



PULP & PAPER

MeadWestvaco

Corporate Headquarters:

Stamford, Connecticut

Technical Environment: Intel Pentium processors, Windows NT, Windows XP, Windows 2000, SQL server, Oracle

Challenge: To quickly integrate new or acquired facilities into a common information platform; to enable the company to improve business via more operational transparency; to optimize processes and procedures.

Why OSIsoft Won: OSIsoft's reputation for keeping pace with and partnering with strategic technology providers. OSIsoft listens to the customer and delivers what companies need.

RtPM Applications:

- Automated Reports
- Baseline Best Practices
- Hierarchical Process Data Views
- Key Performance Indicators
- Operations Desktop
- Paper Machine Performance Monitor
- Production Analysis
- Environmental Compliance Monitoring
- Control Loop Monitoring

Benefits:

- Aligned business strategy with manufacturing tactics
- Linkage between business requirements and IT systems
- Cost and time efficiencies in integrating new mills into the enterprise information infrastructure
- Collaborative environment for sharing and implementing best practices
- Lowered risk and cost efficiency of enterprise-wide development and deployment of RtPM applications
- Standardization of reporting for greater accuracy and efficiency

RtPM links MeadWestvaco's business strategy with manufacturing tactics

The merger of the Mead and Westvaco paper companies to form MeadWestvaco — an \$8 billion-per-year worldwide enterprise — required the integration of complex production information from 15 major production facilities. However, the new organization had a distinct advantage in that both founding companies used OSIsoft's Real-time Performance Management (RtPM™) Platform and PI System™ data engine extensively, which enabled MeadWestvaco to rapidly integrate data in multiple production facilities using a common MES architecture and strategy for its information/performance management system. With this common enterprise infrastructure, MeadWestvaco is better able to react to business conditions, accelerate the integration of newly acquired facilities and quickly get new production facilities into operational mode.

MeadWestvaco's long history of success using the RtPM Platform and PI System to run the daily operations started with over 300 users during the initial 1988 deployment. Since then, the company has continuously upgraded and expanded the role of RtPM in enterprise-wide operations. Today, over 2,000 employees use RtPM as their primary operations desktop to monitor the various mill processes, launch standard operating procedures, manage paper quality, monitor environmental emissions from the pulp mill, manage bleach plant performance, monitor control loop tuning, interface with product tracking, track chemical usage, manage inventory and monitor the performance of their real-time performance networking infrastructure.



Thomas J Holcombe
Enterprise Manufacturing
Solutions Mill Systems Manager

"RtPM data is the common element which links our business strategy with manufacturing tactics. It ties "when and how" in process operations to "what and why" in business operations."

MeadWestvaco, like most manufacturers in virtually every industry, is constantly seeking to cut costs, respond effectively to ever-changing worldwide customer demands, and enhance competitiveness through mergers and acquisitions.

Striking the deal and assuming ownership of new facilities are probably the easiest parts of the process. Once a company acquires new production sites, it must unify them as a business entity as quickly as possible in order to achieve the desired business benefits. In a case where two formidable companies — each with dozens of manufacturing facilities — merge to form an entirely new business entity, the task becomes extremely complex.

This was the situation for Mead and Westvaco in late 2001. The corporations, best known for specialty paper and packaging products, merged to form MeadWestvaco, a formidable \$8 billion-per-year worldwide enterprise. Merging the North American paper and packaging and specialty chemical divisions alone required the integration of production information from all of the production facilities.

MeadWestvaco initiated the complex production integration project with a distinct advantage, however. Both founding companies had made extensive use of OSIsoft's RtPM Platform, which is powered by the PI System (PI) to deliver real-time data to every desktop. The longevity and reliability of this infrastructure had already proven extremely valuable in managing process performance.

The PI real-time, time-series data engine is the "heartbeat" of OSIsoft's RtPM solutions. PI acquires data from automated control systems, laboratory information systems, SCADA systems, and enterprise systems including SAP. Sophisticated processing tools then transform stored data into relevant intelligence that people can rely on to make timely decisions. The PI System can store a near-infinite amount of data — at original resolution — virtually forever. This data is a valuable



The sharing of information across multiple manufacturing and execution systems provides the cohesive environment necessary to produce the highest quality product.



24 x 7 operations require continuous supervision and maintenance for a world-class operation.

asset for MeadWestvaco, enabling everyone to do business based on reality and fact, not guesswork. MeadWestvaco started with over 300 RtPM users during the initial 1988 deployment and is continuously increasing this number with currently more than 2,000 users.

