

## **Cox Target Media**

*Jürgen Schönhut Memorial  
CIP4 International Print Production Innovation Award*

**2008 Winner  
for  
Best Process Automation Implementation — North America**

*and*

**2008 Second Place Winner  
for  
Best cost/benefit realization and improvement in efficiency as a result of process  
automation implementation**

*and*

**2008 Second Place Winner  
for  
Biggest improvement in quality production & customer responsiveness as a re-  
sult of process automation**

**Section I. Background** — Please provide a description of the subject workflow environment and conditions prior to implementation:

Cox Target Media, a Direct Mail Advertising Company based in Largo, FL. The company's product is the famous "Valpak" Blue Envelope which contains coupons from Local Advertisers.



Cox Target Media, Inc. (CTM) has seen its business increase significantly over the past 10 years, outpacing the growth of the direct mail industry. To improve Valpak's leading position, a dramatic change was necessary to help sustain the company's long term outlook. With the support of its parent company, Cox Enterprises, CTM set out to design a premier manufacturing facility that would achieve its business model and meet its growth needs.

Before this project the company had three offset printing production facilities and over 4,000 production employees. The printing, binding and inserting equipment was old – 1980 vintage. The communication of job instructions was paper driven. Much of the collation and inserting was performed by hand and thus labor intensive with a high propensity for errors. The company did not have an automated method for product tracking, workflow analysis or waste reporting.

The new plant is called the Valpak Manufacturing Center which consists of 500,000 square feet facility, with a construction cost of over 200 Million Dollars. The plant started production in July, 2008. **[Judges' Note: This was found to be a typo and should be January, 2008.]** This site is the industry's first of its kind fully-automated, JDF-compatible and JMF-enabled print manufacturing system. Experts state that this is the closest thing to a "lights out" print production operation to be found anywhere in the world. By combining the very latest automated prepress, printing, finishing and distribution technologies, Cox Target Media anticipates that the new plant will be able to more than double the company's previous production capacity and simultaneously cut cycle times in half while also lowering labor costs as much as 40%.



**Section II. Objectives** — Please provide a description of the printer, publisher or prepress service’s goal and motivation, including any quantities criteria upon which the goals were established:

The goal was to build a state of the art automated facility that would reduce the cost of the manufacturing process, increase product quality and decrease order cycle time. The quantitative goals were to reduce manufacturing expense 75% (from a factory that would require 2,000 employees to produce the work to 400). Decrease cycle time from four days to 8 hours and to develop a process to insure that the correct inserts are placed in the correct envelope. In summary-

- The automate as many processes as possible
- To manage the ganged production runs on the large format presses
- Manage the print buffer or WIP between press and inserting
- To reduce staffing
- To create a harmonized workflow throughout the production process

**Section III. Methodology** — Please provide a description of the process of selecting a solution, including alternatives and deciding factors:

In order to meet the goals of the project the companies management realized that they had to have a high degree of automation, networked communication across different manufacturers electrical controls platforms, instantaneous product tracking throughout the manufacturing process, and access to waste, delays and process fault warnings. During project meetings with the equipment manufacturers it was noted that the industry was developing a set of standards using the JDF standards based on XML standards. These standards enable the integration of commercial and planning applications into the technical workflow, ensuring maximum possible integration between the different suppliers involved in the project.

**Section IV. Implementation Story** — Please provide a description of the implementation effort including timeline, participants, critical path/milestones, obstacles overcome (if any), training and testing:

The entire project had critical timelines that were documented in a Gantt chart. One of these pages is displayed below. Each supplier involved in the project had well defined timelines that they had to adhere to from the start of the projection through product testing and training. The entire project took over two years to complete.

at:

