Pitney Bowes
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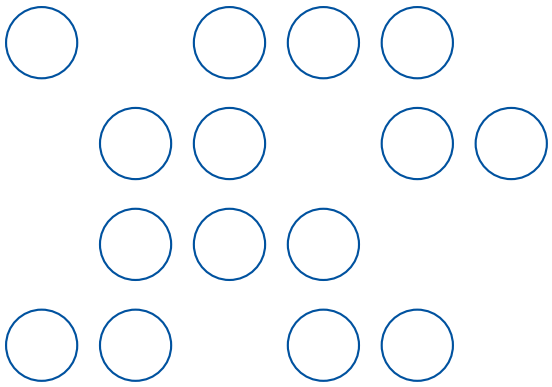
Production Intelligence

White Paper

Centralized Output Management

The Key to Maximizing Control of Production Workflow



Executive Overview

Introduction—Why Output Management?

There's no question that documents—particularly transaction documents—have become an essential touch-point in maintaining and building customer relationships. Even when produced with maximum efficiency, poorly developed transactional documents can have serious implications—from increased complaints and late payments to issues with brand image. As a result, print operations are looking for ways to produce and deliver statements, invoices, and other customer-facing communications with better quality, more versatility, and personalization across multiple channels.

While technological advances enable more sophisticated communications, modern print operations face tough challenges. The short list includes everything from industry consolidation, convergence and regulatory pressures to the need to add value to legacy applications, accelerate turnaround, improve accuracy and deliver documents via print, email and the Web. These trends and resulting issues are making document production more complex than ever—and driving the need for a robust centralized output management solution.

For many companies the default solution is a cluster of isolated point solutions. Implementing these independent workflow solutions across multiple business environments is a classic case of "one step forward, two steps backward." In addition to making it difficult—if not impossible—to shift work and leverage existing investments fully, separate systems require dedicated staff, resources, hardware, and maintenance procedures to support them. The result is inefficient processes, high costs, production bottlenecks, and trouble recovering from errors.

The good news is that a robust, open, and scalable centralized output management system can provide the framework for bridging multiple proprietary workflows; for simplifying, streamlining, and re-engineering jobs and workflows; maximizing throughput; and centrally tracking and managing jobs, devices, and resources. In fact, the right output management system can integrate incompatible devices and platforms, eliminates duplicate workflows, and makes better use of capacity, staff, and equipment. It can provide real-time access to the critical information needed for rapid decision-making and the tools organizations need to produce and deliver high integrity customer communication documents, in multiple formats, using legacy and new platforms—and deliver them across multiple channels.

What's more, implementing the right output management system offers built-in investment protection because it provides a framework for migrating to an Automated Document Factory (ADF) [1]—a model that applies factory production techniques to manage the end-to-end digital production of transactional documents. With the right output management system, you're well on your way to a starter level ADF because you'll have a solid platform for deploying an ADF in a phased approach as your requirements change. Here's the dilemma—how do you choose the right output management solution? What do you look for? Especially when many document composition, ERP, and CRM systems claim to offer output management capabilities—but in reality offer partial solutions?

This white paper explores the trends and business issues that are driving the need for output management systems. It explores the output management value proposition and its components and capabilities and provides guidelines for identifying requirements, understanding PDLs and print streams, and choosing the right solution. This paper also describes how four businesses have successfully implemented output management solutions to transform their operations and takes a close look at potential business benefits and the future outlook.

[1] Refer to the Pitney Bowes white paper: "A Common Sense Approach to Building an ADF"

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Trends and Issues

In today's competitive, rapidly changing market, success means finding better ways to streamline operations, add value to customer communications, increase integrity, and reduce costs. A constantly evolving business and technological landscape, combined with emerging trends that are reshaping the future of documents is shifting a centralized output management solution from a "nice-to-have" to a "must-have" component of future success.

Trend: Industry consolidation

Mergers, acquisitions, and ongoing consolidation can help businesses leverage increased market share and synergy. However, they also create new issues:

- Multi-vendor, multi-platform environments
- Lack of centralized control and prioritization
- Inefficient device utilization
- Large, complex, multi-site operations
- Fragmented data collection and accounting
- Pressure to reduce costs
- The drive to improve competitiveness and response times
- The need to change/add value to existing application
- Difficulty managing legacy systems and applications

Trend: Convergence

The coming together of previously disparate print streams, platforms and PDLs, offset and digital printing, transactional and promotional documents, hard copy and electronic output offer exciting opportunities, but also present new issues:

- Changes in projected print volumes
- The TransPromo revolution
- Demand for multi-channel delivery

Trend: Regulatory Compliance

Regulatory compliance can result in more efficient, streamlined practices. However, like any process change, the initial transition can create challenges. It can be time-consuming and costly. What's more, the need to provide immediate access to compliance information, and generate audit trails and compliance reports can incur heavy workflow demands, along with:

- Pressure to minimize output errors
- Improved document tracking and integrity
- Zero defect production and accuracy

Making Sense of the PDL and Print Stream Alphabet Soup

Most modern, high-volume output operations are mixed shops. And most wrestle with the same problem—an alphabet soup of processes, platforms, PDLs and print streams. When faced with multi-vendor, multi-PDL, and multi-print stream challenges, the tendency is to focus on one or more PDLs and/or print streams as the standard and invest time, energy, and resources into migrating to that PDL and/or print stream. Often, the better choice is to implement a centralized output management solution that supports all common PDLs and print streams, whether it's simple line data consisting of the actual text being printed and some page eject commands, more complex line data with font calls and inserted graphics, or more recent PDLs like Postscript®, PDF and PPML™. The point is, each PDL and print stream offers varying purposes, advantages and limitations. Take a look…