The ubiquity of RtPM in MeadWestvaco along with widespread support from management allowed the company to employ several applications in establishing a common information platform across all mills. Many of the applications are easily configured using the Advance Computing Engine (ACE) and the ModuleDatabase with benefits such as the:

- Creation of a unified set of analytics that is used across multiple mills
- Ability to write an application once and deploy it throughout the enterprise, raising cost and time efficiency substantially, while lowering error risk
- Standardization of mill production reports, enabling greater accuracy and efficiency in meeting regulatory and business requirements
- Dramatic reduction in the time needed to integrate newly acquired mills into the information infrastructure
- Creation of an environment in which mills are able to easily share and implement best practices

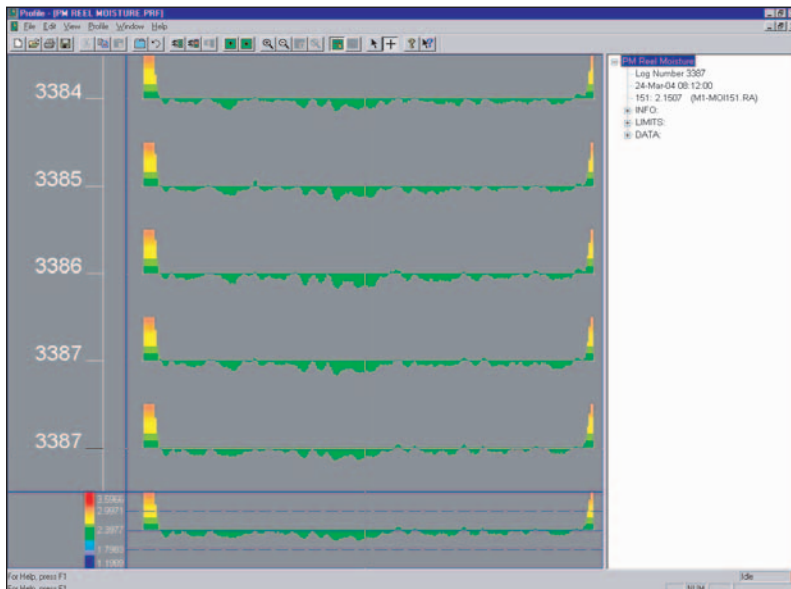
Establishing a common environment

Currently, MeadWestvaco conducts papermaking, packaging and specialty chemical operations in 15 North American production facilities, each with its own mill control systems, paper gauging systems and other related software. The company considers its manufacturing execution systems (MES) essential, since those systems feed mill data into applications for product tracking, quality control, safety, health and environmental maintenance. Given the diversity of production facility configurations and operations, the company determined that it needed a "common platform"

for developing MES-level applications. Because RtPM had proven extremely valuable in the collaboration, analysis and management of process performance, MeadWestvaco decided to make the RtPM Platform its global standard information infrastructure.

“We view MES as the enabler for the way we do business, so we wanted to build MES applications once and be able to move them to other sites for multiple implementations with a minimum of additional work,” says Robert Bolm, MeadWestvaco’s manufacturing solutions analyst. The company quickly realized that OSIsoft’s RtPM Platform, used widely in all major Mead and Westvaco facilities, was an ideal foundation for such a system. In 14 months, the company was able to get all of its sites on the common RtPM infrastructure.

“OSIsoft’s RtPM Platform provides the linkage between MeadWestvaco business requirements and IT systems as well as the tools to support the strategy behind our MES application suite,” says Bolm. “The acquisition of operational data enables us to fully see and understand all of our control and manufacturing processes through real-time display and historical analysis. The aggregation of operations data answers the questions for our business segments and provides linkage between manufacturing and business.”



OSIsoft’s Profile tool enables staff to view past profiles for upset conditions at the time the paper was produced. This capability is extremely valuable in troubleshooting the loss of paper due to coating related defects.

Reusing code from site to site

With a common environment in place throughout MeadWestvaco, Bolm and his virtual team of administrators throughout the company could concentrate on establishing a “common interface” between mill systems and MES applications so they could easily unify data from multiple mills. The key tools for accomplishing this goal were the Advanced Computing Engine (ACE) and the ModuleDatabase, says Diane Bricco, data historian analyst at MeadWestvaco’s Escanaba mill and a leader in the Coated and Specialty Papers Group implementations.

Bricco notes that the ability to define calculation functions in reusable ActiveX components enables consistent reporting across multiple mills, reduced reliance on individual spreadsheets and tools and their inherent errors and misinformation.

“We didn’t have to go back in impose changing the tag names, and structures in the individual mills; we simply picked them up and created a template across them so that they could use them uniformly, which is a huge time and cost savings in implementation time,” says Bricco.

