CRAWFORD TECHNOLOGIES

Meeting Business and Customer Needs in the Digital Enterprise

Extending Documents Through Transformations

Introduction

The term "transformation" is used to describe any dramatic change. We've built our reputation helping clients make dramatic change – fundamental transformations in the areas of process efficiency, operational savings and information accessibility. Indeed, for over 20 years we have helped over 1,800 organizations around the world use our award-winning print-stream transform technology for high-value, high-volume document production and workflow; and the improvements are impressive.

But we find that organizations today are looking for more. They have a desire to not just change how they do business, but to truly transform into a more agile, responsive and effective organization in the face of digital transformation. That's where we come in. We believe that CrawfordTech has the tools and expertise to help you effectively transform your business in areas that make a difference.

Our suite of transformation tools are known as the most efficient and comprehensive way of converting print and data streams from one format to another. But did you know that there are many possibilities to extend the value of our technologies beyond what they are commonly associated with? The potential includes benefits in the areas of Production, Archive and Business Optimization, and we're eager to share.

This paper will briefly describe how our transform and conversion tools can translate to a broader world of digital transformation and business optimization. We're a respected leader in print stream transform technology, and now we'd like you to consider additional possibilities that you may not have associated with CrawfordTech solutions in the past and ways you can use these tools to transform your business.

Approaches to Business Transformation

While rooted in a long and proven track record of expertise and dependability, our transform technologies are NOT your grandfather's Oldsmobile. The tools enable a variety of business benefits that extend into a number of key business areas. Here are just some examples to consider:

Production Efficiencies

Normalizing PDF's

Many organizations use PDF as a common print platform in order to establish a more efficient production workflow. PDF also has the added benefit of being a standard format for archiving, production and online presentment. workflows.

Often organizations find that software used to create large multi-document PDF files can result in cumbersome and inefficient PDF files. That slows production and increases production costs. We also offer solutions that perform a number of important normalizing and optimizing functions — improving production efficiency and savings when working with PDF files. Our

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PRO PDF Normalizer can go through a PDF file and restructure it to produce a far more streamlined PDF that will perform much better in printing, archiving and other processing steps. Tests have shown that PRO PDF Normalizer runs two to four times faster than competitive products.

Use Case

One example of how our PDF normalization is being used in the real world is found in the story of one large PSP in the Northeast United States. They commonly received "print-ready" PDF files from their clients, but many of their customers' files were taking hours to process, or would even fail, slowing down or disrupting the entire production process. The impact on efficiency, and ultimately on profitability, was significant and threatened on-time delivery to their customers.

This PSP was becoming extremely frustrated with their inability to properly handle poorly formed PDF files and adopted our technology to improve production and turnaround standards. PRO PDF Normalizer they now optimize and enhance their PDF files to maximize throughput for all aspects of their print production. By standardizing the PDF's structure they were able to eliminate repetitive graphical elements, duplicate fonts, and poorly structured font character sets; all of which were impeding efficiency and service levels. Optimized PDF files have other benefits too. They result in smaller sized files, which not only cost less to store and manage in archives, but are also faster to load and read by customers when they access them online.

The result? This print service provider dramatically reduced PDF file sizes, resulting in faster printing and more efficient archiving. Indeed, files that had previously taken seven hours, or 420 minutes, to process are now finished in less than 20 minutes – an improvement of 2000%. Fewer resources are required to prepare, troubleshoot and modify the PDF files, saving additional time and money. They also no longer need to consider expensive server upgrades in an attempt to improve processing speed.

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Concatenation

Increased printing speed, the ability to improve service-levels, and the elimination of costs associated with buying and storing preprinted shells are just some of the compelling reasons that companies use our transform technology. But attaining optimal production efficiency is difficult to do when your print streams are full of small jobs in a mixture of formats. Indeed, capturing the full value of any production printing investment requires more than simply purchasing and installing the hardware; intelligent and thoughtful strategies are needed to maximize ROI.

That's where our transform technology comes in again; this time in the form of PRO Concatenator, which gives you the ability to combine multiple PDF and print files in order to maximize the return and value of production-class equipment like inkjet presses and automated mailing equipment. By optimizing print ready files for production you keep high

speed machines running efficiently by combining small jobs, optimizing batch sizes, and minimizing press setups and roll changes. At the same time, re-sequencing diverse print jobs and output files allows for maximum postage rate savings and automated mail processing efficiencies that are simply not possible otherwise. Printing and archiving efficiency is improved as well since we remove duplicate resources when joining multiple files, significantly reducing the resultant file size.

Use Case

One large American stock brokerage firm uses PRO Concatenator to join together and batch rising volumes of individual trade confirmation documents. With over 13,000 financial advisors on staff, the number of trades performed every day was in excess of 300,000. As a result, their print service provider found it increasingly difficult to keep up. Completing the job reliably within a 24 hour period was not an SLA that the PSP could undertake.

