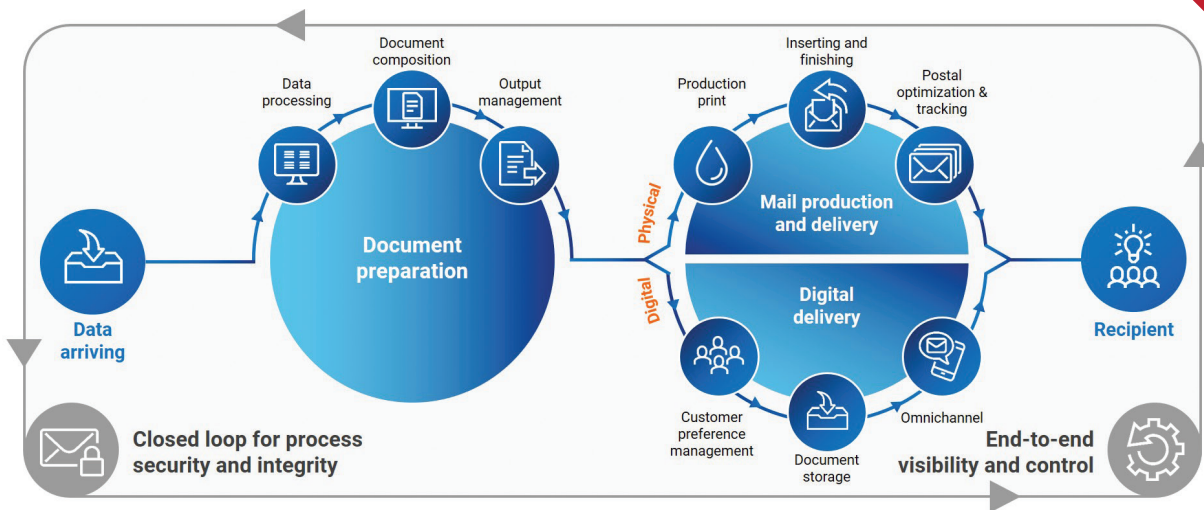
Figure 2 - BlueCrest's End-to-end Solutions Across Print and Mail Workflow

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Crawford Technologies, Inc. (CTI) was founded in 1995 and has grown into a group of multiple companies with more than 150 employees and is experiencing double-digit growth, growing at 20+%/year. Offices are in Toronto, Ontario, Canada; Potsdam, NY; Boulder and Fort Collins, Colorado; and London, England.

The CTI post composition software portfolio is comprehensive, horizontal and suitable for all high-volume transactional output (HVTO) applications. Its primary verticals are insurance (30%), banking (25%), print service providers (25%), utilities and telcos (10%) and government (10%). Crawford Technologies' installed base includes:

- 17 of the top 20 North American-based insurance companies

- 7 of the top 10 North American banks

- 6 of the top 6 U.S. health insurance providers

- Major departments in the U.S. Federal government and Canadian government

- Major departments in state and provincial government

- All major HVTO print service providers

Crawford Technologies' flagship post composition solutions include Operations Express, a product that delivers a straightforward method for re-engineering and manipulating existing print streams, and PRO Conductor, software that orchestrates customer communications creation and delivery within an end-to-end workflow. Both customer communication solutions are provided on multiple platforms to address HVTO, commercial and digital environments. They are available for mainframe and server environments across nearly every existing operating system.

The company has extensive experience working with high-speed inkjet printing and finishing technologies in high-volume transactional environments. As middleware to enhance legacy environments or net-new infrastructures, Crawford Technologies has solutions integrated into every customer communication composition environment tool, printer, mailing/finishing and mail hygiene hardware and software vendor. Strategic alliance partners like BlueCrest, Canon, Precisely (formerly Pitney Bowes), IBM, Bell and Howell and many others have deployed and integrated Crawford Technologies' solutions with theirs to help support their largest and most complex customer environments.

Crawford Technologies is an acknowledged leader in the field of document accessibility and is one of the few vendors to offer a complete suite of solutions that address both transactional and static documents, as well as all compliant accessibility formats, including the physical accommodation formats. Its AccessibilityNow®

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platform provides a comprehensive suite of capabilities for making documents accessible with solutions for automated tagging of transactional and static documents, as software for on premises and cloud deployments. The company also stands alone in that it provides a full range of services that include braille outsourcing, training, application migrations, manual remediation and quality assurance. This ensures the post composition solutions their customers are implementing can be upgraded easily in the future to support accessibility regulation compliance.
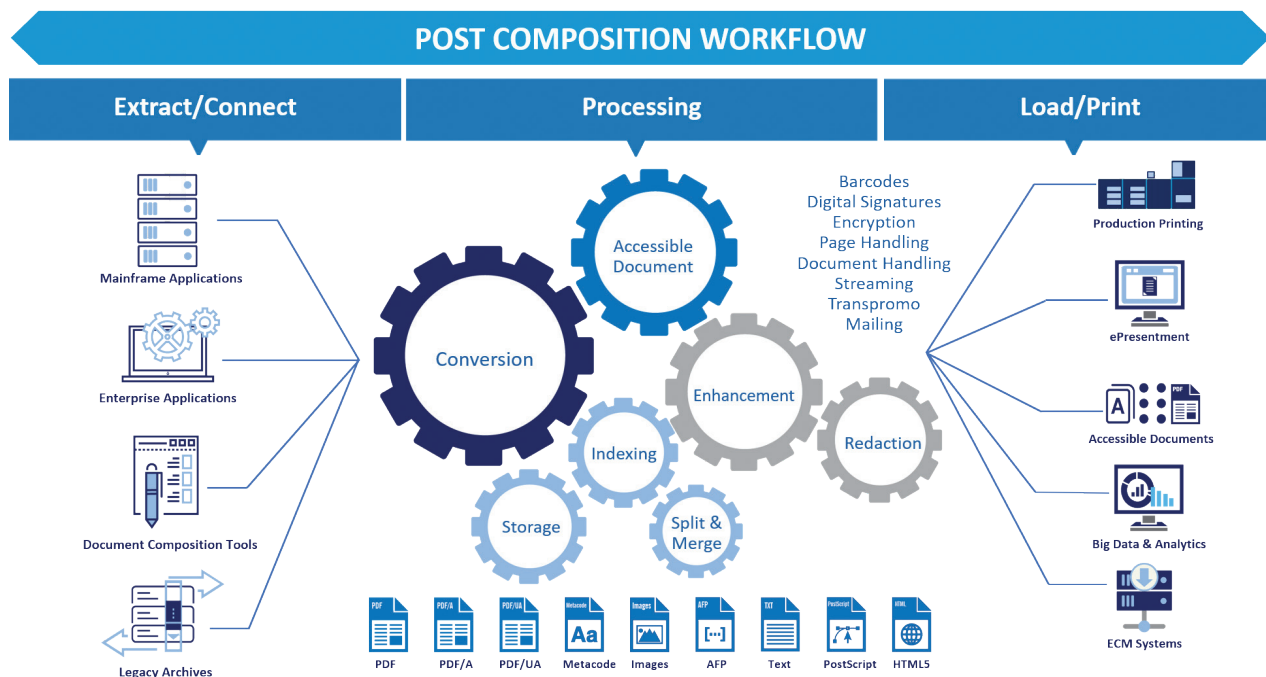
Figure 3 - Crawford Technologies' Post Composition Workflow