PDL	Purpose/Fit	Pros	Cons
Line Data	Not really a PDL, but a data format. Line data is a requirement in many mid-tier operations with AS/400s®, SAP®, and some UNIX® server platforms.	Unformatted line data typically feeds variable data printing solutions. With the growing emphasis on variable data and TransPromo, line data becomes more important.	None
AFPDS	An application-level print stream for IBM® AFP™ solutions. AFPDS™ is a preferred print stream for transactional printing and is becoming integral to the Color Consortium most major vendors support.	AFPDS is one of the best defined and documented print streams. It supports all of the capabilities today's documents require. It's one of the most efficient print streams for processing overhead and can be generated by most application generation products.	As an IBM defined format, AFPDS is tied to a printer vendor. However, the benefits of definition, enhancements, standardization and universal adoption outweigh any negatives.
LCDS	LCDS is the legacy Xerox® print stream derived for the original 9700. It includes line data to be formatted using Job Descriptor Library (JDL) and Job Descriptor Entry (JDE) resources. It also may include Dynamic Job Descriptor Entries (DJDEs) or Xerox Metacode.	Developed more than 30 years ago, LCDS offers few advantages over other PDLs. However, it is one of the more prevalent print streams. While few new applications are created using LCDS, the legacy applications created over the past 30 years have resulted in a huge volume of LCDS applications to be supported.	Most LCDS applications were designed years ago by people who no longer work on this type of programming Because LCDS is not an 'exact science' changing data or print resources can be challenging. The leading requirement is to support LCDS print streams in their existing format using fonts, forms, images, as designed.
PostScript	PostScript (PS) has become one of the more popular PDLs for all types of applications.	PostScript offers expanded graphic capabilities compared to other print streams. It also has the benefit of standardization based on ongoing support and enhancements by Adobe®. PostScript can be generated from a wide range of applications, including almost any Windows®-based application.	Because the PDL has to go through a Raster Image Processing (RIP) step before printing, performance on high speed devices was a concern. Technological advances have improved performance and most PostScript applications can print up to rated speed on Océ®, IBM and Xerox high-speed printers.

PDL	Purpose/Fit	Pros	Cons
PDF	PDF is based on PostScript, and like PostScript is one of the more popular applications.	Like PostScript, PDF offers expanded graphic capabilities, is standardized, and can be generated from a wide range of applications.	In addition to the same concerns as PostScript, PDF was initially created as a format for easy document distribution and viewing rather than a robust production print language. It is becoming more common as a print language, but still has limitations in terms of specifying things like tray pulls and finishing capabilities.
PCL	Created by Hewlett-Packard®, PCL™ offers the benefits of support, standardization, and adoption by most vendors.	PCL can be generated by most document creation solutions and can be processed by PCL compatible devices without RIPing. It is more efficient (similar to AFPDS) than PostScript or PDF.	PCL is limited relative to error recovery, where recovery often consists of aborting a job and reprinting it completely. In some implementations, PCL goes through a RIP step to send it as graphical data to non-PCL devices.
PPML / XML	These are among the newer print stream formats for production printing and offer enhancements for variable data printing.	PPML and XML™ are supported by most application generation and output management solutions.	Most production printing customers are interested in variable data printing. Today, PPML and XML are more of a future direction than a short-term requirement. Very few printing systems support PPML and XML natively.
Print Driver	**Purpose/Fit**	**Pros**	**Cons**
IPDS	IPDS™ is the device-level print stream for IBM AFP. In an AFP workflow, AFPDS is generated by a print application and at print time, is converted to IPDS for the target printer. This conversion is performed by using a product like IBM Print Services Facility™ or a server-based output management solution like Emtex VIP.	IPDS offers all the same benefits as AFPDS in terms of definition, documentation and standardization. It's also the best way to drive a printer. IPDS two-way communication between the host and printer enables robust error recovery, accounting and status information. IPDS is more efficient for printers than PDLs that require them to RIP jobs.	As an IBM defined format, IPDS is tied to a printer vendor. However, the benefits of definition, enhancements, standardization and universal adoption outweigh any negatives. IPDS is best suited as the output from an output management product to a printer and is not used as input for conversion.
IJPDS	This is the device-specific print-stream format created by Kodak™ for Versamark™ high-speed color and monochrome printers.	IJPDS™ has become common for high-speed color printing. Most application-generating solutions create it.	IJPDS is unique to Kodak printers. As such, not all output management solutions support it. Emtex Virtual Presentation (VIP) can generate IJPDS from almost any input PDL.

Introduction to Output Management

When it comes to managing today's complex document production environments—and making the most of assets, devices, and resources—improving performance means transforming challenges into opportunities. For modern print operations this means boosting efficiency by increasing throughput, enabling any-to-any output, re-engineering legacy documents, and ensuring end-to-end, closed-loop document integrity, with the ultimate goal of improving productivity and customer satisfaction. Sounds like a tall order, but fortunately there is a highly effective way to solve the problem—implementing a centralized output management (OM) system. First, it provides centralized management and prioritization to optimize document workflow in specific locations or across multiple departments or production environments. Second, it provides a solid foundation for implementing an ADF in a phased rollout if that is a future direction.

An output management system is the ideal solution for the all-important job of getting composed documents to the best-fit printers and into the mail box with maximum speed and efficiency. Why? Because centralized control and management provide a central view of the bigger picture, answering critical questions like … what resources are available for a job? What is the overall print workload? Are other documents coming in that can be combined for batch printing or postal sorting? Which printers are available to allow intelligent splitting or workload balancing? Is a given printer down for service or busy with another job?

A robust output management system provides operations personnel with the real-time information they need to proactively solve problems and make last minute changes or reprints without recomposing the job. They can track jobs and pages printed, account for and charge back for jobs, balance workloads and centralize management and control. An output management system also offers investment protection, because in addition to providing immediate benefits, it sets the stage for building out an ADF later.

An effective output management system can:

- Bridge multiple proprietary workflows, vendors, and applications
- Re-engineer documents and processes to maximize efficiency and productivity
- Enable jobs to run wherever and whenever needed
- Balance workloads across devices and/or multiple sites
- Enable more personalized customer communications
- Deliver communications in multiple formats over multiple channels
- Boost flexibility with minimal impact on existing systems
- Speed delivery and improve accuracy
- Improve process, job, and document-level integrity
- Reduce costs

What is output management? A Definition...