MÜLLER MARTINI		CTM PRINT ROLL INSTALLATION				VERSION: T
ID	Task Name	Duration	Start	Finish	Predecessors	Resource Names
0	Cox_Target_Media	450 days	Fri 6/17/05	Thu 3/8/07		
1	Cox Target Media Print roll Project	450 days	Fri 6/17/05	Thu 3/8/07		
2	Integrated project Milestones	375 days	Fri 9/30/05	Thu 3/8/07		
3	Equipment design release for manufacturing	0 days	Fri 9/30/05	Fri 9/30/05		
4	Equipment Parts Manufacturing	120 days	Mon 10/3/05	Fri 3/17/06		
5	Equipment Assembly And Manufacturing	80 days	Mon 4/3/06	Fri 7/21/06		
8	Press Delivery System 1	32 days	Mon 10/2/06	Wed 11/15/06		
7	Floorveyor	32 days	Mon 10/2/06	Wed 11/15/06		
8	Equipment Onsite	0 days	Mon 10/2/06	Mon 10/2/06		
9	Installation Start	0 days	Mon 10/9/06	Mon 10/9/06	191SS	
10	Waste Gates Ready For Waste Connection	0 days	Fri 10/13/06	Fri 10/13/06		
11	Equipment Ready to Run	0 days	Fri 11/3/06	Fri 11/3/06	199	
12	Equipment Ready for Production	0 days	Wed 11/15/06	Wed 11/15/06	223SS	
13	Topveyor	32 days	Mon 10/2/06	Wed 11/15/06		
14	Equipment Onsite	0 days	Mon 10/2/06	Mon 10/2/06	8	
15	Installation Start	0 days	Thu 10/19/06	Thu 10/19/06	194SS	
16	Equipment Ready to Run	0 days	Fri 11/10/06	Fri 11/10/06	214SS	
17	Equipment Ready for Production	0 days	Wed 11/15/06	Wed 11/15/06	223SS,12SS	
18	Windup Stations	32 days	Mon 10/2/06	Wed 11/15/06		
19	Equipment Onsite	0 days	Mon 10/2/06	Mon 10/2/06	14SS	
20	Installation Start	0 days	Mon 11/8/06	Mon 11/8/06	202SS	
21	Equipment Ready to Run	0 days	Fri 11/10/06	Fri 11/10/06	214SS	
22	Equipment Ready for Production	0 days	Wed 11/15/06	Wed 11/15/06	3,12SS,17SS	
23	Press Delivery System 2	60 days	Mon 11/13/06	Mon 2/5/07		
24	Floorveyor	60 days	Mon 11/13/06	Mon 2/5/07		
25	Equipment Onsite	0 days	Mon 11/13/06	Mon 11/13/06	226SS	
26	Installation Start	0 days	Mon 11/27/06	Mon 11/27/06	229SS	
27	Waste Gates Ready For Waste Connection	0 days	Fri 12/1/06	Fri 12/1/06		
28	Equipment Ready to Run	0 days	Tue 1/2/07	Tue 1/2/07	249SS	
29	Equipment Ready for Production	0 days	Mon 2/5/07	Mon 2/5/07	254	
30	Topveyor	60 days	Mon 11/13/06	Mon 2/5/07		
31	Equipment Onsite	0 days	Mon 11/13/06	Mon 11/13/06	226SS	

Reference schedules:  
 BBH:060327:Daifuku :Integrated project schedule march 2006  
 Goss:Master Schedule V12