As a global company, Pitney Bowes serves all verticals. Pitney Bowes' current install base is 80% in insurance, finance, utility, healthcare, manufacturing and administrative services and is evenly spread across those verticals. Pitney Bowes has 1000+ clients utilizing their post composition solutions. They offer a SaaS solution, Relay®, and an on-premise solution, PlanetPress, which Pitney Bowes resells but of which it maintains 100% control over design and implementation. In some instances, Pitney Bowes deploys both Relay and PlanetPress Relay and is also the central SaaS hub to its Mailstream On Demand outsourced print-to-mail solution. In this document, we will refer to its post composition software as "Pitney Bowes" when either Relay or PlanetPress best suits the context or will call out "Relay" and "PlanetPress" when appropriate.

For post composition software, Pitney Bowes typically supports enterprise in-plants. Since divesting its former DMT business unit (now BlueCrest), Pitney Bowes is focused on selling its more modern post composition software to these markets, especially with its ad hoc mail capabilities. Typically, Pitney Bowes' post composition software solutions have been bundled or wrapped around hardware as an added value to help differentiate the company's hardware sales (printers and folder inserters).

By offering both SaaS and on-premise post composition tools, Pitney Bowes is able to participate in any IT environment. Its post composition products handle both simple document tasks and complex workflows. Additionally, Pitney Bowes provides a unified cloud-based print and digital solution so clients can future proof not just their documents, but their entire workflow, by optimizing the workflow to produce mail and digital communications in house or move work to the cloud (its outsourced print-to-mail network) as necessary for overflow or redundancy, particularly in this COVID-19 environment.

The Pitney Bowes method for preparing for digital output differs from other platforms in that while they offer digital output like e-invoicing, email, SMS, post-to-web and archive since they don't know which digital channel consumers will ultimately choose in the end, Pitney Bowes' post composition software digitizes every document, capturing what is referred to as a reference file from the document. This helps add integrity to the physical workflow and integrates with USPS services and it also allows organizations to send the file through any digital channel available now or in the future.

Pitney Bowes' post composition offerings (Relay and PlanetPress) are not limited to PDF input only. Having the flexibility to offer SaaS on premise allows workflow flexibility and pricing flexibility. This means whether a business is mid-market or enterprise, sending a few thousand documents a month or hundreds of thousands of documents a month, Pitney Bowes has a post composition solution. Pitney Bowes has seen post composition software as a tool for IT itself to use. The company views the primary buyer need changing from document design and enhancement to making documents digital-ready for future proofing and, more importantly, giving clients added visibility and control of their customer communications.

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Pitney Bowes Customer Communication Management workflow
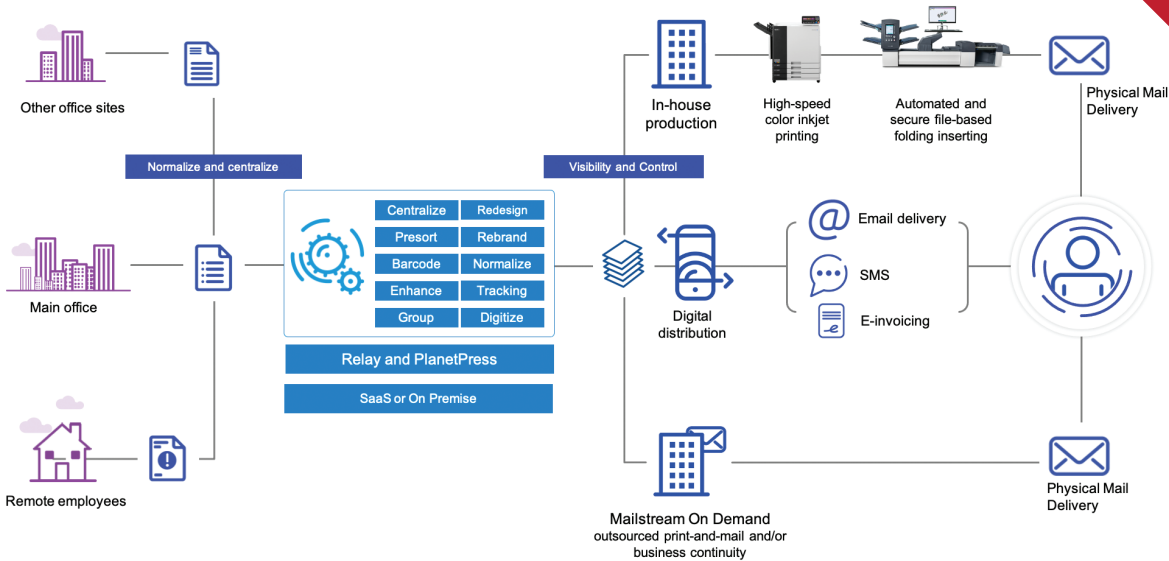
Figure 4 - Pitney Bowes' Customer Communication Management Workflow

