

# Leaning the Paper Process

*How M2 Global streamlined and automated its business-critical document management process.*

Douglas Carlberg



The paper chase at M2 Global Technology, Ltd. was the order of the day in the summer of 2007, when we decided to end it once and for all. The San Antonio, TX-based company, a worldwide supplier of microwave components and technical manufacturing services, was on the threshold of breaking into the aerospace and military markets.

The additional document management requirements, already a challenge at this ISO 9001- and AS9100-certified plant, would spike and add new complexity to the company's document management process. On aircraft parts such as canopy hinges for the 22 Raptor and F-35 Joint Strike Fighters, M2 Global would need to retain material and manufacturing process documentation for the life of the plane. For the military customers such as Lockheed Martin, contracts

and paperwork associated with each product sold would have to be kept for at least seven years. Our challenge as a small business: Could we afford the resources needed to maintain all of the documentation?

M2 Global's answer to this situation—leaning out and automating the document value stream—resulted in numerous business benefits. It enabled the company to re-deploy 50 percent of

an associate's workload from paper processing to customer service,

*M2 Global eliminated time- and space-consuming document-filing activities, thanks to its paperless document management system.*

eliminate walls of filing cabinets, and begin eliminating the need for offsite archival file storage. Best of all, the solution put business-critical documents at the fingertips of every associate, enabling them to spend more time doing their jobs rather than searching for documents.

### The Paper Problem

M2 Global's documentation challenge hindered productivity. Along with the document management requirements

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demanding by quality certifications and their new customers, the company's business model required using and managing a high volume of documents. As a low-volume, high-mix manufacturer of custom-designed products, M2 Global maintains drawings and specifications for more than 3,000 designs. Every year, the company adds an average of 300 new or re-designed products. The document value stream of a single part can

include paper documents, e-mails, phone call records, faxes, test results of manufacturing processes, pictures, and other electronic documents.

With electronic documents, incompatible electronic file formats



*Files containing thousands of product designs and specifications represent the many custom-designed products M2 Global offers its customers.*

couldn't be co-located easily into electronic folders. To find several electronic documents for one product or customer, associates searched several drives on the server. Because archival storage was maintained on paper, electronic files eventually had to be printed and filed.

The well-known problems of managing paper documents — they either must be located in only one place at a time or be copied — were compounded by M2 Global's integrated lean “quick-turn engineering” business model. Sharing documents among departments (engineering, manufacturing, quality, sales, and finance) must be as seamless as possible. Each department must maintain its own records, with access to the other departments' files. Another complicating factor: Associates frequently needed the same document at the same time. Sometimes associates misplaced files. We used a lot of “sneaker net” (associates walking from one filing cabinet to another to find documents).

With our practice of retaining three years of files onsite, we were getting ready to buy additional cabinets and figure out where to put them. Documents older than three years were collected, boxed, and transferred to an offsite archival storage facility. Sometimes associates traveled to the offsite location to search for a file, a dreaded and time-consuming task.

### A Lean IT Solution

Already recognized as lean leaders (M2 Global won the AME Manufacturing Excellence Award in 2007 and

was selected for a Shingo Prize site visit in 2008), we knew our document management process required changes that went beyond lean. A chance discussion with Brian Kurtz, vice president of sales at etfile, a software company that provides document and workflow management software, sparked our interest in adapting etfile software for M2 Global.

In adapting the application, we held related kaizen (improvement) events. The first task was to identify, in each department, the various documents that needed to be kept. Next, associates developed file-naming conventions (including keyword identifiers) to ensure easy document retrieval. Then associates developed new work processes to integrate the electronic system into existing work processes.

Chris Byram, M2 Global's IT head, oversaw onsite implementation. M2 Global began working with etfile, assigning various levels of access to each associate while ensuring the security and integrity of the documents. The application enabled a simplified, standardized file naming convention. Leadership and associates deployed the implementation in one department at a time, starting with the customer service department in 2008.

### Customer Service

M2 Global associates use stored documents to serve the customer in real-time, routinely referring to them when handling requests for quotes and customer questions.

"The bear for customer service is that we get so many different orders — numerous orders — and so many different types of orders," said Archie Wohlfahrt, director of business development. The company might receive an order or request for quote on an existing product via fax or phone call, or an inquiry for a newly designed part might arrive as an engineering drawing attached to an e-mail. At one point, M2 Global required customers

to submit them via fax to avoid losing orders amid all the e-mails.

"The most powerful benefit for customer service is that we now can group various types of documents associated with an order into an electronic folder," Wohlfahrt said. Associates manage and track purchase orders (P.O.s), engineering change orders, computer-aided design (CAD) drawings, product reports, contracts, and other documents in an archived, secure, central repository. Other miscellaneous documents, such as hand-drawn sketches or hand-written calculations, can be scanned and added to an electronic folder.

"If a customer calls with a question about an order, it's easy to retrieve the P.O.," said Caesar Guajardo, lead customer support specialist. "Previously, we had to take down the P.O. number and go find it in the filing cabinet." Guajardo said that for reorders or for customer changes in order quantity, etc., he can readily pull up related documents.

### Ensuring Quality

Quality was the second department at M2 Global to make the paperless transition. Wayne Richie, quality manager, said two quality checks that depend on easy access to documents occur before and after the manufacturing process. For orders from military contractors, quality performs a contract review; Richie retrieves the original P.O. to confirm quality parameters before sending the current order to manufacturing. Now he accesses the document from the document management system to perform the task.

Once an order is completed, but before it can be shipped to the customer, Richie conducts a certification review of paperwork associated with the product.

"Any product that goes out of here has a massive file document — a package of 20 to 50 pages —

associated with it," he said.

"An aerospace job needs a record trail of everything you do to make a product, which could include any of a number of documents, such as material certification and in-process quality-check certifications," said Warren Larson, senior project engineer. "That's a one- to two-inch-thick file folder multiplied by hundreds of products."

In some cases, certain documents ship with the product because there is no other way for the customer to see that a process has been completed just by inspecting the part. The previous cert hunt — trekking from one department to another to retrieve



M2 Global associates.

documents — used to take about 90 minutes. Now it is a 30-minute task.

One hitch in the process, which associates recently addressed, is tracking materials invoices. Most of the products M2 Global makes require material traceability back to the mill and lot number. According to Richie, the materials invoice that arrives with the material generally goes first to accounts payable, where he previously would go to retrieve it. To streamline the process, associates installed a scanner in receiving, so the invoice can immediately be scanned and is available to both quality and accounts payable as needed.

An additional benefit to electronic

document management is its disaster recovery capabilities. Recalling an earlier fire at one of M2 Global's facilities, Byram noted that the company records are now secure if hard copies are damaged or lost.

### **Toward a Paperless Business**

Now that customer service and quality have fully converted to using efile, M2 Global is targeting the conversion of accounts payable and all document-intensive processes. Controller Bill Blessing can't wait. Within a year, the electronic document system met its return on investment. The major benefit, according to Blessing,

will be finding any document from any order without leaving your desk.

"The last problem is that people still like to keep that piece of paper," Blessing said, acknowledging the general discomfort people feel when moving from a paper-based document management system to an electronic one. CFO Patti Meisetschleager said that as the transition continues, M2 Global associates will spend less time and money managing the documents, while improving customer service. •

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*Douglas Carlberg is the president and CEO of M2 Global Technology, Ltd. He is also president of AME's Southwestern Region.*