The ModuleDatabase also enabled MeadWestvaco to attach clear, intuitive aliases — such as “airflow” and “flow rate” — to tags throughout the enterprise, regardless of the mill-specific equipment and measurements to which the tags are attached. The beauty of this is that the individual mills are not forced to change their underlying systems or the way they do things. They simply capture the information and resolve it by using RtPM tools at a higher level. This is a huge time savings when rolling out new mills.

“PI tags need to be specific to the DCS points and gauging points specific to a location, so in the past, a common naming scheme would have been prohibitively complex and expensive,” says Bolm. “But with the ModuleDatabase, I can create common aliases for these diverse PI tags and call them the same thing within the ACE applications themselves. That provides us with portability of the ACE code from mill to mill.”

Integration enables more best practices enterprise wide

While most of the RtPM team’s energies have focused on establishing the common environment and interfaces, Bolm says their work will pay dividends in the ability to “roll up” data from multiple mills to enterprise-level business systems. By contrast, the company has begun an initiative to report fossil fuel use on a per-machine basis. “Part of that initiative uses ACE and the ModuleDatabase to get data from multiple sites into a common virtual data-store, so that each site reports its usage in the same way. We’re looking at rolling up environmental data likewise. We’ve done environmental reporting on a per-site basis for a long time, but now we’re using the RtPM Platform to pull numbers together in a common way across the company,” says Bolm.

Beyond specific applications, RtPM and PI have enabled MeadWestvaco to accelerate the overall integration of newly acquired facilities into the corporate infrastructure. For example, with Mead's past acquisition of a paper mill in Rumford, Maine, establishing an MES system that meshed well with Escanaba's took two years.

"But right now, if we put in an MES layer, we can accomplish the same sort of thing in just a few months," say Bolm. "This is all about being able to react to business conditions, to do the acquisition, implement the common platform and get the new facility in operational mode and in synch with corporate business goals in an amazingly short timeframe."

A shared RtPM environment enables PI administrators at MeadWestvaco mills to communicate best practices and knowledge more effectively. The interface to mill control systems offers administrators a common ground on which to discuss and resolve mutual issues. In addition, Bolm says, PI administrators from any mill can provide virtual assistance to their counterparts in other facilities. With a common performance management platform in place, RtPM is used enterprise wide as the primary operations desktop to better:

- monitor the various mill processes
- launch standard operating procedures
- manage paper quality
- monitor environmental emissions from the pulp mill
- manage bleach plant performance
- monitor control loop tuning
- interface with product tracking
- track chemical usage
- manage inventory
- monitor the networking infrastructure performance



Alerts at the operator level provides for faster resolutions bringing the process within proper limits quicker and more efficiently.

Start Date/Time: 01-Jan-04 00:00:00							Run		Print Report	
End Date/Time: 01-Jan-04 00:00:00										
EVAPORATORS		NO. 10	TANKS		GENERAL	POWER				
1.2	gpm	123.2	kPH 10	12.1	# WE	1234.1	kPH Tot	12.10	#7 MWatt	
1.2	% in	123.2	gpm	12.1	# WW	12.1	% Make-up	12.10	#8 MWatt	
1.2	% out	1.123	MPO	12.1	# SB	1234.1	gpm Cond	12.10	#9 MWatt	
1.222	MPD	1.1	% Op	0.1	# BO			12.10	Purch Par	
1.2	No. 1	1.1	% O2	12.1	# SW					
1.2	HSC	1.10	lbs	12.1	% sulf			48.40	Total	
		12.1	% sol	12.1	% White					
		12.1	% sol	12.1	% Green					
NO. 8		NO. 9		NO. 11		OUTSIDE				
123.1	kPH 8	123.1	kPH 9	123.1	kPH 11	12.1	kGPM			
1.12	\$4LB STM	1.10	\$4LB STM	1.11	\$4LB STM	12.1	Deg F			
		1.1	RPM	123.1	TPO 11	12.1	# Res #2			
		12.1	Avg Level	12.1	% Fdis 11	12.0	# Res #1			
		12.1	Avg Demand	1.1	% Op 11	12.1	MSALDAY			
		123.1	Min	0.11	lbs/MMBTU NOx					
No. 10 Boiler MPD		123.200		MELB, Steam		0				
No. 10 Boiler MELB, % STB		1234		Evaporator GPM		1.222		Reboiler		
Evaporator GPM		1.1		Evap Prod Rate		1.10		12.1		
Capacity		1.1		TMS		1.10				

Key Performance Indicators in a spread-sheet format utilizing OSIsoft's DataLink automatically sends real-time information to production managers for daily performance review.

Real-world, real-time success

The RtPM benefits and savings presented here, as well as the superiority of OSIsoft products, are actual matters of record at MeadWestvaco. To find out how your company could become a real-world success story like this one, email casestudy@osisoft.com. Explore the power of RtPM at www.osisoft.com/rtpm.