Racami has long played a part in providing software and services for printing and electronic distribution of documents. The Alchem-e platform has a name and address database for managing consumer preferences, storing consumer characteristics, defining product types, orchestrating communications across channels and storing communication histories. Integrating disparate systems to create better, more centralized systems that advance the scalability of operations is a big part of digital transformation and Racami is a skilled integrator. The Alchem-e system provides value by creating a master system out of the components customers are already using to get their work out the door. This master system solves all sorts of workflow issues and provides companies capabilities to perform print, email, SMS, voice, bill pay, web presentment and more.

Racami's view of post composition is that jobs/documents are changed after original composition. It is rare that Racami pursues engagements where it is only addressing post composition tasks. Integration technology makes the Alchem-e post composition module uniquely compatible, as well as aware of upstream and downstream activity and what's happening with third-party products that might be part of a post composition workflow. This supports better visibility and management of the process.

Racami's Alchem-e solution relies on PDF processing technology that is widely used by software and hardware vendors in the industry. These are mature tools with broad capabilities that are wrapped into the Alchem-e user experience. The solution offers thorough and complete font handling and support for subsetted fonts and varied font families.

Alchem-e has a database standard that supports CCM and direct marketing. Many post composition steps can be done faster in the database and the data is stored there forever as evidence. A good example is that an original address block might be removed from the PDF pages and replaced with a new postal-cleansed address. Both addresses are stored in the Alchem-e database. In addition, Alchem-e uses a browser-based user interface with permission-based control. It delivers granular security for what changes can be made to documents along with other security features available to support highly regulated applications.

The Alchem-e platform has a name and address database for managing consumer preferences, storing consumer characteristics, defining product types, orchestrating communications across channels and storing communication histories. Integrating disparate systems to create better, more centralized systems that advance the scalability of operations is a big part of its digital transformation.

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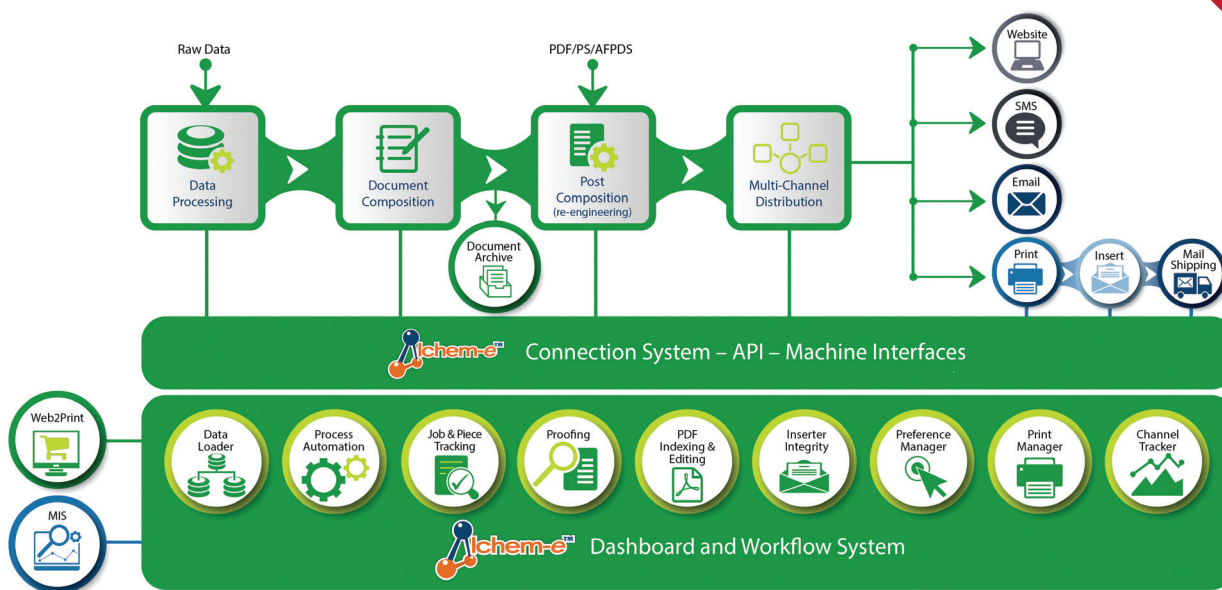
Figure 5 - Racami's Dashboard and Workflow System

Sefas provides solutions to print service providers, business process outsourcers and enterprise organizations in the healthcare, banking, financial services and utilities, as well as state and government agencies with a 50/50 split between service providers and enterprise organizations. Sefas provides more than 130 customers with its solution. Its customer base includes some of the largest production centers in the world, many with volumes exceeding billions of transactions annually. Capability and capacity are two very distinct qualities and the scalability of the company's various products in the market reflects this. In the post composition market, this is a distinction for Sefas as many solutions from other suppliers were implemented on a smaller scale.

According to Sefas, digital transformation is a high priority across all the industries the company serves. With multitudes of applications in existence, it's impractical to think all can be migrated in an acceptable period of time or cost. Post composition is a magic bullet in this respect and Sefas has created a digital-specific utility that can quickly and effectively convert physical communications to be properly displayed on digital alternatives at the scale and capacity demonstrated for its print production customers. This utility has a simplistic user interface which allows business and/or operations teams to quickly build templates that can accommodate hundreds, if not thousands, of applications.