An output management solution is a software system used to centrally manage print and electronic output. Transforming a time-consuming manual construct into an efficient, technology-driven production model, an output management system consolidates input from several different platforms and applications and centrally manages resources and documents. It supports any-to-any print stream transformation and pass-through, re-engineers and processes documents, provides end-to-end tracking and reporting, and delivers output across multiple channels—production printers, network printers, email and the web. In short, it provides a single point of control for the entire document production process—from data creation, print job acquisition and input through printing and mailing. Print operations benefit from faster time to market, improved accuracy, reduced costs and the ability to enrich communications with personalized messages.

Three basic pillars of an output management system

A complete output management system comprises three basic pillars, which are deployed to different degrees depending on each implementation. These pillars include:

- Centralized and automated workflow—an open and cost-effective approach to job control, tracking, auditing and accounting. Streamlining and automating processes optimizes throughput and asset utilization, while enabling greater productivity, compliance, and lower processing costs. Print operations benefit from improved resource management, job routing, and efficient control of print production.
- Real-time PDL transformations—a robust, text-based, PDL conversion tool that provides vendor-neutral "any-job-to-any printer" flexibility to boost operational control, maximize throughput, balance workloads and eliminate production bottlenecks. With real-time PDL transformation, operations can meet tighter SLAs, maximize available printer assets, and create e-documents for multi-channel delivery. Print operations are no longer limited by proprietary architectures so they can choose the best printer technology for their current and future business requirements.
- Real-time document re-engineering—provides downstream flexibility to optimize mail-pieces and smoothly re-engineer print streams, rather than having to alter underlying legacy business applications. By making changes within the print stream "just before print" for content, print operations can add finishing marks, index, sort, split, merge, and create inserter control/integrity files. This enables businesses to conserve the value of legacy documents, and print highly targeted and customer-relevant inserts for inclusion with statements or bills, tailored to match the profile of the end customer.

Do you need an output management system?

Ask yourself these questions … your answers can help you determine if your print operation might benefit from an output management system.

- Are you satisfied with the way you currently manage print production?
- Are any of your devices sitting idle several days of the month?
- Do you struggle with updating/adding value to legacy documents?
- Do you have dedicated point solutions for transactional, POD, and other workflows?
- Are you having difficulty managing a proprietary architecture, complex workflow and diverse output technology?
- Are you leveraging transactional documents to engage customers across multiple channels?
- Does your print operation experience frequent bottlenecks, missed SLAs, and high operating costs?
- Can you effectively load balance your print production to optimize efficiency?
- Can you efficiently manage reprints downstream?
- Are you satisfied with the way you currently handle inserter rerouting?
- Do you have a need to make changes to print-ready files?
- Do you have a business continuity plan in place?

Scaling your output management system to your needs

While they include the same basic building blocks, output management systems can be as individual as the documents and operations they manage. The extent of your deployment will depend on your unique requirements, the size and complexity of your workflow and whether or not you need to manage processes in a single site or across multiple sites.

Basic Configuration

Single server mode—this configuration consists of a single server used by operators to control print devices and print jobs. This configuration is typically used in a small shop to drive a limited number of printers.

Capabilities include full output management including:

- PDL transformations
- Reprints
- Document re-engineering
- Job accounting
- A full range of connectivity
- Full scalability to the site-wide or enterprise configuration

Site-wide Configuration

Client-server architecture—this configuration consists of a single control server or multiple servers in a more complex client/server implementation with or without redundant backup. Jobs are routed to local servers driving one or more output clients.

With this configuration, typically used in larger facilities with five or more printers from multiple vendors, print operations can centralize job management and distribute job processing locally. The site server becomes the central point of control for PDL transformation and job routing, accounting and tracking.

Full output management capabilities include:

- PDL transformations
- Reprints
- Document re-engineering
- Job accounting
- A full range of connectivity
- Full resilience
- Full scalability to the enterprise-wide system

Enterprise-wide Configuration

Multi-site enterprise—this configuration replicates the site-wide configuration, with the addition of centralized control of multiple devices and processes across multiple sites with client/server configurations at each site.

This solution provides:

- PDL transformations
- Reprints
- Document re-engineering
- Job accounting
- Full range of connectivity
- Full resilience
- Continued operation by local servers for LAN failure
- Common support for multiple sites
- Shared disk storage for redundancy
- Ability to transfer operations to different sites for disaster recovery
- Centralized job accounting for the enterprise

Print operations benefit from a centralized view of the operation, site-to-site job transfer for workload balancing and disaster recovery, and centralized accounting.

Each enterprise server operates independently, feeding job status and accounting information to the "master" enterprise server to provide a complete view of the production workload across the enterprise.

The Value of Centralized Output Management

Today, print operations face unprecedented challenges—and opportunities to transform those challenges into competitive advantage. This is where the value of a centralized output management system comes in—in its ability to transform disruptive trends like industry consolidation, convergence, and regulatory compliance—into a competitive advantage that drives efficiency and profitable growth.

Industry Consolidation

The drive to expand organizational reach has made mergers and acquisitions a routine occurrence in today's business environment, especially in the financial services and insurance sectors. While companies benefit from increases in market synergies and market share, their print operations struggle with managing the complexities of multi-vendor, multi-platform, multi-site print environments. Success depends on how well they can integrate disparate processes, print streams, platforms, devices and legacy and new applications.

Some of the toughest issues caused by industry consolidation are device and platform incompatibilities and redundant workflows. Multiple, islanded point solutions require multiple operator interfaces, dedicated staff and resources, and multiple points of control. This results in difficulty coordinating workloads, jobs clashing when they get to the printer, more errors, difficulty managing priorities, lower productivity and throughput and increased risk of missing SLAs.

Lack of centralized control makes it difficult to use devices and resources efficiently. It creates problems with workload balancing and disaster recovery, and results in fragmented data collection and accounting. Without a centralized solution, print operations expend tremendous time, money, and effort collecting data from multiple points. They also struggle with errors and inconsistency in the data collected, difficulty consolidating it, and an inability to transform data into business intelligence.

