



4010 William D. Tate Drive
Suite 104-805
Grapevine, Texas 76051
P 817.545.5996
F 817.354.4471
E info@mcgrewmcdaniel.com

By P.C. McGrew

The Value of Document Composition and Print Stream Engineering Software

Document Creation Drives Integrated Closed Loop Messaging

How's your business organized? Around departments or product lines? Divisions? Business units? How about processes?

If your business isn't organized around end-to-end processes, you're cheating your organization, your employees and your customers. Business processes that are proactively monitored yield efficiency and effectiveness, which leads to reduced costs and greater customer satisfaction. You don't need to "transform" your business. You just need to understand it better so you can improve it.

For example, there's tremendous value in treating the document process holistically rather than as separate actions cloistered in the familiar departments of the modern-day corporation – Marketing, Information Technology (IT), Print/Finish or Mail Operations, Administration or in the Mailroom or Distribution Center. You'll find great value in implementing an advanced 'closed loop' process that links both incoming and outgoing message streams for faster and more effective processing, and more tightly targeted customer communications. Pitney Bowes calls this holistic process, Integrated Closed Loop Messaging.

Integrated Closed Loop Messaging enables coordinated interaction with existing and potential customers across all touch points – mail, email, web, parcel and call center – according to customer and company preferences. Data from the entire enterprise is gathered and made available to optimize each customer experience and better target the next one. The result is an intense focus on continuous improvement in messaging and unparalleled progress toward maximum productivity, lowest operational cost and seamless, high-quality customer service.

Some value propositions that derive from Integrated Closed Loop Messaging are:

- Presenting a single, unified face to customers in messages without having to clean up legacy databases
- 1:1 targeted messages included in the most high-value, permission based medium – the monthly statement or bill
- Availability of the 'as rendered' statement and all document tracking information through delivery to the call center for greater customer satisfaction and more efficient resolution
- Improved ability to finely coordinate multi-channel marketing campaigns

- Automated link between customer reply and fulfillment for efficient response
- More accurate and granular data for measuring campaign effectiveness
- Postal and demographic data quality solutions that enable highest confidence that messages get to customers
- Document integrity and delivery information for customer satisfaction and as a platform for regulatory compliance – and proof of mailing

The basic activities involved in this dynamic messaging process are Document Creation, Document Production, Document Distribution, Remittance, Receipt and Updating Information, which include data received in this go-around, from both a customer interaction and a process viewpoint. An integrated mail and document management strategy enables businesses to create new revenue channels by leveraging the data from their core customer messaging processes.

On Your Mark. Go. Get Set.

Implementing a successful document strategy requires a keen understanding of your business requirements and processes, along with a tactical plan that incorporates technology logically based on those needs. A great many IT projects fail – CRM is a much talked about example – because the technology was implemented in a vacuum. Changing your organization's document technology is complicated by business systems that may have been in place for decades and are largely impervious to change. Implementing technology without regard to these systems and your business processes is like a race where the starter pistol is shot before the runners are ready. There are going to be missteps, falls and failures.

For document strategists, the race begins when the document is created. Document managers can determine the strategic objectives of the document, then take a holistic approach to determining the document life cycle and making adjustments to the document as needed. The symbologies and tactical markings that will be used to determine the course of the document are embedded within it at the time of creation.

Document composition and print stream engineering systems can work together to provide a total integrated solution for your business, but each also has separate uses. The challenge is to look critically at your current document production process to identify where and how document elements are developed for print – and how that output becomes available for mailing, archiving and integration into the messaging loop.

Can those existing applications, which may be both mission-critical and fragile, remain untouched while adopting new technologies that enhance the creation, print, delivery and reconciliation processes to form the basis of the document lifecycle? Or does an ROI calculation justify the migration to a document composition solution as a replacement for current methods? When should each be used separately, and when should they be implemented in tandem?

Your Most Basic Business Need: Connecting with Your Customer

Economic forces require businesses to cut costs, while at the same time market forces create the need for more customized, personalized messages. There has been an explosion of new technologies that businesses can implement to gain a competitive edge in their markets.

According to Gartner Research, CRM was a \$22 billion business in 2001 and will grow to \$25.3 billion in 2002. As with many of the buzzwords and three-letter acronyms favored by the international business community, the term CRM has become so broad that it has lost meaning. Documents must play a major role in any CRM strategy, because they're typically the only regular, reliable communication that businesses have with their customers. Businesses send billions of confirms, statements and notices to their client bases each year. There's clearly a need to increase the effectiveness of those messages by creating higher impact documents.

In short, businesses need to create:

- More individualized documents with variable data
- Cleaner, more easy to understand documents
- Documents with more marketing appeal and added value, i.e., color, charts, graphics
- Targeted messages with better use of white space
- More consolidated documents – especially financial documents

At the same time that Operations and Marketing departments are being pushed by management to produce improved documents at lower costs, IT groups find that they can't revise the application systems for Operations quickly enough to stay abreast of the new technologies. Many organizations have moved to outside service bureaus to obtain these benefits, which means sacrificing control of document production.