Sefas believes customers should also apply the preference and channel formatting to reduce the work effort and required operational knowledge of the composition team. The result would be more rapid development of independent content that could be driven to any channel. This way preference and content, as well as dynamic messaging, could be administered centrally and enable operations to centrally orchestrate omni-channel communications. This is the ultimate goal for many enterprise lines of business, seamless orchestration of content across an omni-channel landscape to increase continuity to drive customer satisfaction and retention.

The Sefas platform, Designer, is a composition and post composition solution for print, email and SMS. This allows users to benefit from the ETL, complex logic, table creation and other features of composition with the rendering and optimization capabilities of a post composition solution.

Sefas focuses on existing infrastructure and applications and can integrate with legacy and end state environments. Sefas looks to leverage existing infrastructure where possible and supplement with new as required. The majority of applications will remain the same and a select few will be migrated to an end state solution.

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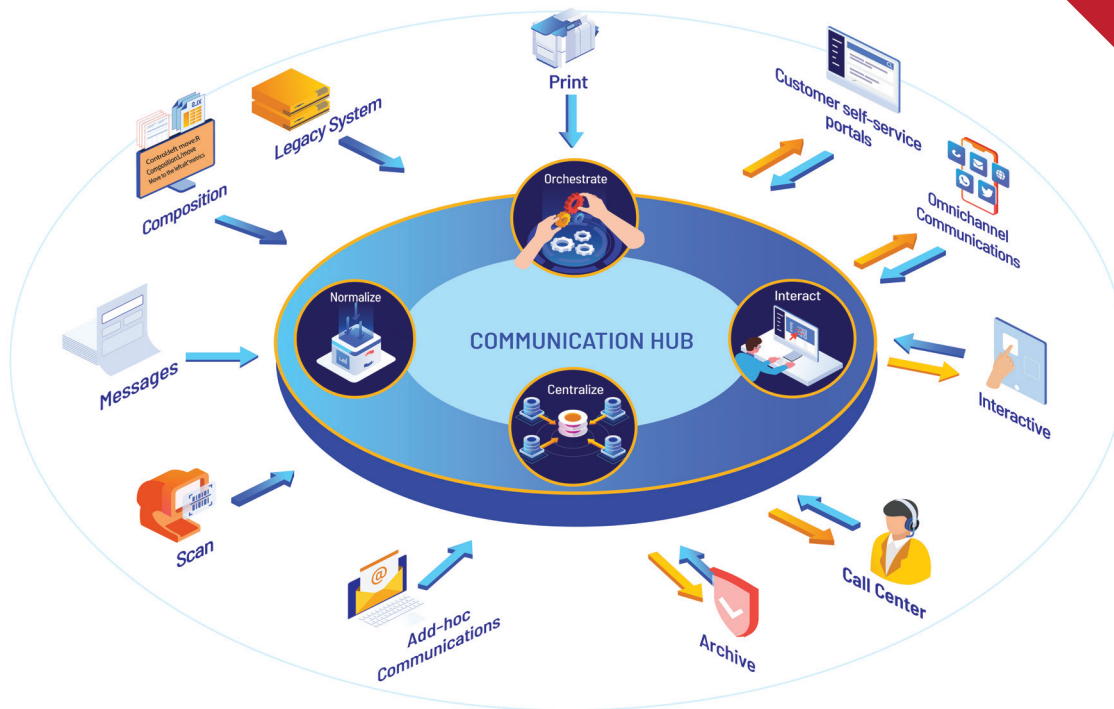
Figure 6 - Sefas' Harmonie Communication Suite

Since 1991, Solimar Systems has delivered post composition solutions to a global client base numbering in the thousands and has a diverse portfolio of users with PSPs and enterprise in-plants as large components of this portfolio.

Solimar Systems traditionally provides workflow solutions that serve a number of verticals including financial services, insurance, healthcare, direct mail, manufacturing and government. Since its inception, Solimar Systems has been a leader in post composition solutions. The company continues to expand its capabilities to help companies leverage legacy infrastructure and content streams while taking advantage of state-of-the-art inkjet and digital communication technologies.

Solimar Systems has differentiated itself from other post composition products by delivering robust print stream conversion and enhancement with sophisticated workflow management and extensive bi-directional communication support for host computers and print devices, making Solimar one of the few post composition solution providers that can control and drive print devices from multiple vendors in one print environment.

The Solimar Chemistry™ platform provides flexible, real-time control and reporting across a broad spectrum of printers and DFEs. This flexibility provides unique leverage for users with heterogeneous printing environments. Chemistry optimizes content for virtually all high-volume printers and finishing equipment, manages service level commitments, tracks jobs and individual mail pieces, enables postal savings, automates reprints and delivers exceptional flexibility and efficiency in transactional and direct marketing printing operations.

Solimar Systems' Chemistry Platform is differentiated in the market from other solutions by its modular, flexible and user-configurable nature. This allows users to be tactical (purchasing only what is needed in the moment, but remaining able to evolve with new opportunities) or to be strategic (building infrastructure intended to satisfy a broad spectrum of requirements). The platform is simple to install and configure (WIN/SQL). Customers quickly learn to use the tools and most are able to build and modify their solutions without the need for professional services.

Solimar Systems has prioritized providing consistent assistance to its customers and partners. The company provides all of its customers access to an extensive learning management system, Solimar University Online (SUO). An extensive, carefully curated library of high-quality training videos and other content is available 24/7 for its global customer base.