Other problems include inefficient reprint processes, operational inflexibility, and difficulty adding value to documents. In fact, the need to centrally account for and charge back for jobs is a key driver for centralized output management.

Despite automated solutions, many large, mixed shops make best guesses or use manual log sheets to account for jobs and log them into home-grown spreadsheets—or don't account for or charge back for jobs at all. As for device utilization, the inability to centrally manage multi-vendor and multi-site devices create production bottlenecks that jeopardize delivery commitments by overworking some devices while others sit idle.

Another common challenge is the need to change or add value to applications without having to reprogram the underlying host application. Many legacy applications were developed 10+ years ago. As a result, print operations are unable to take advantage of performance-enhancing capabilities like automated document tracking and reprinting, addressing, pre-sorting or cleansing. Compounding the problem, print operations, need to extend the life of legacy applications by updating and enhancing them, enriching them with color, adding electronic forms, personalizing inserts—and repurposing documents for delivery across electronic channels. The inability to add value to documents exacts a tremendous opportunity cost and difficulty competing in an increasingly competitive market.

Convergence

Born of the need to improve efficiency and do more with less, convergence brings together all types of formerly segregated elements—transaction and print on demand, offset and digital, print and electronic delivery, a diverse array of print streams and applications, monochrome and color, and centralized and distributed print. It also encompasses the ongoing mainframe migration to a client-server environment.

And while convergence offers new opportunities, it requires fundamental changes in business processes, including the need to centrally control and track the entire document production process, to provide a smooth and seamless workflow, to print to any capable device and handle multiple and emerging job ticket formats such as JDF®.

One of the most exciting developments in this area is the TransPromo revolution—the convergence of transactional and promotional documents to create a new breed of hybrid documents that use the white space in bills and statements to deliver targeted messages with full-color imagery and/or highlight color text. TransPromo documents—expected to grow by more than 90 percent over the next five years—

combine data-heavy content about the status of customer transactions with personalized marketing messages and a call to action to cross-sell and up sell customers. In fact, a recent InfoTrends study[2] examined consumer behavior and preferences and found that consumers have a strong preference for highly personalized direct mail and for TransPromo documents.

Because they're transactional in nature, TransPromo documents are produced using a transactional workflow—with the same tight service level agreements, and closed-loop integrity, reprints, and document tracking requirements, plus the challenges of bridging the divide that often separates marketing departments and data centers. As a result of convergence, growth projections for print volumes are changing. Studies predict that volumes for standard, monochrome transactional printing will decline while volumes for digital color transactional and TransPromo documents will continue to grow.

Documents, print streams and environments are not the only aspects of document production that are converging. Delivery channels are converging as well. Today, customers want the option of having communications delivered via hard copy, email and/or the Web—or a combination of channels. While data for these e-documents is derived from the same databases as hard copy documents, issues arise when the content in electronic documents differs from their hardcopy counterparts because they use different business logic. Being able to create hard copy and electronic documents from the same print stream simultaneously ensures consistency and can save millions of dollars. But it takes a robust output management system to get the job done.

What's more, black and white and full process color documents are converging. As businesses embrace the benefits of digital color, they need to be able to accept pre-composed print files in any format, to process color documents correctly to both color and black and white devices, and to add value to color job files—including mail sorting, merge/batch processing, adding marketing messages, changing fonts and more. Like conventional workflows, they need to be able to move color work across production sites and provide seamless continuity.

Regulatory Compliance

Today's organizations are under increasing pressure to meet government and regulatory compliance requirements such as HIPAA, Sarbanes-Oxley, and SEC rule 17a-4, especially in the healthcare, insurance, telecommunications and financial services industries. The content of many transactional documents is subject to regulations that require accurate production and timely delivery. As a result, there is an increasing need to automate manual processes that are prone to output errors, whether it's submitting a job incorrectly (incorrect resources, stock registration) or problems with manual error recovery or reprinting. Print operations are under pressure to achieve 100 percent document and mail-piece integrity with precise piece-level tracking, and accurate cost accounting.

The Bottom Line...