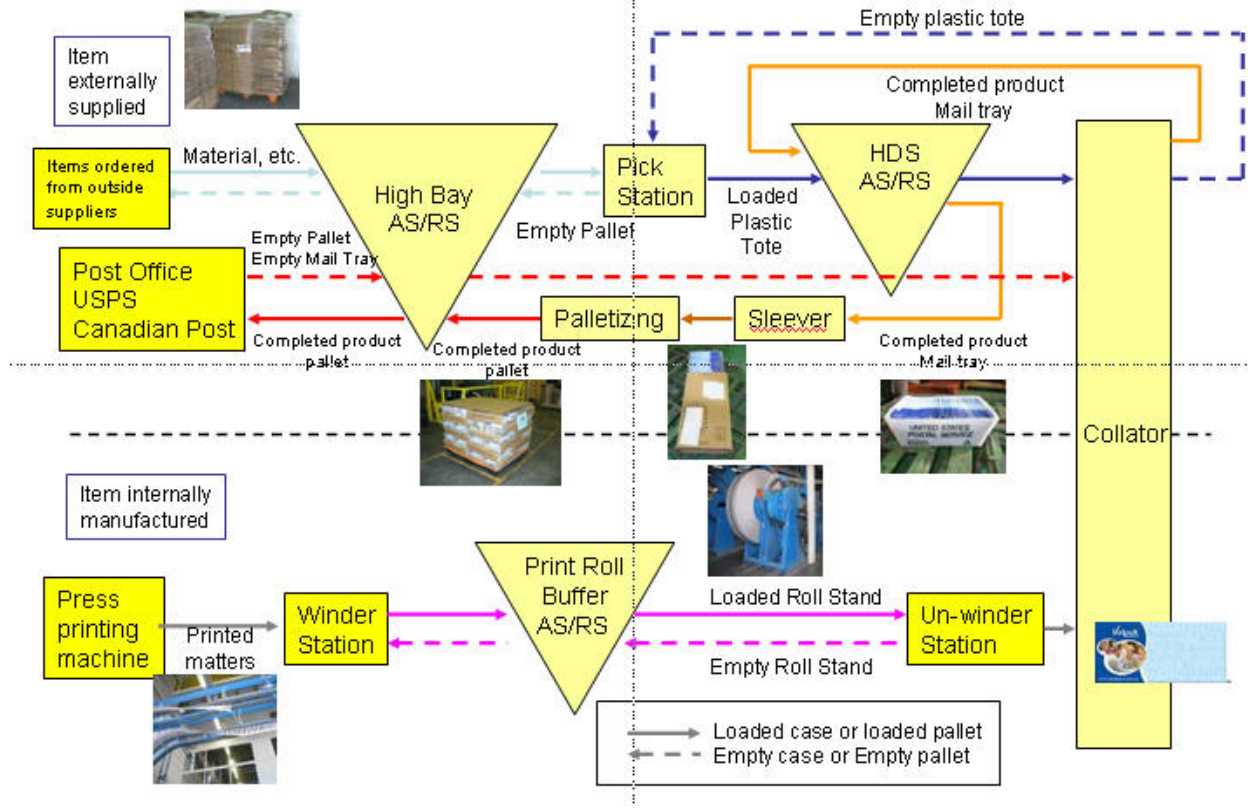
CARLOS MARTINS  
5/1/2006

See VMC Process Video and VMC Time Lapse Video for this project at the link provided below:

[http://www.coxtarget.com/vmc/company\\_profile.html](http://www.coxtarget.com/vmc/company_profile.html)

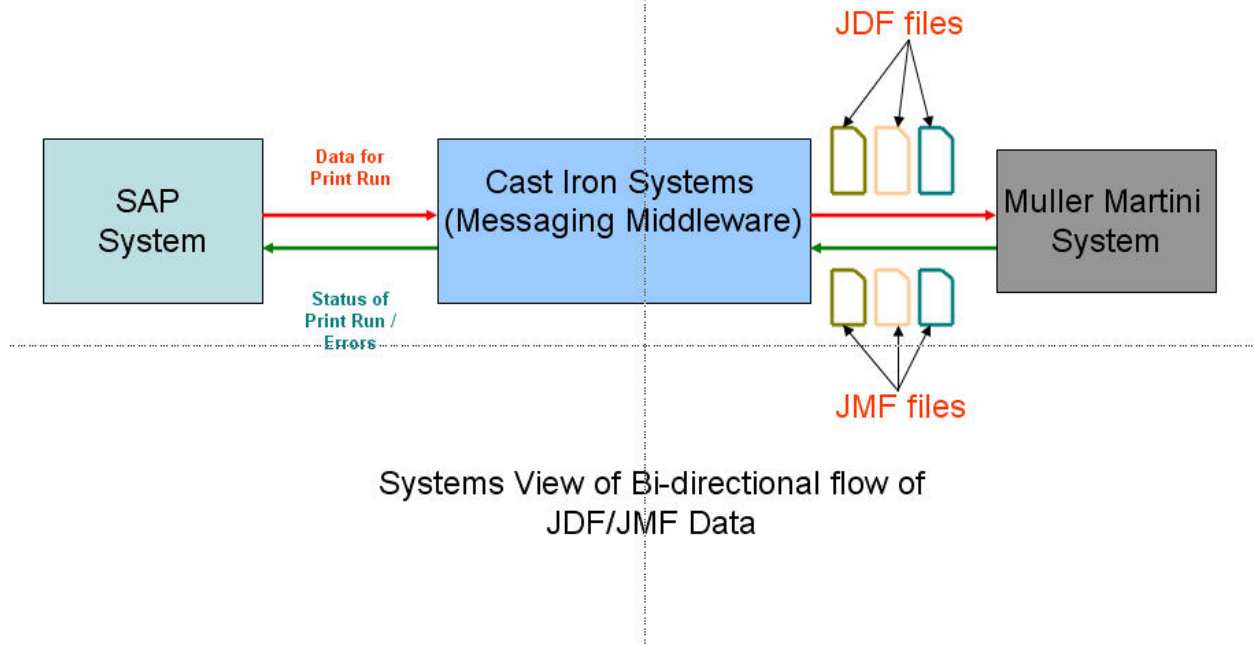
**Section V. Resulting Workflow/Processes** — A description of the resulting workflow, including any applicable workflow or process diagrams.