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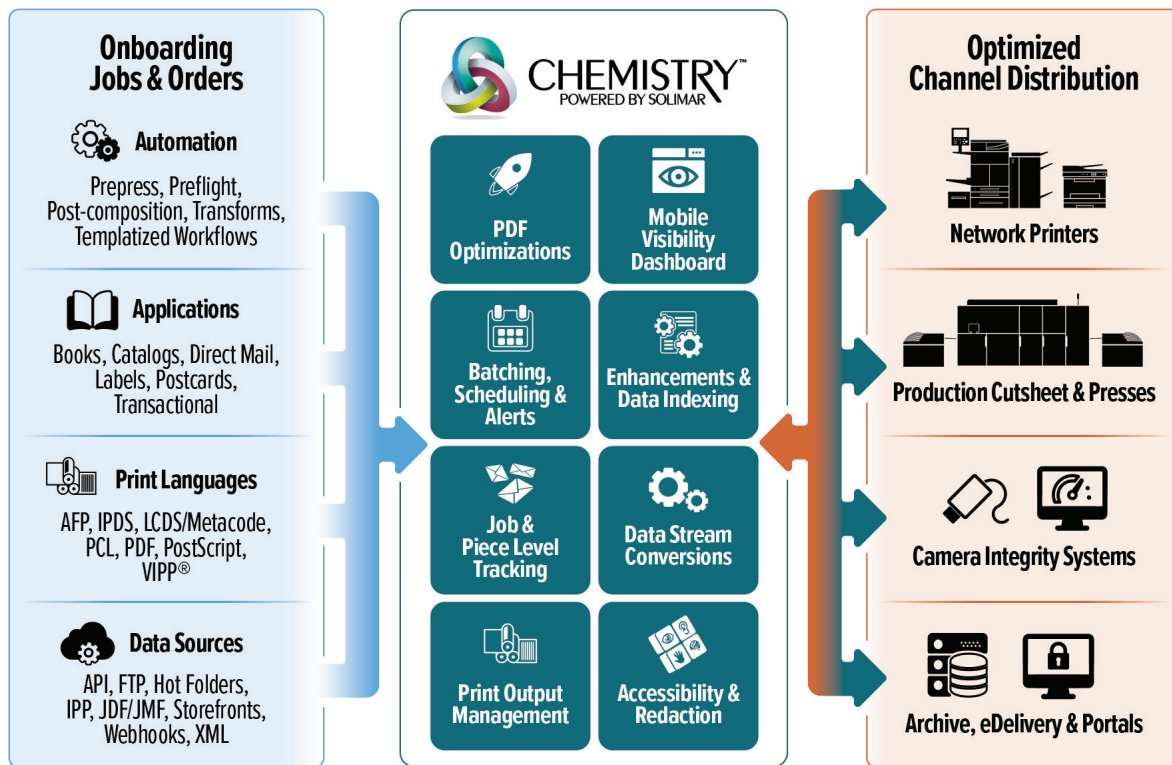
Figure 7- Solimar Systems' Customer Communications Platform

CONCLUSION

Over time, post composition has evolved into a multifaceted solution with feature-rich capabilities that deliver a relatively quick return on initial investment. Implementing post composition into the process can improve an organization's overall customer experience and prove to be a cost-effective solution that can optimize an organization's customer communication delivery process. Because post composition tools make it possible to add a high degree of personalization to every communication, one major contribution is providing the support needed to move from CCM to more sophisticated strategies that result in customer experience management (CXM).

Post composition tools are designed to automate processes and optimize production processes to better leverage staff and hardware, in addition to enhancing communications and maximizing postal savings. Since all these benefits occur post composition, organizations can respond quickly to the ever-changing customer communications environment, increase efficiencies, reduce regression testing and improve profitability.

Companies need to take a hard look at including post composition into the workflow to support the ability to deliver highly personalized, efficient, cost-effective customer communications. With the customer experience being where market share is won, retained or lost, post composition solutions deliver a mission-critical advantage to organizations by ensuring their customers have a timely and meaningful experience.

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Company Name: BlueCrest **Product Name:** Output Manager, Output Enhancement Visual Editor, DFWorks Solutions, OfficeMail **Company Contact:** Joe Eremita, Senior Director Software Business Development **Contact Email:** info@bluecrestinc.com **Contact Phone:** (877) 406-7704 **Website Address:** www.bluecrestinc.com	
Company Overview	Year Founded: 2018 (previously the Document Messaging Technologies of Pitney Bowes) Company Headquarters: 27 Executive Drive, Danbury, CT 06810 Revenue: Not published Employees: 1500 Public or privately held company: Privately held
Product Focus	The BlueCrest software solution is focused on providing clients tracking, reporting and compliance across an end-to-end solution and across all process steps in the print and mailing workflow.
Capabilities and Unique Capabilities	The end-to-end integration of BlueCrest solutions across all process steps in the print and mailing workflow is a differentiator that no one else offers. This includes a variety of software and hardware components to collect and prepare documents, to print, insert, sort, monitor and manage the entire process as a holistic operation, and eliminate the "islands of automation" approach that is typically used. With understanding and control of the entire process, actions can be performed early in the process that lead to greater optimizations downstream. The integrity of any document is coordinated from inception through production and out to delivery and can be tracked and validated at every step along the way.
Print Stream Conversions Supported	BlueCrest currently supports the following inputs: AFPDS, Metacode, LCDS, PostScript, PCL, PDF and XML BlueCrest has the ability to produce from any of the above inputs the following outputs: IPDS, PCL, PDF, PostScript, AFPDS, TIF and XML
Multi-channel Support	BlueCrest provides clients the ability to prepare jobs for multi-channels with the ability to automatically generate multi-channel outputs such as PDF, XML, TIF as well as the ability to create an index file with associated searches that is needed in order to ingest files into an archive—including email and web presentment, depending upon customer preference.