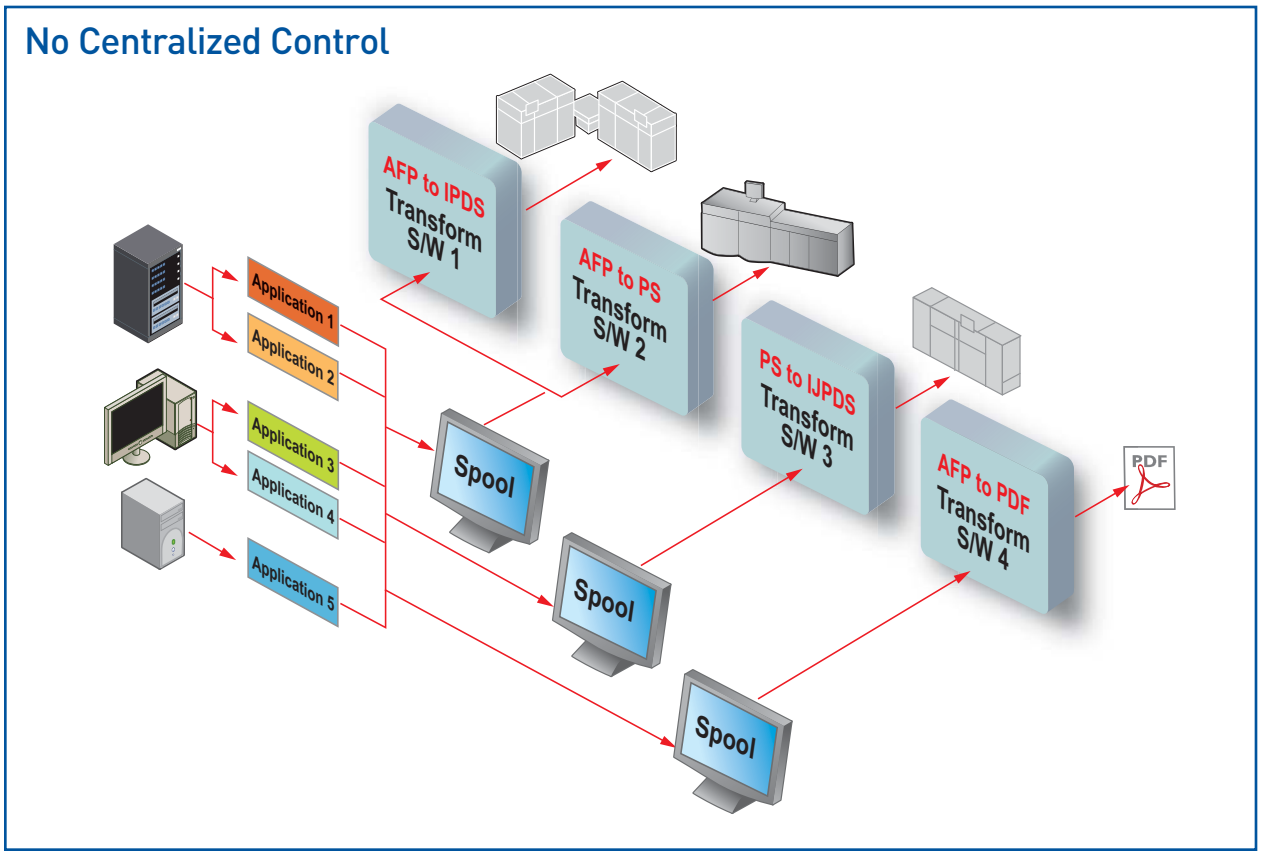
The bottom line? All of these challenges are occurring at a time when there is constant pressure to reduce costs and boost profitability, creating the perfect storm of output management challenges. Clearly, there is tremendous need for a centralized output management solution that centralizes operational control, and automates time-consuming manual processes to optimize throughput and asset utilization, reduces costs, meets service level agreements, and ensures compliance with regulatory requirements.

[2] "The Future of Mail 2006-Direct Mail, Transaction, and "Transpromotional" Documents, InfoTrends, Inc. December 2006

Planning for success? What to look for ...

Now that you know what an output management system is and how it can help you achieve higher productivity, how do you select the right solution? For starters, look for a system that is printer-agnostic—an open system that isn't tied to a single printer vendor or technology. Make sure it is feature-rich and flexible enough to meet your needs today and is modular, adaptive, and scalable to keep pace as your needs change. Failure to adapt will limit growth and ultimately ROI gains. Look for a solution that satisfies these basic criteria:

- **Open, vendor-independent architecture**—it should support "any-to-any" output that makes better use of your resources. Successful output management must be built on an open, vendor-independent platform. It should accept any print stream (AFPDS, LCDS/Metacode, PS, PDF and PCL) and should be able to drive any printer, including cut sheet, continuous feed and inkjet. It should ensure that all print engines throughout a corporation, data center, service bureau, or commercial printing operation are used in concert to produce documents when and where they are needed. In addition it should support open APIs, require no application changes, and include convenient customization capabilities.
- **Centralized control**—it should provide a central point of control to track and manage all output and jobs across the enterprise, a single GUI for all jobs entering the print center, automated job routing, and support for all input and output connectivity including channel extenders, TCP/IP, and SCSI. It should allow controlled, multi-site distribution and routing for workload balancing and disaster recovery.
- **Intelligent file-based processing**—it should support file-based processing to the job and mail-piece level, along with indexing, reprinting and job integrity features. Look for a system that supports automated sorting, including mail pre-sorting and splitting.
- **Color support**—this includes color applications being sent to black and white printers. Make sure it drives the printer efficiently and provides the tools you need to add color to legacy black-and-white documents.
- **Real-time document re-engineering**—it should provide a robust tool set for streamlining legacy workflows and conserving legacy documents, without having to reprogram the host application, with minimal impact on SLAs.
- **Central operational data collection**—it should provide centralized tracking, monitoring and reporting into a central accounting system, with real-time device, SLA, and operator monitoring and tracking. Look for a robust reporting system that measures productivity, adherence to SLAs.
- **Seamless delivery of documents**—from any hardware platform or software application to any delivery channel including print, email, or Web. It should enable you to take advantage of newer document delivery choices such as the Internet and presentation XML without the need for a major overhaul. Improved management of finishing systems—it should give you the flexibility to modify, add, or delete finishing marks to control finishing equipment or direct jobs to different finishing lines based on availability.



