2005 CIPPI Award Winner

Best cost/benefit realization as a result of process automation implementation

Action Printing

Action Printing, Fond du Lac, WI USA. Submitted by Peter Doyle, Operations Manager.

Products incorporated: Muller Martini, Prima with AMRYS (Saddle Stitcher), Creo UpFront Software

Background: The company produces 345 commercial printing projects monthly. Each job requires an imposition layout and a work order. The company's customer service representatives perform these job-planning responsibilities. The old process was to create analog impositions using Microsoft Excel software. This process was time consuming and difficult to learn. Mistakes resulted in wasted plates, paper and machine time.

Prior to this project the company's saddle stitching lines were made ready using wrenches, feeler gauges, and Allen wrenches. All adjustments had to be made by hand. This process required strong mechanical skills. Machines in this environment are commonly started up before all adjustments have been made properly. This results in repeated machine stops for fine tuning and slower then expected run speeds.

Objectives: Our objective with this project was to streamline the saddle stitching process in order to make it more efficient and predictable. With our older machinery trying to predict how fast a machine was going to run and how long it would take to set-up was extremely difficult and frequently in accurate. Excessive variation was measured not only form job-to-job, but also between the machine operators. Predicting throughput is a major management objective at the company. It is virtually impossible to create accurate estimates or establish realistic production schedules with un-predictable processes.

The old process produced variation from two sources: imposition/job planning and the manual machine adjustments by the operator. The standardized layout and production specifications created with the UpFront software allowed the company to eliminate human variation in creating production specifications. Prep, press and bindery personnel carefully check layouts and impositions before they are used for actual production. Once an ideal layout has been created it can be easily re-used for jobs with the same specifications. Job planning at the company has become a "best practice" endeavor.

The AMRYS controller on the saddle stitcher allowed the machine to be consistently set up to the precise measurements contained in the CIP file. Variation in operator adjustment was virtually eliminated from the process. The machine not only made ready faster, but also was capable of reaching the maximum speed quicker without the stop and re-starts associated with operator fine-tuning.

The company's goal is to continuously improve everything that we do –better, cheaper and faster. We always strive to have the quickest make-readies, fastest run speeds and fewest job planning errors. A CIP4 workflow is an ideal fit for our company culture.

Methodology: The project was lead by Peter Doyle, the company's operations manager. Action's route toward using CIP files to automate the machine set-up of a saddle stitcher began in Chicago at the 2002 Graph Expo. Peter and the company's bindery employees witnessed a demonstration at the Muller Martini exhibit, which showed how AMRYS technology directly accepted PPF files created by Creo's Upfront software. When Peter informed the Muller representative that the company was using Upfront as a production-planning tool, the project was launched.

Peter coordinated the efforts between Action Printing, Creo and Muller Martini employees. Introductions and communication between the companies were established. Tests were scheduled and performed. Both saddle stitcher operator and job-planning training was completed. The group met regularly to refine procedures, resolve issues and perform tests. A computer network was created and the electronic connection between job planning and the bindery was established.

Implementation Story: We first integrated UpFront to streamline and standardize the job planning process. This occurred in the year 2001. During the creation of impositions, UpFront improved our efficiency and accuracy

by automatically presenting all of the existing production options in the order of most frequent usage. The UpFront templates are both accurate and laid out to maximize productivity from prepress through the bindery department. Once the job is planned, the completed UpFront templates are sent to our prepress department.

In the fall of 2002 a team of Muller technicians came to the Action Printing site to review our machine and train our operators as to how to keep the machine calibrated so that we could get all of the benefits of an integrated workflow. They also made copies of the CIP files exported from UpFront so that they could be tested at their production plant in Switzerland.

In the winter of 2003 we set up share folders for the exporting of CIP saddle stitching data at the completion of each UpFront layout. Initial testing was done via "sneaker net." A floppy disk was created on Upfront in Action's customer service department and then carried to the AMRYS's PC. Some compatibility issues arose when it was discovered that the AMRYS computer was running Windows 98 while the customer service system was using the 2000 version of the software. Once this issue was resolved cabling was run between the PC at the machine and the file server.

We are now able to makeready finishing equipment with instructions downloaded from a file server and without any manual reentry of information.

Resulting Workflow/Process: UpFront Layout Creation in Customer Service. Export CIP file to a file server. The Muller Saddle Stitcher Operator Finds the saved CIP instructions on the server and downloads these instructions to the machine. The AMRYS makeready sequence is followed and all machine adjustments are made in less then five minutes.

Best cost/benefit realization as a result of process automation implementation: It took our operators 85 minutes to makeready a traditional saddle stitcher this time includes. After the implementation of the CIP workflow we have been able to reduce this to 24 minutes per machine set-up. The machine is not only makes ready faster, but it also sets the equipment up to optimal settings that allows the machine to run problem free at higher speeds. This productivity improvement as allowed the company to reduce their equipment from three saddle stitching lines to two, while also producing 17% more books then the prior year.

Investment

Muller Saddle Stitcher		$580,000
Creo Software and Training		$20,000
	Total	$600,000

Savings

Sale of Used Saddle Stitcher		$20,000
Annual Labor and Benefits Savings		$165,000
	Total	$185,000

ROI= 3.2 years