Platform Support	**Server**	**Client**
	Windows 2019, Windows 2016, Windows 2012 R2, RHEL 7, RHEL 8, AIX and Solaris	Windows, RHEl7, RHEL8

Pricing Structure	BlueCrest offers tier pricing models that are scaled based upon usage. This allows for smaller clients to take advantage of the powerful solutions that large enterprises deploy. Maintenance, support and implementation fees can vary by solution.

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Company Name: **Crawford Technologies, Inc.** Product Name: PRO Conductor, Operations Express, PRO Designer, TurboFlow, PDF Accelerator, Preference Manager, QA Suite, GoMobile, eDeliveryNow Company Contact: Scott Baker Contact Email: sbaker@crawfordtech.com Contact Phone: (603) 706-5990 Website Address: www.crawfordtech.com	
Company Overview	Year Founded: 1995 Company Headquarters: Toronto, Ontario, Canada Revenue: $30M - $50M Employees: 150+ Public or privately held company: Privately held
Product Focus	Enterprise Output Management Content Services/ECM Regulatory Compliance (ADA accessibility & multi-channel delivery)
Capabilities and Unique Capabilities	**Print:** Workflow Dashboarding Transform & normalize Re-engineering Batching & sorting Inkjet optimization Preference management Quality assurance Transpromo Redaction Encryption **Accessibility:** Accessibility workflow Digital accessibility Traditional accessibility Accessible paper Transactional documents Published documents Site analysis Transcription services **eDelivery:** Automation Preference management Archive capture Transform & normalize Indexing & bursting Archive/ECM integration ePresentment Archive migration eprinting Bundling & publishing **Unique Capabilities:** Deep domain expertise solutions Innovative and reliable technology Exceptionally high NPS score - 73
Print Stream Conversions Supported	Crawford Technologies' post composition solutions support all printer-ready file formats including PCL 5, PDF, PostScript, encapsulated PostScript, AFP, LCDS/Metacode
Multi-channel Support	Email, SMS, mobile, HTML, HTML5, accessible PDF, accessible HTML, braille, eText, large print and audio

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Platform Support	Server	Client
	Microsoft Linux AIX Unix ZOS	MS Windows
Pricing Structure	Crawford Technologies' pricing philosophy is to support multiple licensing models, enabling companies of varying sizes that generate various volumes of output to leverage the company's solutions. Solutions can be licensed: •On a perpetual basis • On a term (annual right to use) basis • On a volume basis •Via subscription for cloud deployments • GUI-based products, PRO Designer, PRO Viewer and AccessibilityNow Remediate, are licensed on a per seat basis Perpetual license customers can choose between two annual support plans.	

MADISON **ADVISORS**

Company Name: **Pitney Bowes, Inc.** Product Name: Pitney Bowes Relay Hub and Pitney Bowes PlanetPress Connect Company Contact: David Bilodeau Contact Email: David.Bilodeau@pb.com Contact Phone: (717) 449-2516 Website Address: www.pitneybowes.com	
Company Overview	Year Founded: 1920 Company Headquarters: Stamford, CT Revenue: $3.2B Employees: ~11,000 Public or privately held company: Public Ticker symbol / what markets are you traded on: (NASDA, S&P 500, DOW, etc.): PBI
Product Focus	Pitney Bowes' product focus is creating technology that gives organizations the ultimate visibility and control into every step of their customer communications process. Its post composition software is the key to this. The company creates a "blockchain" event for each document processed through its solution and at every step of the workflow, where it can verify and record that the document exists. The existence of the document is verified with a time date stamp to prove the document reached the particular, recordable step. This document security blockchain means that from creation to printing, to mailing, and delivery, it is memorializing every event, so that its clients not only get it right, but can prove they got it right, down to the individual recipient's page level. When it comes to the technology, Pitney Bowes is focused on flexibility and helping clients adapt to future proof their customer communications and processes. Pitney Bowes has moved to a SaaS platform strategy and to its value-added reseller strategy with PlanetPress—this helps reach more clients sending smaller volumes of customer communications who were ignored by traditional post composition software offerings. Its focus on SaaS and flexibility also extend to its outsourced print-to-mail channel which provides clients a seamless business continuity solution.

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Capabilities and Unique Capabilities	• Document re-engineering and redesign. **Unique capability**: Pitney Bowes software can also add document composition elements/content with its post composition software by integrating with host platform outputs or adding content via database queries. • Address cleansing, move update and USPS presorting. **Unique capability**: Pitney Bowes provides the address software rather than needing to integrate to a third party (the Pitney Bowes software can also integrate to third-party addressing software if the client desires). Pitney Bowes also has its own Presort Service that can be utilized for mailers who do not wish to do presorting themselves. • Barcoding for mail piece integrity. **Unique capability**: Pitney Bowes utilizes a proprietary file-based processing solution that gives the user complete visibility to every document that is coming, in process, finished and in the mailstream. • Multi-channel output. Pitney Bowes software solutions can output to multiple digital and print channels. **Unique capability**: In addition to email, SMS and native HTML, Pitney Bowes' software can also output to Pitney Bowes' Mailstream On Demand print-to-mail service. This is a key differentiator as it provides clients a business continuity plan for their critical mailings should the need arise. The Mailstream On Demand channel also provides clients a seamless way to outsource the production of all mailings in the future if so desired. • Ad hoc mailing (remote sending). Pitney Bowes software solutions can capture print streams from desktop users via a cloud-deployed and managed print driver. This allows clients to capture every customer communication across their enterprise to ensure every document is treated with the same level of scrutiny and privacy protection. **Unique capability**: Its ad hoc solution is designed to capture physical and digital communications. It is a true hybrid mail solution with focus on simplicity, making it easy to use for every employee.
Print Stream Conversions Supported	The Pitney Bowes Relay software solution supports a number of file types, including print stream conversion with the most popular being PDF, PCL and PostScript. The solutions can also print inputs from a variety of ERP platforms, server or client-based and others. The solution can also compose documents completely from sources such as XML, CSV, XLX, XLSX and SQL including data elements from multiple systems or databases or structured datafile and then merge these with print stream inputs.