Using PRO Concatenator, the brokerage is now able to batch 50,000 to 80,000 individual trade confirm print files together into a single print file. This results in a much more production-friendly print file that has streamlined the printing processes significantly. On a daily basis they convert the output to a fully optimized formatted file and transmit that file to their print service provider. Transmission times are down, and in addition to reducing printing and mailing costs, they are able to efficiently archive those client communications, complete with audit logs to ensure compliance with reporting regulations. The upshot is that the brokerage company now uses a modern application aligned with their strategic objectives for savings, efficiency and turnaround performance.

Archive Effectiveness

PDF for Archive

PDF is a standard format for archive, but not all PDF's are created equal. We all know PDF as the way to encode documents in an "as printed" form that is portable between systems. But the suitability of a PDF file for archival is entirely dependent upon the various options chosen when the PDF is created – for example, whether or not the fonts are embedded for rendering or whether the document is encrypted or not.

PDF/A was created specifically for archival. It is an ISO-standardized version of PDF that is specialized for the digital preservation of electronic documents. The "A" stands for "Archive" and addresses the need to retain documents in a way that preserves the content over time and while ensuring that those documents can be retrieved and rendered with a predictable result in the future. PDF/A eliminates certain risks threatening the one-to-one reproducibility of the content while making sure that the user sees the exact same content both today and for years to come.

Our tools are designed as a platform from which to create and manage PDF/A. We transform a wide variety of print stream types – AFP, PCL, PDF, PostScript, DJDE, Metacode, PDF/A, and many others – into PDF/A format ready for archive. In doing this, we capture relevant

metadata that forms the index and search criteria used to store and subsequently locate specific documents once they are in the archive. Indeed, PRO Transform Plus is used by the largest producers of transactional customer documents in the world and allows you to transform mission-critical transactional document print streams into PDF/A without the need for reprogramming.

Use Case

Dominion of Canada is one example of how companies are using CrawfordTech transform technologies to create PDF/A. Dominion is one of Canada's largest property and casualty insurers. As a result, they have an ever-rising volume of policy declaration documents to manage and archive. A continued reliance on paper was becoming a burden for both the company as well as their network of brokers. Since no online archive was available, each broker received a paper copy of every policyholder's policy declaration document for their reference.

The mountains of paper became unmanageable and Dominion now uses our transform technology to covert the original print files into PDF/A. As a result, brokers have replaced their paper copies with electronic images they can read online. The archived versions mirror the printed versions exactly and eliminate the cost and inefficiency of relying on paper. Since PDF/A is the ISO standard for electronic document archiving, Dominion is confident that their approach will meet their immediate needs as well as their long-term archive requirements. Brokers are now able to find documents quickly and easily, which translates into better service for their clients, and Dominion's operations team is seeing reduced expense in paper and production; saving trees and money.

> **The largest producers of transactional customer documents in the world use our technologies to transform their documents and processes without the need for reprogramming.**

Redaction

Breaches in data security and cyber-theft is a very real threat to organizations of all sizes and from all industries. The headlines are full of reports of hackers breaking into data networks and information stores and making off with thousands, if not millions, of sensitive records. As the many high-profile reports warn, even the most security-savvy organizations are at risk. To make matters worse, many redaction tools in place only cover up the information, but leave the data in the file, which means it is still available to even a novice hacker.

Organizations are continually looking to stay one step ahead as a result. One way to do that is by using our automated redaction tools to transform the risk into an operational advantage. Our Redaction Express tool, for example, helps protect enterprises against the inadvertent and unintentional release of confidential information during the production and archive of transactional documents like bills, statements and other customer correspondence. Sensitive and private information is redacted automatically and as a result enterprises from all industries are able to manage compliance risk more cost effectively. Techniques like one-step redaction across all print streams and document types means that all outbound documents are automatically analyzed for potential breaches of confidentiality.

We built our redaction tools from the ground up to meet the needs of even the most challenging industry and regulatory constraints for information privacy. Indeed, CrawfordTech is the tool of choice when there is a need to redact information from print streams, PDFs and composed documents in high-volume production environments.

Use Case

All organizations need to send and exchange documents of varying types, but each interaction carries with it the risk of inadvertent disclosure of confidential information. For example, you may want to test your print jobs on a vendor's machine before purchasing a full color inkjet press. You ideally will want to maintain the positions of the original characters for valid proofing, testing and comparisons, but since production documents commonly contain personal and confidential information, testing can be problematic and bring up a number of data security issues. Using Redaction Express, our clients automatically redact and protect confidential information on those documents before they are released for testing.

Another example of the value of automated redaction is when an organization needs to retrieve a document from an archive that contains sensitive information. Both external and internal communications need to flow freely in order to support workflow and processes, yet not every destination or recipient has a 'need to know' or have the authorization to view sensitive or confidential information. A customer service agent may not need to see confidential information like a social security number, for instance, but require relevant and immediate access to customer records in order to provide an appropriate level of service. Companies can provide this access while protecting confidential information by using our automated redaction tools to transform documents and redact content based upon the role of the person retrieving the information.