IT requires a new methodology to fulfill the requirements of Operations, Marketing and Finance. Making revisions to the applications systems is too time consuming and there are not sufficient programming resources for this strategy to be effective. Programming printer and inserter requirements in a programming language like COBOL isn't practical. Some printers require all programs producing the documents to be revised. This may take many months or even years to complete. The goal is to determine where a document composition software solution or a print stream engineering solution will provide value as a replacement for current methods.

Document Composition Software

Document composition is the process of adding and formatting information to text. The complexity of document formatting is generally a function of the needs of the business application and the tools used to develop the text for output. The document composition environment must be effective, efficient and extensible.

Most mission-critical business applications composed for print are written in COBOL, FORTRAN or other programming languages that format output for print. These languages are efficient and effective in meeting basic business needs, but require extensive programming to update. In addition, these programs are often fragile due to lack of comprehensive program documentation, limiting the customer's ability to adopt new technologies.

Document composition tools create the text files to be printed or viewed. The files may be components of larger documents assembled at a later point in the document workflow, or they may be comprehensive documents that contain all of their necessary elements. These documents may also contain placeholders for later inclusion of variable data to personalize the document. An integrated composition system typically provides the ability to apply type style and size, or add graphic and formatting information. They come in two basic types: tagged languages that are compiled into an output print file and What-You-See-Is-What-You-Get (WYSIWYG) applications.

Tagged language composition systems are effective composition tools with the ability to tag logical elements in the document as well as to control formatting independent of the document element coding. Extensibility is a function of vendor willingness to stay current with emerging standards and technologies. Because they require the use of a separate composition engine to produce the final format, development times may be extended and a greater burden is placed on IT resources.

WYSIWYG systems began as standalone pieces of equipment. Typically these systems were acquired to handle forms and document development, functioning as high-powered word processing systems. Over time, these were displaced by PCs, with and without mainframe access, opening the way for the use of generally available PC-based programs for business document development. Composition systems designed for the PC allow the document developer to see how the document looks as it is developed.

WYSIWYG composition systems like Group 1's DOC1® are efficient, effective, extensible and often wrapped around popular word processors like Microsoft Word. For example, businesses that use Word to handle the bulk of their basic document development requirements, including forms design, sometimes use DOC1 as an add-on or plug-in to enhance the program for a specific application need.

DOC1 unites all activities for creating and maintaining personalized documents under a central architecture. It provides a platform and printer independent solution for object-oriented design and production of printing applications. DOC1 supports the entire Application Development and Maintenance effort through a graphical user interface. Users can develop structured, high-volume, all-points-addressable electronic printing applications that can actually be tested at the workstation and proof-printed on a locally attached desktop or production laser printer before committing resources on the target host environment. This solution is effective from a training point of view, allows

for scalability, and typically integrates effectively with enterprise database environments on the network and host.

In addition, DOC1 stores highly compressed documents in an inexpensive NT environment. This allows for the quick retrieval of 'as rendered' documents for use in call centers and marketing automation initiatives.

Consider a DOC1 implementation when...

Multiple products are in use for forms development and document creation

Current document composition processes use device-specific formatting

Fonts and/or graphics are both device and resolution dependent

Output to multiple print and view environments is required

Created by Group 1 and co-marketed by Pitney Bowes docSense, DOC1 gives businesses control of their documents from content design, generation and presentment to archive, retrieval and payment. Better targeting of customers, more finely tuned messages, and more visually appealing documents mean more sales, more higher-value sales, at lower cost per sale and a more successful messaging campaign.

Print Stream Engineering: "First, do no harm."

Is your business duplicating mailings because you cannot consolidate the multiple output formats into a single package? If you can assemble the package, is it being done as a post-printing operation using sorters? How many wrecks do you suffer? How many reprints do you run because of quality assurance failures?

Since businesses have a great deal invested in their document process, it's advisable to take the physician's oath – "First do no harm." In most cases, however, the harm has already been done, especially in environments that have been through mergers or acquisitions.

Even in environments where all of the printers are nominally speaking the same language, most likely you'll find variations in what the applications produce. Several flavors of AFP, line data, PCL, Xerox Metacode, PostScript, and PDF may be found in a single application, all being produced and printed independently. A variety of applications and print formats are often leveraged to create a specific document package.

In this environment, weaving a complex mix of diverse print stream formats into a single file or set of files can be the fastest path to providing more sophistication in the print application because it allows the existing applications, which may be both mission critical and fragile, to remain untouched while providing access to new technologies for enhancing the creation, print, delivery and reconciliation processes that form the basis of the document lifecycle. This is where print stream engineering shines.

A recent survey of the \$100 billion document creation industry conducted by Prinova Technologies suggests that there may be a crisis looming over the next three to five years when 50 percent of all trained application developers will retire. Organizations that have invested millions of dollars in core business applications will turn to new personnel for the re-engineering of mission critical documents. These new programmers most likely lack the specific programming language expertise needed to enhance output without impacting underlying systems.