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Multi-channel Support	Email, SMS, post to web, HTML output, FTP (typically used for its disaster recovery offering and its outsource print-to-mail service Mailstream On Demand). The Pitney Bowes post composition software solutions have also supported digital consumer channels such as online banking destinations, DropBox, Google Drive and others via integration with Inlet Digital (now owned by Fiserv).	
Platform Support	**Server**	**Client**
	Our SaaS solution works with popular browsers such as Google Chrome. PlanetPress on premise can be installed on Windows servers and PCs.	
Pricing Structure	Pitney Bowes utilizes two main pricing models. - The Pitney Bowes Relay solution is a subscription-based SaaS that allows a client to select from a number of modules that they need/desire to automate their document workflows. - The PlanetPress software is a licensed software model with professional services where Pitney Bowes will professionally onboard and design jobs and workflows and provide training. For PlanetPress, there is also an annual software maintenance. - The subscription or license, pro service and maintenance are rolled into a simple monthly lease payment with the hardware it's supporting, since Pitney Bowes owns its own financing arm.	

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Company Name: **Racami, LLC**
Product Name: Alchem-e
Company Contact: Matt Mahoney
Contact Email: mmahoney@racami.com
Contact Phone: (321) 277-5009
Website Address: www.racami.com

Company Overview	Year Founded: 1998
	Company Headquarters: Atlanta, Georgia
	Revenue: Not published
	Employees: 80 - 100
	Public or privately held company: Privately held

Product Focus	
	• Provide better outcomes from production processes. This means helping companies better utilize the assets that they have. Alchem-e does this by wrapping around the software and hardware that companies already have to make a master production control system. Post composition is one step in the overall process that Alchem-e can do with its embedded functions or it utilizes systems that are already in place to orchestrate the post composition activity in the context of an overall workflow.
	• Enable the production of communications and send them through multiple channels.
	• Track consumer activity through the channels.
	• Affect consumer buying and satisfaction through data analytics.
	• Facilitate faster payments and digital adoption with prebuilt processes and automation that sends invoices, reminders, integrates multiple invoice systems, collects payments and reduces the load on IT.

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Capabilities and Unique Capabilities	• Integration technology and approach makes the Alchem-e post composition module more compatible and in tune with what's going on around it. It is aware of upstream and downstream activity and what's happening with third-party products that might be part of a post composition workflow. This supports better visibility, scheduling and management of the process. • Alchem-e has a database standard that supports CCM and direct marketing. Many post compostion steps can be done faster in the database and the data is stored there forever as evidence. An example is the original address block might be removed from the PDF pages and replaced with a new postal-cleansed address. Both addresses are stored in the Alchem-e database. • Browser-based user interface with permission control. Granular security for what changes can be made to documents. Other security features available to support highly regulated applications. • Scalable by adding more workflow engines. A single Alchem-e install can handle an almost unlimited amount of work because the system scales to process multiple jobs across multiple servers.
Print Stream Conversions Supported	Natively, PostScript to PDF, PDF to PostScript, PCL to PDF, PCL to PostScript. Externally, any conversion tool can be used as part of Alchem-e's workflow.
Multi-channel Support	Alchem-e enables multi-channel creation, distribution and measurement of communications through print and electronic channels. Alchem-e has embedded document composition, email composition, SMS composition. Outbound and inbound voice are available as well. Message distribution and capture are via connectors to third-party engines. Examples are SendGrid for email, Twilio for SMS and the like. Customer journey tracking is via various techniques including integration with CRM and transactional databases, planting trackers on websites, monitoring email statuses, IP targeting and others. Alchem-e does not need to use its own content creation tools, any can be used and orchestrated and managed by Alchem-e.

Platform Support	**Server**	**Client**
	Windows on premise. Private cloud. SaaS.	Chrome, Internet Explorer, Edge, Safari. Desktop and mobile.

Pricing Structure	Racami makes it possible for customers to mix and match deployment models with pricing models to create what they want. For example, they may choose: • On-premise subscription • Cloud subscription or • On-premise perpetual with annual support

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Company Name: **Sefas Innovation, Inc.** Product Name: Harmonie Communication Suite Company Contact: Michael Lambert Contact Email: Mlambert@sefas.com Contact Phone: (860) 830-0420 Website Address: www.sefas.com	
Company Overview	Year Founded: 1990 Company Headquarters: Paris, France Revenue: $611M Employees: 5000 Public or privately held company: Privately held
Product Focus	Sefas is a global leader in omni-channel customer communications management. Its technology suite provides an end-to-end solution for managing customer communications from composition to normalization, optimization, personalization, centralized distribution, archival and retrieval for physical and digital communications. Sefas is a business unit within the Docaposte division of La Poste, with headquarters in Paris, France, home to research, development and quality assurance operations. Sefas' offices are located in the USA, France and UK.
Capabilities and Unique Capabilities	Composition, interactive composition, post composition, proactive workflow automation, preference and consent management, customer data profile, electronic digital gateway, digital archival services, consumer analytics, real-time decisioning and messaging engines, eAccess dashboards and remote workflow capabilities, digital comparison and business workflow tools. Unified orchestration of physical and digital communications. Proactive workflow automation, remote access to features and function to enable external business workflows. Large scale normalization and optimization for efficient distribution and workflow/business continuity.
Print Stream Conversions Supported	All

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Multi-channel Support	From a design perspective in both composition and post composition, Sefas supports rendering of digital formats with responsive design characteristics to adjust for screen resolution and ability to hide or display content as well as use third-party tools to optimize further to accommodate display on various phone and tablet devices across numerous iOS releases. From an operations perspective, Sefas supports physical and digital distribution using integrated APIs and web services to pass bi-directional data and commands to control devices and services and record results at a job, communication and/or consumer level. Digital support extends into information such as bounces, opens and actions taken within the digital communication to help drive the next best action or message.