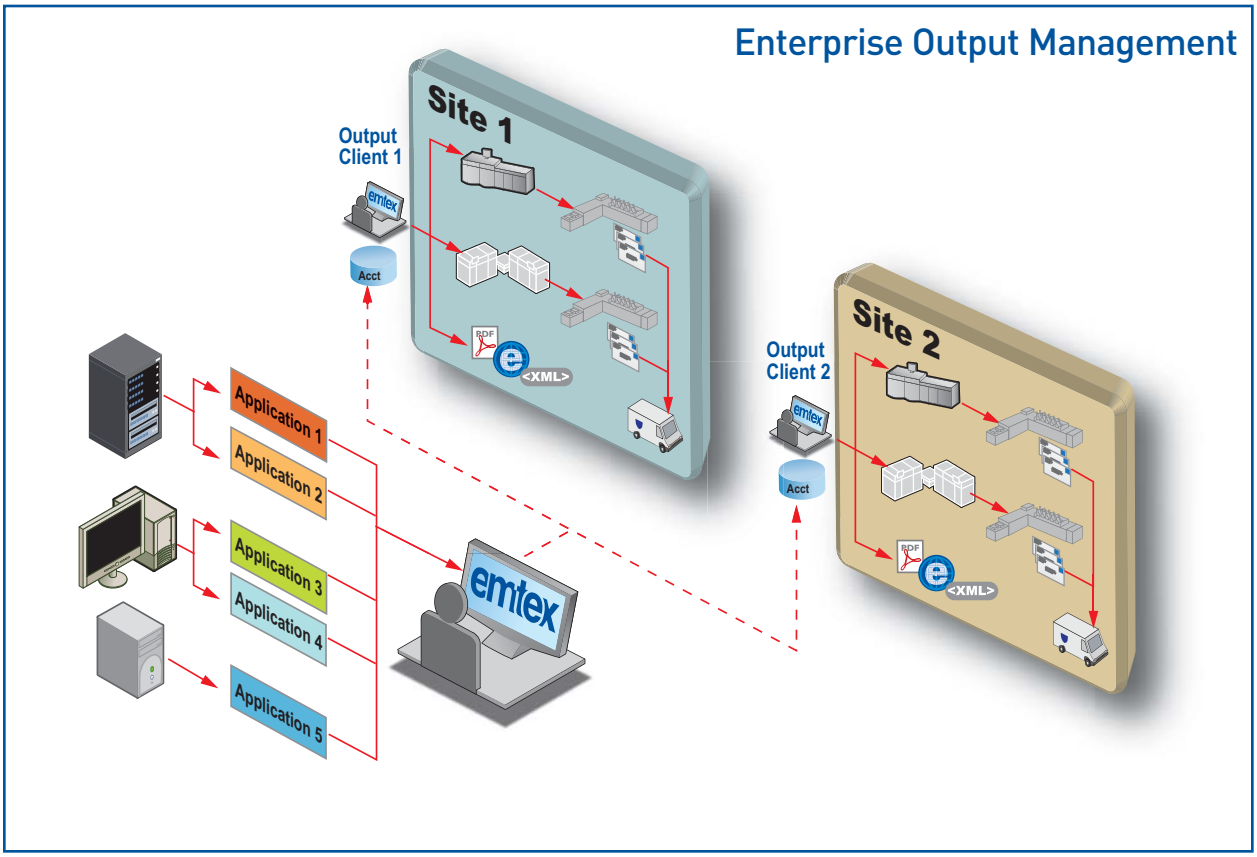
The pitfalls of limited centralized control

One of the most difficult challenges that modern document production and print-to-mail operations face is a multitude of point solutions. A lack of centralized control makes it difficult to use devices and resources efficiently, preempts effective workload balancing and disaster recovery and results in fragmented data collection and accounting. Without a centralized solution, print operations struggle with errors and inconsistency in data collection and an inability to transform data into business intelligence.

Challenges:

Lack centralized printer control, resource management and job-level accounting and reporting

- Inaccurate and time-lines of job status information
- Under utilized assets
- Inefficient reprint process
- Job/workflow management – limited work load balance capability
- Inability to automated multi-site job distribution for workload balancing and disaster recovery
- Lack end-to-end job tracking and reporting
- Limited value-add offering
- Ineffective integrity and compliance workflow



The solution: a centralized output management

With a centralized output management system, print operations benefit from maximum operational efficiency and a central point of control that enables print operations to track and manage all output and jobs across the enterprise. What's more with a single GUI for all jobs entering the print center, automated job routing, and support for all input and output connectivity including channel extenders, TCP/IP, and SCSI, it enables a controlled, multi-site distribution and routing for workload balancing and disaster recovery.

Advantages

- Single point of control for all output – prioritization and SLA management
- Efficient resource management
- Single source for accounting
- Significant added value
- Reduced /eliminated human error
- Single GUI – minimizes training
- Single job viewer

Added Value

- Automated reprints
- Any-to-any output
- Rapid document re-engineering
- Workflow optimization
- Closed-loop reprint and integrity
- Maximized postal discounts

Benefits

- Lower cost of operation
- Maximize asset utilization
- Increase compliance opportunities
- Achieved SLAs

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Pitney Bowes Emtex Software Output Management Solutions

Freedom in Document Workflow

Pitney Bowes Emtex Software is the industry-leading provider of innovative output management (VIP™, VDE™, FlexServer® and OptionPROM™) and Automated Document Factory (ADF) solutions, that enable organizations to route, transform, track and analyze production workflow, Emtex output management solutions are in use at more than 800 production sites worldwide, across several vertical industries. The company's mission is to develop, manufacture, and deliver best-in-class document output management solutions that help customers streamline document workflows to improve efficiency, add value to business communications and increase profits.

Emtex output management solutions integrate proven software systems to provide high-volume production centers with an open, scaleable, vendor-independent solution that enables real-time "any-to-any" transformations, print stream and document re-engineering, the ability to modify and enhance print-ready documents, and provide real-time device and job tracking, monitoring, accounting, and reporting. Agile, adaptable, and modular, the Emtex output management architecture delivers new intelligence, providing a simple, automated way to detect inefficiencies, boost productivity, and drive profitability.

Emtex VIP (Virtual Intelligent Presentation)

Centralized job control and "any-to-any" document output

Emtex VIP software is an open, industrial-strength Windows-based print management system that optimizes the document workflow and eliminates the limitations of proprietary vendors and print streams. Emtex VIP incorporates flexible print stream transformation, centralized resource management, and output device independence. This enables applications designed for one printer to be output to any printer regardless of manufacturer. In addition, VIP can deliver output to a variety of electronic channels including email, archival systems or e-commerce systems such as EBPP and eCRM systems.

Emtex VIP can track activity by job for reporting and accounting purposes. A user-friendly drag-and-drop interface allows operators to see all jobs and all printers managed by the system. Robust print management functionalities include everything from print stream transformation, resource management, and automated reprinting to enhanced production control and convenient viewing before, during and after output. VIP transforms nearly all inbound files into the Virtual Dynamic Document (VDD) format, and then transforms VDD to the target printer format as data is sent to the printer.