StreamWeaver® provides one-stop print stream conditioning that can be developed and maintained by print specialists who are not programmers or systems analysts. It provides a single interface to print stream format transforms, print file enhancement, the addition, substitution and deletion of objects in the print stream (graphics, forms, color, mailing automation marks) and quality assurance. It also includes the process of document assembly and Variable Data Insertion/Replacement using a set of rules defined independently of the print file development. Because StreamWeaver acts on the print stream before it reaches the printer, it saves time and money by reducing the steps in the mailing process.

StreamWeaver makes revisions and changes to the actual print stream produced by the application program. Any of the data and printer commands within the print stream may be revised or added into the print stream. Typical usages of these systems are to revise information on the document used by the fulfillment processing or printer commands to implement new printer capabilities.

StreamWeaver simplifies the development and testing of document engineering applications to ensure fast production-ready results, decreases the document time-to-market, collects workflow data for efficiency reports and commingles print streams to take full advantage of United States Postal Service (USPS) discounts. It can also include file splitting or consolidation, the addition of new print elements like bar codes, new non-printing elements like Tagged Logical Elements (TLE) identifiers used by e-business and archiving systems, and other manipulations as a part of the process.

The latest release includes an optional Professional Workstation with a WYSIWYG graphical user interface that makes it far easier to use for both novice and expert users to re-engineer print streams.

A Dynamic Script Creation feature allows users to create StreamWeaver application scripts without knowing the syntax of the StreamWeaver language, which may help avert the aforementioned crisis of trained application developers retiring over the next few years. The Document View feature lets users see composed images of input and output documents graphically – in their current state, working state and after changes are applied. The finished product is ready for the print shop.

StreamWeaver allows users to consolidate, add color to, enhance and customize documents to improve their look and content, making them more attractive and easier for customers to use. In addition, StreamWeaver supports file-based processing, which optimizes intelligent inserter technology, and automates manual processes such as print suppression for digitally delivered documents and document regeneration.

Users can also inspect and test application changes by utilizing actual system resources, such as print fonts, to speed turn-around time. StreamWeaver also allows legacy data to be routed to multiple output media, suppressing print intelligently for electronic bill presentment and payment (EBPP) technology, facilitating a mix of web and/or paper-based presentment options.

The Hierarchical Tree-Structured Project Manager provides central management of all StreamWeaver projects, along with a single access point for sharing projects in whole or in part with built-in security features for optional limits on access.

Consider a StreamWeaver implementation when...

Multiple products create multiple data streams or data stream flavors

Business processes would benefit from a consolidation of print streams

Business processes would benefit from late binding decisions about postal automation markings, file splitting, file consolidation and printer assignment

Any of the following business problems are in evidence:

- Turn-around time from file creation to mailroom is longer than average
- Multiple output streams require physical sort before mail
- Lack of consolidated document packaging

ROI can be calculated for:

- Faster time to market for mail pieces
- Reduction in mail costs
- Single point of document process management

Consider a DOC1 implementation in conjunction with StreamWeaver when...

The current document creation facilities can be replaced, but user-written applications are too fragile to alter

The current document creation facilities can be replaced, but document packages include print streams from external sources, such as vendor partners, outsource providers, or remote corporate divisions using different print methods

The current document creation facilities can be replaced for most applications, but remaining legacy applications (vendor or user-written) remain that produce multiple print streams



Pitney Bowes docSense

37 Executive Drive
Danbury, CT 06810-4148
1-877-5docSense
(1-877-536-2736)

www.docSense.pb.com

The value of an integrated messaging strategy comes from your enhanced ability to acquire and retain valuable customers, leverage opportunities for cross-selling and up-selling, reduce cycle times and per-document costs, and manage cash flow.

Clearly, there's a significant benefit to reviewing your current document composition environment today and your potential for print stream engineering as a means to participate in an Integrated Closed Loop Message Management environment. DOC1 and StreamWeaver can add value to most document environments, either working together or as independent solutions.

Pitney Bowes will work to understand your business objectives and processes, define a series of value propositions, map our enterprise solutions to those objectives and seamlessly integrate them into your business to yield measurable results.

Pitney Bowes has the hardware, the software, the professional and technical services, process re-engineering and systems integration, the partnerships and the financing options – to help you link seemingly disparate processes. The result will be the continuous improvement in messaging and unparalleled progress toward maximum productivity, lowest operational cost and seamless, high-quality customer service.

**For more information
on Integrated Closed
Loop Message
Management, DOC1
and StreamWeaver,
please call
1-877-5docSense
(1-877-536-2736)**

StreamWeaver is a registered trademark of Pitney Bowes Inc.
DOC1 is a registered trademark of Group1 Software, Inc.



Ms. McGrew has expertise in the following areas:

- *Wrestling Legacy Data to the Web*
- *Implementing a Document Strategy*
- *Building a Holistic Approach to Integration*
- *The Truth Behind the Resources*

She offers unparalleled experience in all phases of information delivery. She specializes in the migration of legacy applications to the Web and beyond. In addition, she has led document strategy and information delivery strategy studies including attention to emerging technologies.

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