# Production Process



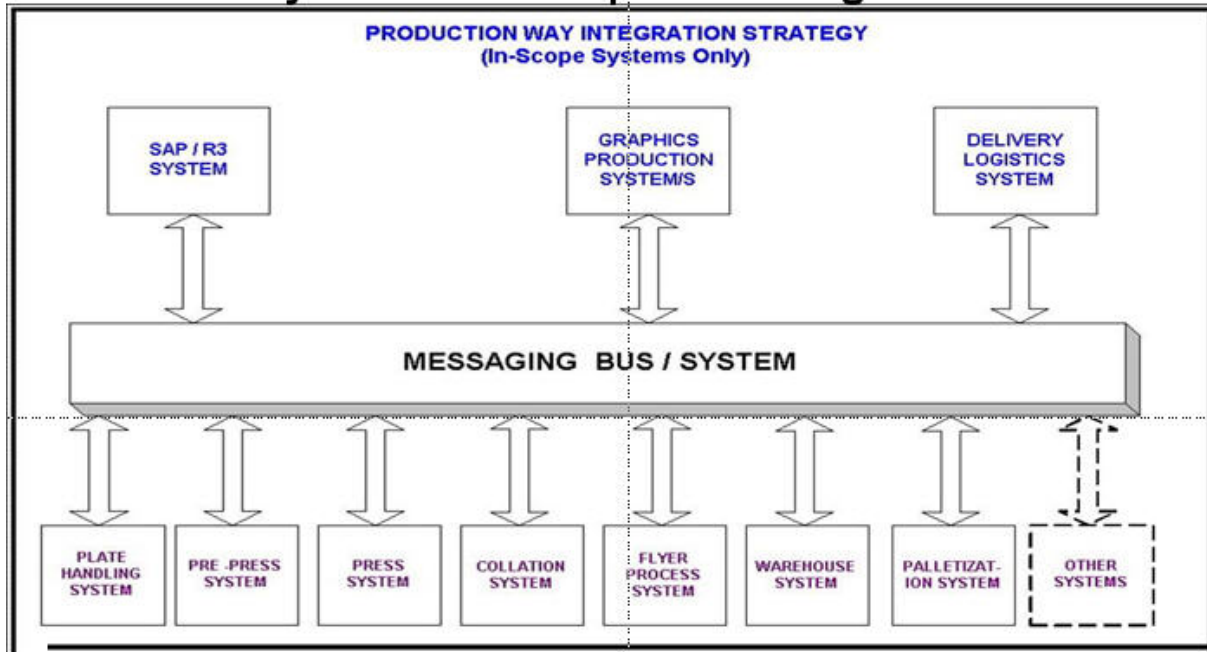
Above is the detailed workflow of the entire production process. The company and suppliers used this diagram to design the automation and communication process.

## Valpak's Customized Solution to JDF Workflow



Next, the company mapped the JDF/JMF networked communication process that would be used to link the manufacturing equipment and provide access to product status.

## Systems Landscape and Integration



PrePress Systems (CTP and Color Presets to Press) – Kodak / Creo

Plate Handling System – Burgess Industries (BII)

Press System – Goss International (GOSS)