Platform Support	**Server**	**Client**
	All	Any

Pricing Structure	Sefas offers flexible pricing models to fit with how customers elect to license their solutions. • Perpetual licenses have an additional annual maintenance fee to cover support and product updates. • Subscription models include maintenance for the term of the subscription. • Implementations, training, etc. are covered by the Professional Services team and are addressed on an individual project basis.

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Company Name: **Solimar Systems** Product Name: Chemistry Platform Company Contact: Mary Ann Rowan Contact Email: Mary.Ann.Rowan@solimarsystems.com Contact Phone: (619) 920-5854 Website Address: www.solimarsystems.com	
Company Overview	Year Founded: 1991 Company Headquarters: San Diego, California Revenue: Not published Employees: 50-100 Public or privately held company: Privately held
Product Focus	Chemistry Platform of Modular Workflow Software Solutions. Includes Solimar Print Director® Enterprise(SPDE), ReadyPDF Prepress Server, Secure IPP Print Server™, iCONVERT™, Rubika®, SOLfusion™, SOLitrack™, SOLsearcher™ Enterprise (SSE), Indexing Tools, XIMAGEpdf™, Accessibility Engine, Redaction Engine.
Capabilities and Unique Capabilities	Unique PDF optimization, any-to-any print file transform capabilities, print management, job tracking, piece level tracking, proofs & approvals, reporting, preference-based alerts, workflow dashboard visibility (mobile, desktop, large screen), JDF integration, print file enhancement/enrichment, workflow automation, secure archive system with ePresentment with portal capabilities.
Print Stream Conversions Supported	AFPDS, ASCII, EBCDIC, IPDS, HTML5, PCL, PDF, PDF/A, PDF/UA, PostScript, SCS, TIFF, VIPP, XML, Xerox legacy (DJDE and Metacode) and other line data variants.
Multi-channel Support	Print optimized for DFEs, eDelivery, electronic content optimized for eDelivery, portals, SMS, HTML/HTML5 and archive systems.
Platform Support	**Server**	**Client**
	Server specifications for all products: https://www.solimarsystems.com/support/system-requirements/	
Pricing Structure	Solimar offers annual subscriptions and license options that include maintenance and point solutions with a limited set of modules (with the cost low for ease of entry). • Annual subscription can also be as full multi-platform (production/test/staging/UAT) systems, which include all products and modules and are typically three to five-year contracts often preferred by large enterprises. • Rentals are also an option where customers can monthly, quarterly and bi-annually rent production and non-production systems based on their needs and balancing work across facilities.

ABOUT THE AUTHOR

Keith Woedy
VP of Research & Practice Lead
KeithWoedy@madison-advisors.com

Bringing more than 30 years of experience to Madison Advisors, Keith Woedy is known for delivering industry leading results in the content management, business process improvement and information technology services market space. He understands the importance of managing top line revenue while focusing on developing lean and profitable organizations through implementing more efficient processes, profitable contract negotiations and improved employee efficiencies.

Prior to joining Madison Advisors, Keith served as President and Equity Partner in Legalis Imaging, developing both its Federal government division and footprint in the clinical trial marketplace. He also founded Atlantic Imaging Systems, a print technology company that enjoys partnerships with Kyocera, HP, OKI and Sharp USA. Earlier in his career, Keith successfully ran a $34M core operation for Xerox in Virginia, the largest of Xerox's Global Imaging Systems portfolio.

Keith has served on various advisory boards, including US Bank and USXL Leasing Advisory Boards, Xerox Printing Systems National Advisory Board, and in an advisory capacity with the NC Chapter of AIIM. Keith's strategic leadership, strong financial acumen and expertise in operational improvement give Madison Advisors clients a true consultative partner in their quest for operational excellence.

He holds B.S. in Management Science from Nazareth College of Rochester, where he currently serves on the Board of Trustees.

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ABOUT MADISON ADVISORS

Madison Advisors offers research and consulting services that provide objective analysis, client-specific guidance and in-depth market knowledge to clients in the customer communications management (CCM), electronic delivery and print industries. Madison Advisors' industry-neutral expertise enables enterprise organizations, service providers and technology providers to achieve their strategic objectives around CCM.

Since our inception in 2001, Madison Advisors has helped our clients:

- Assess their competitive industry standing through our Best Practices Assessment

- Develop and implement effective enterprise communication strategies

- Identify growth opportunities in the enterprise, service provider and technology provider markets

- Understand the impact of market trends on their business

For more information about Madison Advisors, visit our website: www.Madison-Advisors.com

Kemal Carr
President
kemalcarr@madison-advisors.com

Under Kemal Carr's direction, Madison Advisors has established a market niche as an independent analyst & market research firm that addresses the needs of the electronic and print CCM marketplace. The firm provides retainer and project-based strategy services designed to assist clients with technology selection and alignment and business process optimization decisions.

Kemal is regularly sought out by some of the leading output technology publications to write about or comment on the industry's key issues and topics, including articles on the impact of eDelivery and multi-channel delivery, advancement in communication technologies, and electronic document presentment. He is also asked to speak at trade events, including key sessions at Xplor's Global conference, DOCUMENT Strategy Forum, Inkjet Summit and numerous vendor trade events.

In 2010 Carr received the Xplorer of the Year award from Xplor International at its Global Conference. The award was in recognition of Carr's "volunteer service to the Association, dedication to the Xplor mission and promotion of the interests of the electronic document systems industry at large."

Kemal earned a B.B.A. in Management Information Systems from the University of Wisconsin and is an M.B.A. candidate in Management at Texas Christian University.

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