Emtex VDE (Virtual Document Enhance)

Real Time Document Re-engineering

Emtex VDE is an extremely powerful print stream manipulation and application re-engineering solution that makes it easy to modify and enhance legacy applications and print streams including AFPDS, Metacode/LCDS, PostScript, PDF and PCL. Emtex VDE combines a powerful transformation engine with an all-points-addressable search-and-change engine that lets you update documents without changing the underlying business application system. Emtex VDE re-engineers the print stream itself, making changes at the end of the production process to extend the life of legacy documents, increase productivity, and improve end-to-end document production integrity. The VIP transform engine converts all common PDLs into VDD format, enabling complete control over the document, independent of both the input and output print stream formats and resolution. Emtex VDE can process almost any print stream, modify and enhance it, and then output an entirely different print stream and/or electronic format (PDF or XML). Jobs can be modified to reposition or change OMR, barcodes, and other finishing marks to send them to any finishing line.

The versatility and flexibility of VDE extends to improving postal optimization by consolidating mail-pieces through merging disparate applications to a single envelope (household) or moving address block to support flat-to-fold.

Emtex FlexServer

Simplified multi-site and enterprise output management

The key to improving processes and documents is intelligent document management technology that optimizes every step of the workflow—from job event alerts to job level tracking to managing finishing devices. Emtex FlexServer is an advanced, Unix-based enterprise output management solution that reduces costs by automating manual processes, balancing workloads, and maximizing print assets. Emtex FlexServer collects job from multiple sources through standard connections or dedicated, host-resident job submission clients (e.g. JESConnect used to pull jobs from an IBM JES spool) to provide centralized job reception, work selection automation, accounting, and reporting. A user-friendly drag-and-drop interface allows operators to move jobs between printers and across sites as allowed by system security. The FlexTrack module enables operations to track jobs beyond printing, while the FlexAlert module provides notification via popup window, email, or phone/pager when specified events occur or if a job fails to change status within a specified time period.

Business Benefits of an Output Management Solution

An effectively implemented output management system can deliver a host of business benefits. By providing a single point of control for all output, intelligent resource management, a single source for accounting, and minimizing errors and delays, you can reduce your cost of operation, utilize assets more efficiently, ensure tighter regulatory compliance and achieve service level agreements.

Operations staff gain greater control over their print production, and can make last minute document or job priority changes without involving application resources. Companies gain the flexibility to re-engineer more workflow over a longer period using the same output management resources, which not only adds value to the initial technology investment but protects that investment for the long-term as the output management system enables print operations to repurpose and adapt applications to keep pace with change. With a robust solution in place, organizations can:

- Centralize control and prioritization—replacing duplicate, redundant workflows with a single point of control, a common workflow, centralized resource management and comprehensive accounting
- Improve multi-vendor performance—maximize device utilization, improve service level agreements, protect your capital investment and minimize operator training
- Boost multi-site efficiencies—with streamlined operations, more efficient use of resources and equipment, intelligent scheduling
- Reduce costs for multi-vendor/site operations—lower IT costs for CPU, spool and support, no need for host PSF licenses and alternatives to channel extenders
- Add capabilities—simplified reprinting, centralized resource management, job-based alerting, report generation and accounting
- Add value to legacy applications—add color, marketing messages and inserter marks
- Capitalize on new opportunities—take on more applications without adding equipment
- Ensure compliance and integrity—with accounting, chargeback and MRDF creation
- Maximize asset utilization—use job splitting and merging to balance workloads across multiple devices and/or multiple sites to improve productivity and maximize resources
- Increase customer satisfaction—provide timely, accurate job status information
- Enable an effective disaster recovery/business continuity solution
- Improve billing accuracy—provide bills that are more accurate, accelerating payment and reducing disputes
- Satisfy regulatory compliance requirements with full accountability and auditability
- Postal Optimization - consolidating mail-pieces through merging disparate applications to a single envelope (householding) or moving address block to support migration to flat-to-fold.

Case in Point

As mentioned throughout this document, the benefits of implementing a robust output management solution can deliver all types of immediate returns. These case studies illustrate the advantages of integrating Emtex production intelligence into the workflow to support an intelligent output management solution.

World Marketing

World Marketing provides integrated direct marketing and critical document solutions for Fortune 1000 companies in retail, travel, financial services, government and other industries, helping its clients produce personalized documents that leverage customer relationships to drive more revenue. For World Marketing, the key to success is an infrastructure that gives total flexibility and job integrity across multiple production sites and printer platforms.

Challenge

World Marketing's complex personalized print applications involve a variety of print streams, production requirements and finishing choices. However, in the past efforts to automate workflows were hampered by engine-specific processes and impractical reprogramming workarounds.

Solution

World Marketing turned to Emtex for flexible print stream transformation, centralized resource management and output device independence. The company implemented Emtex VIP, an open, industrial-strength output management solution that helps the company achieve the flexibility it needs by transforming any job print stream to any output device. Today, World Marketing uses Emtex VIP to drive 26 high volume continuous feed systems at production sites in Atlanta, Chicago and Dallas. Emtex VIP provides a single point of control for managing the equipment and applications in all three locations. As a result, World Marketing is maximizing all of its printing devices, independent of vendor or type and has total flexibility to print any job to any printer, which keeps workflow moving and supports SLA commitments. And, of the 15 million mission-critical first-class mail images that World Marketing produces every month, Emtex touches 11 million pages, enabling the company to produce personalized government mailings, proof of insurance, letters and statements without missing a beat.

Antares Information Technologies, Inc.

Antares Information Technologies, Inc. is a leading U.S. database management and direct mail service bureau that provides its clients with innovative solutions to enhance communications to its customers, investors, and employees.

Challenge

Antares wanted to enhance its high-volume document output infrastructure. Daily capacity reached six million letters with volumes of 350 to 400 million impressions per year. However, Antares didn't have a centralized management system for its output devices and needed a low-risk migration path to transform its existing infrastructure into a high-volume ADF.

Solution

Antares implemented an output management system from Emtex to take its document processes to the next level and set the stage for a future ADF implementation. Today, Emtex VIP software gives Antares centralized control of its print operation, enabling the company to maximize production by preloading print queues. Output can be distributed and workloads balanced across several available devices. And Emtex VIP can quickly re-spool and reposition production between printers to use resources effectively—without disrupting the workflow.