Compliance

Increasingly strict financing regulations continue to set the tone for the global financial services industry. Compliance requirements are on the rise and a number of new rules now require banks, credit unions, broker-dealers, and trust companies to perform more rigorous due diligence as part of their ongoing activities. Firms are required to monitor ongoing account transactions for suspicious activity and have a reasonable basis to know the essential facts concerning every customer account.

One way to do that is by using our technologies to extract relevant information from an archive to provide proof of compliance. Many financial institutions feel the pinch from rising personnel costs as a result of managing regulatory expectations, and our tools provide an automated and complete way to reduce those costs while more effectively mitigating regulatory risk. The fact is that despite the digitization of business today, many financial institutions continue to rely on manual checks on paper or disparate pockets of technology to ensure compliance. This approach is simply no longer practical from a cost perspective, and is no longer sufficient to ensure compliance with evolving and demanding regulatory expectations.

Use Case

Consider the story of one of our clients — one of the largest retail banks in the world — that in 2013 was required to provide legal proof of its compliance with banking regulations by providing a comprehensive analysis of its previous 10 years of customer credit card statements. They approached us to build an automated solution to identify, extract and repurpose the necessary information so the bank could meet those demanding regulatory obligations.

Since customers' credit card statements were archived in an Advanced Function Presentation (AFP) format the information was not easily extracted and formatted in that native form. CrawfordTech tools were used to and convert the data extracted from AFP into XML and then place the XML data in the bank's data warehouse where it would be validated, analyzed and properly reported. The approach automatically retrieves statements from the archive and identifies and extracts all of the required data needed for verification. The selected statements are pushed through an analytics system and analyzed for potential overcharges and over-payments, so that the bank could determine if customers were owed money and needed to be reimbursed. As a result, the bank avoided unnecessary legal action and costly fines for noncompliance while proactively dealing with any customers who may have been improperly charged.

Business Optimization

Accessible PDF

New legal requirements are driving organizations to evaluate their strategy for accessible business documents. The goal is to properly serve all their customers that cannot access traditionally produced business documents. The three dominant pieces of legislation in North America focused on accessibility for the visually impaired are Section 508 of the Rehabilitation Act, Title III of the Americans with Disabilities Act (ADA), and AODA legislation for the province of Ontario in Canada. Both laws are very clear in stating that both hardcopy accessible versions and the availability of electronically accessible versions must be made available by all organizations.

For the blind, partially-sighted, and for those with cognitive disabilities, the ability to access bills, statements and other transactional documents means greater independence. With over 21 million North Americans having profound visual impairment, governments and corporations alike are seeking to eliminate the barriers in providing reasonable accommodation for customer communications.

Crawford Technologies' document accessibility tools help transform transactional documents like invoices, statements and customer correspondence into alternate formats in braille, large print, audio, e-text, and and Accessible PDF in WCAG 2.0 AA formats. Retail banks, wealth management companies, credit card issuers, utilities and telecommunications companies,as well as government organizations, all benefit from the option of creating these specialized alternate format customer communications.

New requirements are driving organizations to reevaluate accessible documents. Our tools transform customer correspondence into alternate formats like braille, audio and Accessible PDF.

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Use Case

Consider how a student loan servicing center in the United States is handling document accessibility. In October of 2014, the National Federation of the Blind reached an agreement with the U.S. Department of Education (DOE) regarding document accessibility. With this settlement, student loan servicing companies, contracted by the DOE, must make all communications, including forms, websites, and other documents that are part of the DOE's Direct Loan program, accessible to blind, partially sighted or those clients with cognitive disabilities. To be in compliance, this loan servicing center needed to deliver material in multiple access formats, including Accessible PDF, voiceover, and additional popular alternate formats such as Braille, Large Print and others.

Because they received PCL print files with no hierarchical structure, and had no access to the content creation or composition tools, this provider needed to be able to convert thousands of documents quickly and automatically. Pro Transform for Accessible PDF was used to convert these files to Accessible PDF for e-delivery and archiving. The servicing center is now in compliance, and their document recipients are able to consume personal and confidential information independently.

Moving Forward

As you can see, both new users and existing customers can benefit from CrawfordTech technologies to transform their business. New users benefit from our years of experience and a proven track record of implementing solutions that address a wide range of business needs. Existing customers benefit by extending the value of their existing investments and leveraging a simple and affordable upgrade path to do so.

To find out more we invite you to visit CrawfordTech.com for more information about our transforms and technologies. Or call us toll-free at 1-866-679-0864 to discuss how we can help you save money, build efficiencies, ensure compliance and increase organizational performance.

CrawfordTech Solutions

Crawford Technologies develops software and solutions to help enterprises optimize and improve the secure and accessible delivery, storage and presentment of their customer communications.

With over 1,800 customers on six continents, CrawfordTech solutions and know-how enable the largest banks, insurers, healthcare providers, utilities and print services companies to use their existing technologies, documents and data in new ways. We help them navigate the challenges in leveraging legacy applications in the platforms and applications of the future.

CrawfordTech's products, services and domain expertise reside at the nexus of content, data, and output management and are essential components of our customers' digital transformation, output management and document accessibility strategies.

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