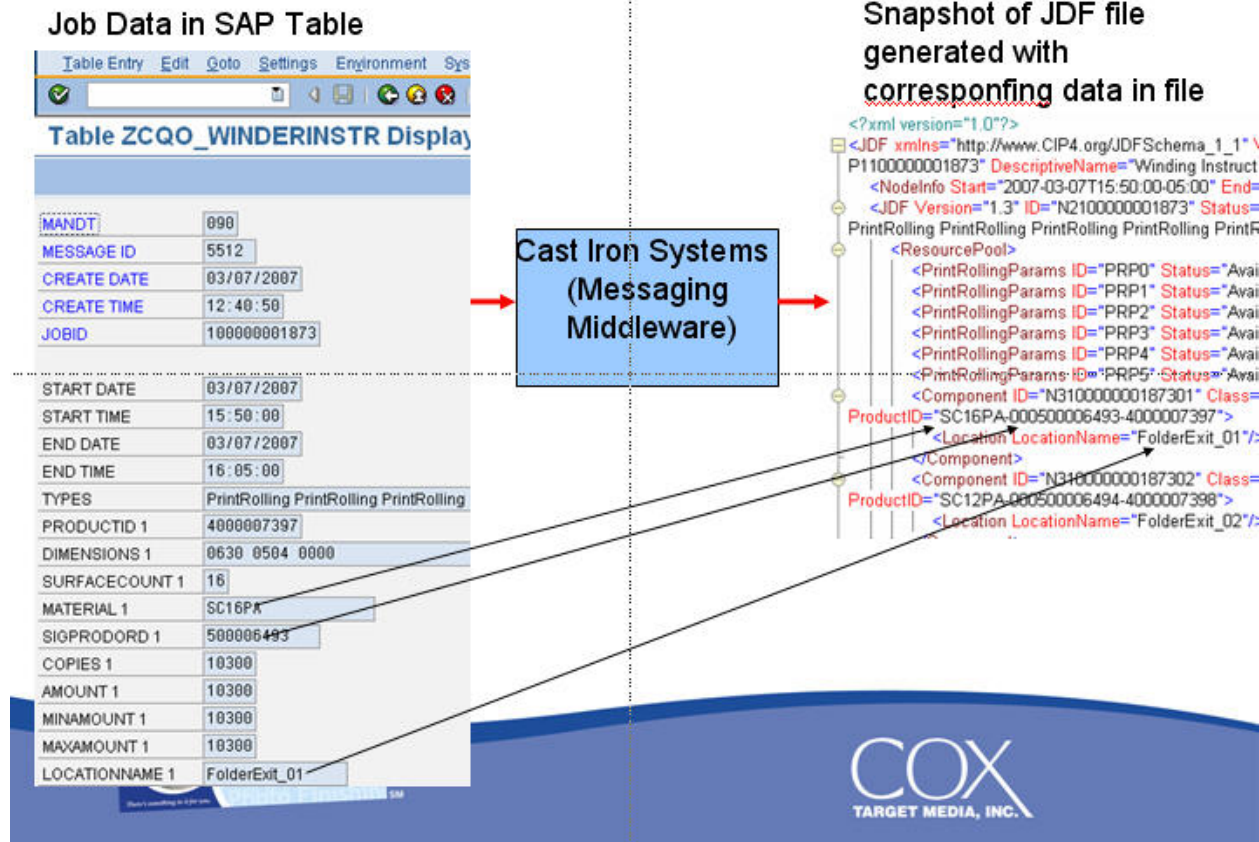
Signature Capture System – Müller Martini (MM)

Collation System – Böwe Bell+Howell (BBH)

Warehousing System – Daifuku America Inc (DAC)

Above is the landscape diagram for the systems integration.

## Data view of Customized JDF



Above is a detailed view as to how the product specifications were converted to JDF messages.

### Section VI. Optional Detail — Please provide at least one of the following:

- ROI — Please provide a quantitative analysis of the hard and soft ROI factors expected and realized, to include breakeven analysis, IRR or NPV determination of hard factors and testimonial evidence from users or customers as to the realization of soft benefits.

Industry experts agree that the Cox Target Media is the most automated and efficient offset printing plant in the world. The plant efficiency, process cycle time and quality has been achieved by developing the integrated JDF/JMF workflow. The harmonized workflow has been achieved through the use of integrated job instructions and transparent job tracking.

The company has decreased the required manufacturing head count and labor expense over 75%. The reduction is cycle time from four days to eight hours as improved cash flow and customer service.

- Improvement in Quality and Customer Service — Please provide quantitative evidence of improvements in product quality, production feedback and analysis, and quality control as well as data and/or

testimonials providing evidence of improved customer service, which may include improved delivery times, fewer errors in production or communications, better customer communications and production reporting and so forth.

The level of automation, electronic job instructions and product tracking insures that the correct insert is always placed into the proper envelope. No human hands touch the coupon during the manufacturing process. Ink key pre-sets and machine settings are made from JDF files to insure accuracy and repeatability. Color reproduction and register are monitored on press for consistency throughout the press run. Process waste is precisely measured and tracked which allows management to focus their efforts on further process improvements.

- Innovation — Please Provide a description of the innovative aspect of the process and an argument for why this is unique and new, with a comparison to traditional alternatives and a description of the primary benefit the innovative aspect of the new process.

At Cox Target Media's new Valpak® plant, JDF technology is providing an innovative vision of the future, a model of end-to-end automated efficiency that the worldwide print industry would be well-advised to watch closely. The new facility is capable of producing approximately 54 billion coupons annually. On the plant floor are two Goss Sunday 4000 web offset presses, each with automatic transfer function. Up to 12 different products feed into a Muller Martini press delivery system, each running in a defined system run length of about 10,000. Muller Martini's Floorveyor conveying system with high-speed waste gates and diverting technology is configured to both presses. Muller Topveyor overhead conveyors with pick-up and delivery stations then speed product into Muller PrintRoll P-220 twin winding stations. The complete press delivery operation is controlled by the proprietary Muller Martini MACOS (Master Control System). Utilizing JDF and JMF in the CIP4 protocol, the system tracks all of the 12 products delivered for print finishing - and for the first time ever in the industry, this "smart" press delivery technology communicates back to the press, in real time, JMF messaging, to commence auto transfer to begin printing the next set of 12 signatures.