The Emtex VIP solution already has delivered significant benefits, enabling Antares to improve flexibility with print stream and host independence. The output management system offers a solid platform for ADF automation, which has generated an increase in productivity of 10 to 15 percent across the board, which in turn reduced staff workload and production costs.

AXA Insurance

AXA Insurance is the third largest general insurance provider in the UK and serves the insurance needs of more than 50 million customers in more than 50 countries around the world. A world leader in wealth management and financial protection, AXA manages funds valued at more than 742 billion Euros. AXA provides advice and guidance to both individual and corporate customers on a variety of financial products and services ranging from investments, life insurance, and retirement planning to long-term care, asset management, health, automobile and homeowners insurance. AXA Tech is a subsidiary of AXA Insurance and is responsible for IT service delivery that encompasses production printing of mission-critical transactional documents for the insurance leader.

Challenge

When AXA Tech wanted to consolidate 12 print centers into two centers of excellence to unify processes, balance workloads more effectively, improve asset utilization, update and add value to legacy applications without application changes and reduce costs, the print team turned to Emtex. Specifically they wanted a single print management system that could receive data and single-spool to some 15 production printers across two sites and standardize output architectures to AFP.

Solution

AXA Tech implemented Emtex VIP to unify the AXA print environment and improve operational flexibility by enabling any-to-any transformations, centralized printer and resource management, smooth connectivity and ease of integration. Emtex VIP was integrated with a data archiving and repository station through a VIPConnect API as well as a custom interface to AXA Tech's own job control database. AXA Tech implemented VIP in a multi-level user interface configuration that offers three layers of control, eliminating the need for mainframe operator skills, while improving operator viewing. Now AXA Tech operates with complete host, print stream and vendor independence and has significantly improved workload balancing between the two print centers. The company also benefits from full GUI job queue management for all print streams plus centralized resource management for improved output integrity.

Allison Payment Systems

Allison Payment Systems LLC is privately held, 118-year old printing company based in Indianapolis, Indiana. Allison provides a broad range of highly customized data processing and personalized printing solutions for many of the nation's largest banks, insurance companies, utilities and financial services providers. With 3000 employees and annual revenues of more than $ 400 million Allison Payment Systems produces more than 1.9 billion transactional print and electronic statements and documents annually and is the largest third-party First Class mailer in the United States.

Challenge

When Allison had to get a dedicated operation up and running in 60 days to print and mail huge volumes of Medicare documents—checks, letters, EOBs and reports for Medicare recipients in multiple states—the company turned a warehouse into state-of-the-art production print and mail facility in 45 days … with the help of Emtex FlexServer.

Solution

Although the timeframe seemed impossible, Emtex and the FlexServer team helped Allison get off to a fast start, providing a vital link between the customer's computer system and the array of printers at Allison. A JES stripper on the customer's MVS mainframe automatically sends data to Allison's FlexServer. Jobs are sent to FlexServer, which routes them to the printer where IBM InfoPrint™ Manager converts AFP to IPDS. Allison can monitor all production equipment, incoming work, and queued work across the WAN. As files come in, FlexServer routes them to the appropriate printer based on priority, application requirements, printer resources and machine availability. The jobs passing through FlexServer also are tracked for billing purposes, adding speed and accuracy to the billing process. Today, the workflow and operational efficiencies deliver ongoing benefits, but the most important aspect of the FlexServer Medicare solution was that it was accomplished ahead of schedule in an extremely limited timeframe, underscoring the product's ease of use.

Summary... the Future

Make no mistake. When it comes to today's rapidly changing document production landscape, the only constant is change. And the best way to turn rapid shifts into new opportunities is by combining an intelligent output management solution with a smart output strategy. Organizations must be able to centrally manage jobs, documents, devices and processes; take control of distributed printing; reduce costs and bottlenecks, improve staff and device utilization; ensure regulatory compliance and balance workloads across devices and sites to meet—or exceed—SLAs. An effective solution must incorporate advances and solutions for the future. Already, those advances are emerging from the innovation pipeline, promising the next generation of super-efficient process improvements.

Many print operations currently have implemented one output management system for transactional printing and another for publishing/print-on-demand work. As convergence propels us toward an increasingly digital full-color world, jobs from both environments are being directed to the same devices. As a result, the right output management solution will bridge both environments, enabling devices to be switched from transactional to publishing printers with minimal setup.

The next generation of output management systems will support both types of workflows from a single system, enabling users to further optimize asset utilization, workflow and reporting. And as complexity continues to increase, new page description languages like PPML and XPS will join PostScript and AFP as the de facto standards.

In a business that changes at dizzying speed, it's clear that the challenge of managing legacy PDLs isn't going away any time soon. Pressures to manage multiple PDLs will continue, as well as the need for transformation, centralized control, and re-engineering will change.

It's only with an output management solution that delivers production intelligence across multiple platforms, workflows, environments and locations, that organizations will be able to achieve higher levels of efficiency, cost savings, and business value. And it's only with a scaleable solution that provides a solid foundation for migrating to a starter or intermediate Automated Document Factory that print operations will be able to protect their technology investment tomorrow—while taking advantage of every opportunity to outperform the competition today.

References:

"The Future of Mail 2006-Direct Mail, Transaction, and "Transpromotional" Documents, InfoTrends, Inc. December 2006

Pitney Bowes
emtex software

Emtex Limited UK

Emtex House, Station Road,
Kings Langley, WD4 8LH, United Kingdom
Tel: +44 (0) 1923 270882
Fax: +44 (0) 1923 266020
Email: info@emtex.com

Emtex Software, Inc.

901 Yamato Road • Suite 120
Boca Raton, Florida 33431 · USA
Tel: +1 561.241.7229
Fax: +1 561.988.9561
Email: info-usa@emtex.com

For more information about our products and services, please log onto our web site: www.emtex.com

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